

ABSTRACT

Title of dissertation: ESSAYS ON SUBJECTIVE WELL-BEING:
 APPLICATIONS IN INTERNATIONAL MIGRATION,
 POVERTY ALLEVIATION PROGRAMS,
 AND INEQUALITY OF OPPORTUNITY

Namrata Chindarkar, Doctor of Philosophy, 2012

Dissertation directed by: Professor Carol Graham
 School of Public Policy and Brookings Institution

This dissertation examines questions pertaining to international migration, participation in poverty alleviation programs, and inequality of opportunity using a subjective well-being approach. The theoretical objective of this dissertation is two-fold - (i) to examine subjective well-being as a factor that induces individuals to make critical decisions and (ii) to examine whether seeking agency or a better life affects subjective well-being.

Chapter 1 examines the effect of life satisfaction on intention to migrate abroad using survey data on 18 Latin American countries. Three key findings emerge that support life satisfaction as a significant driver of intention to migrate abroad. First, the findings suggest that reporting high life satisfaction is negatively associated with intention to migrate abroad controlling for education and other background factors. Second, I find a consistently negative and significant effect of the interaction between high life satisfaction and education suggesting that more educated individuals reporting high life satisfaction are less likely to consider migrating abroad as compared to more educated individuals reporting low life satisfaction. And third,

even after controlling for relative deprivation the negative effect of the high life satisfaction and education interaction term on intention to migrate abroad remains statistically significant suggesting that international migration decisions of those with higher education are not solely driven by economic motives. In addition, I find that those who are highly educated (college and higher) are more likely to consider migrating abroad, controlling for life satisfaction and relative deprivation, mainly due to weak economic outlook of and low wages in the home country.

Chapter 2 uses non-experimental regression models and quasi-experimental propensity score matching models to examine the effect of being a recipient of livelihood protecting in-kind social transfers and livelihood promoting microfinance on subjective and objective economic well-being. I find that being a microfinance recipient has significant positive effect on subjective economic well-being of the very poor households. This implies that being a recipient of livelihood promoting poverty alleviation programs makes poor households “feel less poor”. Further, being a microfinance recipient also has a significant positive effect on the consumption or objective economic well-being of the very poor households. Disaggregating the positive effect on consumption reveals that being a microfinance recipient significantly increases human capital development expenditures, particularly education and health. In contrast, there is a significant negative effect on the subjective economic well-being of recipients of livelihood protecting social transfers, but the effect does not hold for households that are very poor. Therefore, there is seemingly a stigma associated with receiving social transfers. Contrary to expectation, being a social transfers recipient has a negative effect on consumption, which is possibly due to a substitution effect.

Chapter 3 uses the Human Opportunity Index (HOI) to measure the degree of inequality of opportunity for rural-urban migrant children as compared to urban and rural children in China. I find that migrant children face significantly more inequality of opportunity in basic opportunities as compared to their urban and rural counterparts. Specifically, they experience high levels of inequality

of opportunity in education and in basic services such as water and sanitation. With respect to completing primary education on time, only about half of all opportunities needed to ensure universal access are both available and allocated equitably for migrant children as compared to urban and rural children. Similarly, for water and sanitation, opportunities available and equitably distributed are significantly less for migrant children as compared to urban and rural children. Further, within the sub-group of migrants, recent migrants, that is, those who have been residing in the urban area for less than three years are worse-off when compared to migrants who have lived in the city for longer periods of time. Testing the association between migrant childrens' HOI and the subjective well-being of their households suggests that an increase in the HOI is positively and significantly associated with household well-being measured in terms of subjective standard of living and feelings of upward mobility. This implies that improving the outcomes for migrant children could be a policy tool for improving the well-being of migrant households.

ESSAYS ON SUBJECTIVE WELL-BEING: APPLICATIONS IN
INTERNATIONAL MIGRATION, POVERTY ALLEVIATION
PROGRAMS, AND INEQUALITY OF OPPORTUNITY

by

Namrata Ravindra Chindarkar

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Advisory Committee:

Professor Carol Graham (Chair)

Professor Melissa Kearney

Professor Steven Heeringa

Professor Madiha Afzal

Professor Kevin Jones

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Dedication

To Aai, Baba, Dadu, and Sagar.

Acknowledgments

I left my home country India and joined the Ph.D. program at the School of Public Policy because I believed that it would open up an exciting new world of knowledge and opportunities for me. Little did I know then that my own quest for better opportunities and a more fulfilling academic experience would trigger my interest in the area of subjective well-being. And if it were not for the endless support and encouragement of my exuberant advisor, Carol Graham, I would not have delved so deep into this intriguing and interesting area of research. I have learnt from her how an outstanding academic and mentor should be. Whether it was a pressing question related to my dissertation or advice on my career, she has always made herself available for help. Her guidance has also helped me shape my future research and I look forward to collaborating with her.

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Chapter 1

Is subjective well-being of concern to potential migrants from Latin America?

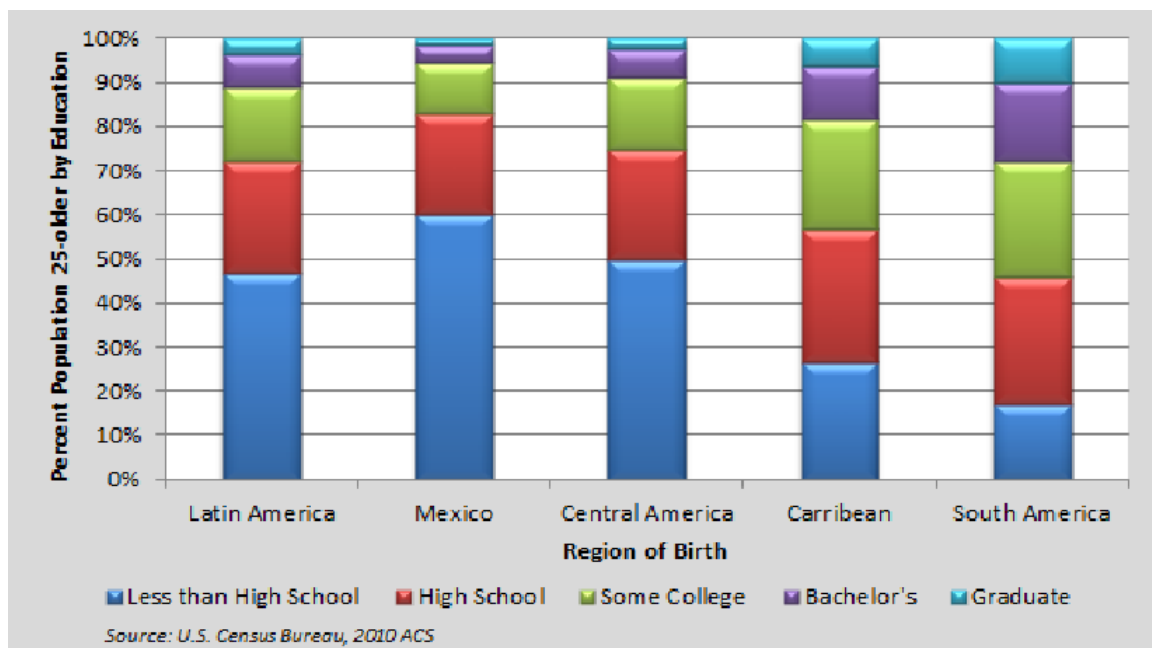
1.1 Introduction

Migration has long been a mechanism for those in search of better opportunities and a good life. A critical debate in the migration domain relates to the migration and specifically international migration of educated and skilled individuals from developing and emerging economies. The 2011 International Migration Outlook states that there is a rise in immigration numbers of students and skilled workers into OECD countries and though there was a decline during the recession period, the overall trend continues to be positive (OECD, 2011). It further states that countries and regions with skilled and educated labor, especially China, India, and Latin America, continue to be among the top out-migration countries.

These trends raise an interesting theoretical and policy puzzle. Neoclassical economic theories have traditionally argued that raising incomes in sending countries can reduce international migration. However, even though most of these countries are among the fastest growing emerging economies and have seen wage increases between 6 and 9 percent over the last five years, they continue to experience large international migration outflows year after year, a significant portion of which is out-migration of skilled and educated labor. Further, despite emerging economies attracting huge foreign investments and creating jobs for skilled workers, they are constantly striving to hold on to their skilled and educated labor. According

to a 2001 McKinsey study, roughly a third of the professionals in research and development leave developing countries in Asia and Latin America to work in the United States, European Union, or Japan (Devan and Tewari, 2001). According to the 2010 American Community Survey, of all Latin American-born migrants into the United States who are 25 years and older, 25 percent are high school graduates while 28 percent have college and higher level of education (U.S. Census Bureau, 2010). These trends and statistics are suggestive of mechanisms guiding international migration decisions that go beyond economic growth and incomes and may plausibly explain part of the puzzle.

Figure 1.1 – Education levels among foreign-born migrants in the US



Some explanations can be found in studies that examine inter-regional migration within the US as a function of quality of life (Cebula and Vedder, 1973; Liu, 1975; Hsieh and Liu, 1983). In these studies, quality of life is quantified as a “set of wants” that includes health and welfare provision, educational development, participation in political activity as well as social and environmental factors such as crime rate and pollution. The key finding that emerges from this literature is that in the

long-run the pursuance of better quality of life turns out to be more significant than per capita income for an individual making a migration decision. While quality of life, as defined in these studies, captures objective wants and circumstances, it does not capture the individuals' unobserved subjective experiences of life that may also drive migration. For instance, economic growth and industrialization can transform personal values about how and where to live, mere crime and corruption rates do not capture the psychological cost of victimization that may induce people to move, and the notion of a "better life" in itself is highly subjective and may differ for those who are more educated (Diener and Suh, 1997; Graham, 2010). Expanding upon this body of work, I therefore examine intention to migrate abroad as a function of life satisfaction, which is a cognitive-evaluative sense of satisfaction with life, in addition to economic and quality of life factors.

Using data on Latin America, this chapter investigates subjective well-being and more specifically, life satisfaction, as a mechanism that may be driving international migration decisions especially of those who are more educated. Instead of examining linkages solely between life satisfaction and intention to migrate abroad, I also analyze relative deprivation to identify possible off-setting effects of economic factors. Relative deprivation refers to the economic position of an individual as compared to a specific reference group. This implies that relative to the reference group, the individual may be economically "better off" or "worse off". Relative deprivation is a crucial factor as previous studies have found that income relative to a reference group is closely linked with household migration decisions. Stark (1984) and Stark and Taylor (1989, 1991) posit that individuals within a household undertake migration not only to increase the absolute income of the household but also to improve the economic position of their household relative to a specific reference group. Literature on the linkages between life satisfaction and migration is very limited. A study by DeJong (2000), which explicitly addresses life satisfaction and rural-urban migration decisions in Thailand, finds that evaluation of life satisfaction based on income, comfort, stimulation, and affiliation along with norms

about migration are important determinants of intention to migrate. However, his analysis focuses on internal or within-country migration. There is no previous study that has examined intention to migrate *abroad* from a subjective well-being perspective while controlling for relative deprivation.

This chapter aims to contribute both to the literature on international migration as well as on subjective well-being. It examines whether life satisfaction is significant in driving international migration decisions after accounting differences in objective well-being. In particular, it investigates the effect of life satisfaction on the migration intentions of individuals who are more educated and the factors that reinforce the effect. In doing so, it aims to identify whether the individuals with higher education who intend to migrate are possibly “frustrated achievers”, that is, individuals who are more educated and objectively (based on income or wealth) better off but still less satisfied (Graham and Pettinato, 2002). I do not aim to make an argument for or against migration of more educated individuals but rather aim to provide an alternative explanation to their migration decisions.

The key findings of this chapter are that more educated individuals reporting high life satisfaction have weaker intentions to migrate abroad as compared to more educated individuals reporting low life satisfaction and the result holds across different specifications. Even after controlling for relative deprivation, the interaction between high life satisfaction and education continues to have a significant negative effect on intention to migrate abroad. In addition, I find that those who are highly educated (college and higher) are more likely to consider migrating abroad, controlling for life satisfaction and relative deprivation, mainly due to weak economic outlook of and low wages in the home country. The findings suggest that subjective well-being is a plausible mechanism driving international migration decisions besides income differentials, particularly of those with higher education.

The chapter is organized as follows. Section 1.2 reviews existing literature and findings on migration, relative deprivation, and subjective well-being. Section 1.3

describes the data, discusses the methodological framework and empirical strategy, and presents descriptive statistics. Section 1.4 presents the main findings. Section 1.5 discusses the mechanisms driving intention to migrate abroad. Section 1.6 concludes.

1.2 Review of literature

While there is literature examining relative deprivation and migration, and life satisfaction and migration separately, there is no study that links the three variables in the context of international migration decisions. Existing literature on relative deprivation and migration argues that in addition to absolute income, migration decisions within a household are also significantly correlated with the desire to improve economic position of the household relative to a specific reference group (Stark, 1984; Stark and Taylor, 1989, 1991). The relative deprivation construct has been systematically and in detail explained by Crosby (1982) in his study on relative deprivation felt by working women. He argues that relative deprivation arises due to two preconditions - (i) to want what one does not have and (ii) feeling that one deserves whatever one wants but does not have. Using the economic approach Stark and Yitzhaki (1988) further refined the construct of relative deprivation by building upon Runciman's (1966 as quoted in Stark and Yitzhaki 1988) conditions for an individual to feel relatively deprived. Runciman defined four conditions - (i) a person does not have X (ii) the person sees other person or persons as having X (iii) the person wants X and (iv) he sees it as feasible that he should have X. The relativity of the concept is due to (ii) and (iv). The feeling of deprivation is defined by (i) and (iii).

Stark and Taylor (1991) empirically test the effect of relative deprivation on migration using Mexico-to-U.S. migration data. They use a sample of 423 adults from 61 randomly selected households in two villages in Mexico and collect data on both individual and household characteristics. Their findings support their hypothesis that greater relative deprivation in terms of income is associated with

a higher probability of a household allocating its labor time towards migration. In addition, they find that there is a significant negative effect of the relative deprivation squared term on migration, indicating that individuals at the bottom of the income distribution may not engage in migration due to the associated costs. Bhandari (2004) tests the relative deprivation hypothesis in Nepal using the Chitwan Valley Family Study and the Population and Environment Study surveys consisting of observations from 1805 households. Instead of income, he defines relative deprivation in terms of ownership and access to land. Based on this definition of relative deprivation he finds that after controlling for the effects of other socioeconomic factors, those with lesser landholdings (in terms of area) were more likely to engage in migration than those with greater landholdings. However, the effect was not statistically significant for those in the bottom-most category of landholdings suggesting that subsistence and survival was probably more important to these households than allocating resources towards migration. Thus, his findings are in accordance with those of Stark and Taylor (1991).

There is new literature on life satisfaction and happiness of immigrants as compared to natives. These studies have found that when compared to natives, immigrants report lower levels of happiness and this holds true in various cultural and social contexts (Safi, 2010; Bartram, 2011; Bobowik, 2011). Explanations offered for immigrants' low levels of happiness are that immigrants miscalculate how their happiness will be affected once they migrate and do not anticipate that their aspirations will rise as they start comparing themselves with the natives. For instance, both Safi (2010) and Bartram (2011) find that even after residing in the destination country for decades, immigrants in Europe and United States report low levels of happiness as compared to natives. However, evidence on whether low levels of life satisfaction or happiness *drive migration* is very scarce. In the one study that examines internal migration and life satisfaction using the 1992 and 1994 waves of the Thailand National Migration Survey, DeJong (2000) finds that evaluation of life satisfaction based on income, comfort, stimulation, and affiliation

along with norms about migration are important determinants of intention to migrate. In addition, he finds gender differences in expectations and evaluations of life satisfaction, which in turn affect the migration behavior of men and women differently. While women are driven to migrate by lower income and stimulation, men's intentions are promoted by affiliation and networks.

In summary, both relative deprivation and life satisfaction examined separately have a significant effect on migration decisions. Drawing upon this literature, this chapter evaluates the effect of life satisfaction on intention to migrate abroad after controlling for effects of relative deprivation using nationally representative survey data.

1.3 Data and methodological framework

1.3.1 Dataset

I use four waves of the Latinobarometro survey from 2004 to 2007 for the analysis. The surveys are repeated cross-sections conducted annually and contain approximately 1000 observations each from 18 countries across Latin America which include: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, and Venezuela. I analyze the dataset as repeated cross-sections (RCS) with year, country, and year-country interaction fixed effects. The inclusion of fixed effects controls for changes in migration intentions that may be a result of country and/or year specific factors such as bad economy, political turmoil, conflict, or disaster. The RCS model can be written as:

$$y_{it} = \alpha + \beta_1 x_{it} + \beta_2 Y_t + \beta_3 D_i + \beta_4 Y_t * D_i + \varepsilon_{it} \quad (1.1)$$

where, x_{it} represents the set of time-varying and country-varying variables, Y_t is the year fixed effect, D_i are dummies for each country, and $Y_t * D_i$ are the country and year interaction fixed effects.

1.3.2 Methodological framework

The research question that this chapter examines is: *Is overall life satisfaction significant in explaining intention to migrate, particularly of individuals with higher education, after controlling for relative deprivation?* Three key variables need to be operationalized and delved into - intention to migrate, life satisfaction, and relative deprivation.

The use of intention to migrate instead of actual migration numbers as the dependent variable is both data-driven as well as theory-driven. The Latinobarometro only asks respondents about their intention to migrate abroad by posing the question *“Have you and your family ever seriously considered going to live abroad?”* and does not ask about actual present or past movements. It may be argued that intentions are not reflective of actual migration patterns and therefore examining intentions may be of little relevance to migration policy. However, previous research on intention to migrate or the behavioral aspect of migration suggests otherwise and justifies the use of intentions to migrate as a predictor of actual migration. Among the first to investigate the socio-psychological dimensions of within-city migration, Rossi (1955), uncovers “place utility” factors as the main drivers of migration decisions and these are pertinent even in the context of international migration. These factors include assessments of social and physical characteristics of the current place or country of residence, job opportunities, and access to public services. These are similar to the quality of life factors as examined by Cebula and Vedder (1973), Liu (1975), and Hsieh and Liu (1983). Rossi (1955) does not limit himself only to identifying socio-psychological factors that increase migration potential, but goes a step further and uses them to predict actual migration, and verifies the predictions in a follow-up survey carried out eight months later. He finds that most of the families intending to move had done so and an even higher percentage of the families not intending to move remained in their old neighborhoods. Thus, he finds that migration intentions strongly correlate with actual patterns of migration or movements.

In a review of five studies on intention to migrate conducted in different socioeconomic contexts, Simmons (1986) finds that in four out of five studies that conducted follow-up surveys, intentions to migrate or move were moderately strong predictors of subsequent migration. These studies also utilize place-utility factors as the main independent variables to assess the degree of migration intentions. He argues that migrant intentions and motives provide a more complete understanding of why people move, and therefore help us identify the policies which would have to be implemented to modify the magnitude and/or direction of migration. In a more recent study on international migration, Liebig and Sousa-Poza (2004) use intention to migrate in their analysis and argue that using actual migration data in analyzing behavioral linkages especially in the context of highly educated individuals can be problematic due to certain inherent biases in the data such as migration policies, migrant networks, proximity, and so on. As “intention to migrate” is more pertinent to the incentives and disincentives that may lead to actual migration, it is a good proxy to test the propensity to migrate. In this chapter, I use satisfaction with education services, satisfaction with health services, and confidence in institutions as additional control variables to capture any effect that place-utility might have on intention to migrate abroad.

To operationalize subjective well-being, I use the question on life satisfaction - *“In general, how satisfied are you with your life?”* Life satisfaction is measured on a scale of 1 to 4 with value 1 representing “not at all satisfied” and value 4 representing “very satisfied”. The use of life satisfaction as against happiness is justified by literature, which argues that life satisfaction is a cognitive and judgmental state, which refers to an assessment of life as a whole. Essentially, life satisfaction is a cognitive-evaluative concept in contrast with happiness, which is thought of primarily as an affective concept reflecting positive feelings (Tsou and Liu, 2001). Shin and Johnson (1978 as quoted in Diener et al. 1985) define life satisfaction as “a global assessment of a person’s quality of life according to his chosen criteria.” Diener (1984) terms life satisfaction as the hallmark of subjective

well-being as it emphasizes an individual's own judgments and is not externally imposed. Some researchers such as Tatarkiewicz (1976 as quoted in Diener et al. 1985) go as far as stating that "...happiness requires total satisfaction, that is *satisfaction with life as a whole*", thus making life satisfaction a pre-condition for seeking happiness.

It is often argued that subjective well-being metrics such as life satisfaction are confounded by moods and contexts leading to validity issues. Moods and contextual factors such as a happy event or outcome of a game immediately prior to the survey may profoundly affect questions on life satisfaction (Schwarz and Strack, 1999). Further, there is evidence from psychology that some people are intrinsically happy and such personality traits systematically influence subjective well-being (Ravallion and Lokshin, 2001). In addition, respondents are also often inclined to answer subjective well-being questions such that they can avoid looking bad in front of the interviewer (Bertrand and Mullainathan, 2001). Particularly, questions pertaining to negative feelings or depression are prone to such social desirability bias. However, a growing literature on subjective well-being finds evidence that considerable inter-personal convergence exists in the effects of pleasure, pain, income, and unemployment on happiness and life satisfaction between individuals, within countries as well as across countries, and across various subjective well-being metrics thus strengthening the external validity of subjective well-being measures (Frey and Stutzer, 2002; Di Tella and MacCulloch, 2006; Kahneman and Krueger, 2006; Diener et al., 2009; Helliwell and Barrington-Leigh, 2010).¹ More recently, panel data and quasi-experimental models using propensity scores and instrumental variables are also being used to examine effects of specific independent variables on subjective well-being measures and increase internal validity of the results (Graham, Eggers, and Sukhtankar, 2004; Graham and Chaparro, 2011). The use of repeated cross sections with fixed effects and a pseudo-panel as supplementary

¹Diener et al. (2009) examine four subjective well-being surveys across 55 countries with a total survey sample of 100,000 respondents and find that different subjective well-being metrics and scales yield similar results across countries.

analysis in this chapter are possible approaches to overcome the validity issues as well as data limitations pertaining to subjective well-being.

Relative deprivation is operationalized using the economic ladder question (ELQ) and computed using the approach followed by Stark and Yitzhaki (1988). ELQ is used because the Latinobarometro does not gather information on actual income or consumption. The ELQ asks respondents to place themselves on a 10-step ladder where the poorest are on step one and the richest on step ten. It is therefore an assessment of the respondents' economic situation. Previous studies have found a positive and statistically significant correlation between ELQ and income as well as ELQ and consumption expenditure (Ravallion and Lokshin, 2001; Powdthavee, 2009). Further, ELQ has also been found to be a useful proxy for respondents' views of their relative position in the absence of income data (Graham and Felton, 2006).²

Formally, Stark and Yitzhaki (1988) present the model for migration and relative deprivation as follows. Let $F(y)$ be the cumulative distribution of income. Then, $1 - F(y)$ is the percentage of individuals whose income is higher than y . The feeling of deprivation therefore is an increasing function of the percentage of individuals who have income larger than y , that is, $1 - F(y)$. Let $h(1 - F(y))$ be the deprivation from not having the higher or reference group income, that is, $y + \Delta y$. The total deprivation for an individual with income y therefore would be,

$$RD(y) = \int_y^{y_{max}} h[1 - F(z)] dz \quad (1.2)$$

where y_{max} is the highest income in the reference group. Since the true reference group is almost always unobservable, the relative deprivation function above can be re-written as below for estimation purposes. If incomes are ranked from 1 to y_{max} , then for any individual i with income y_i , the degree of relative deprivation is the percentage of persons richer or poorer than the individual times their mean

²Graham and Felton (2006) also use the Latinobarometro in their paper.

excess income, that is,

$$RD_i = [1 - F(y)] E[y_{max} - y_i] | y_{max} > y_i \quad (1.3)$$

An issue pertaining to relative deprivation is that of reference groups. There is abundant evidence that when making relative assessments, people compare themselves with a reference group composed of individuals having some common characteristics such as place of residence, income category, age category, or education category. The Latinobarometro does not impose any reference group nor asks questions eliciting responses on what the true reference group might be. Therefore, the true reference group remains unobserved. Relevant reference group may differ depending on the context and purpose of the study. Previous studies have defined reference groups in many different ways. In investigating the effect of relative income, relative deprivation, or relative status on subjective well-being, reference groups have been defined based on broader geographic areas such as country, state, city, or census tract (Blanchflower and Oswald, 2004; Luttmer, 2005; Helliwell and Huang, 2009; Graham and Felton, 2006). Knight et al. (2009) in their paper on social comparisons in China identify village as the relevant reference group. Fafchamps and Shilpi (2008) go a step further and identify immediate neighbors within a village as the reference group. Reference groups have also been defined based on age cohorts (Deaton and Paxson, 2001) and other demographic characteristics such as region, age, gender, and education (Ferrer-i-Carbonell, 2005). Graham and Felton (2006) find that effects of relative status are more pronounced when the relevant reference group used is city of residence as compared to country of residence. Thus, “social distance” is strongly associated with relative well-being. In this analysis, I use each country as the reference group. The reference groups could not be refined down to the district-level owing to differences in the sampling frame across the waves.

1.3.3 Empirical specification and descriptive statistics

I estimate variations of the following probit model using the RCS:

$$\begin{aligned}
 Migrate_{ikt} = & \alpha_0 + \alpha_1 LSHigh_{ikt} + \alpha_2 Edu_{ikt} + \alpha_3 LS_{ikt} * Edu_{ikt} + \alpha_4 RDHigh_{ikjt} + \\
 & \alpha_5 RDLow_{ikjt} + X'_{ikt} \gamma + \alpha_6 Y_t + \alpha_7 D_k + \alpha_8 Y_t * D_k + \varepsilon_{ikt}
 \end{aligned}
 \tag{1.4}$$

where, the dependent variable is a dummy measuring the latent intention to migrate for each individual i from country k in year t . $LSHigh_{ikt}$ is the dummy for individuals reporting high life satisfaction, Edu_{ikt} is the individual education level, and $LSHigh_{ikt} * Edu_{ikt}$ is the interaction between high life satisfaction and education level. $LSHigh_{ikt}$ equals 1 for those reporting life satisfaction of 3 and above on the 4-point scale and 0 otherwise. Life satisfaction is transformed into a dummy variable to facilitate interpretation of the interaction between life satisfaction and education.³ The top two rungs (3 and 4) are used to define high life satisfaction based on mean life satisfaction, which is 2.957 for this sample (see Table 1.1). $RDHigh_{ikjt}$ is the share of individuals within each reference group j having higher ELQ than the individual respondent (in percentage) and $RDLow_{ikjt}$ is the share of individuals within each reference group j having lower ELQ than the individual respondent (in percentage). X'_{ikt} represents additional control variables such as distance from capital of United States, gender, age, marital status, employment status, satisfaction with education services, satisfaction with health services, confidence in institutions, future economic perspective of the country of residence, and future economic perspective of self or prospects for upward mobility (POUM). Confidence in institutions is disaggregated into confidence in public institutions and confidence in private enterprises.⁴ Y_t , D_k , and $Y_t * D_k$ are year,

³Models using interaction between life satisfaction and education both as continuous variables were also estimated. The sign and significance of the interaction term coefficient remains the same. Results are available upon request.

⁴Confidence in public institutions is constructed using Principal Component Analysis (PCA)

country, and country-year interaction fixed effects respectively. The RCS analysis is conducted using the sampling weights for each wave.⁵

Education levels and the interaction of education and high life satisfaction are included to capture the effect of higher education as well as that of attaining higher education and reporting high life satisfaction. Two separate relative deprivation variables are included to capture both being relatively “better off” and relatively “worse off”. For instance, if share with higher ELQ is 40 percent, it means that 40 percent of the individuals in the reference group are better-off as compared to the individual respondent. Similarly, if share with lower ELQ is 20 percent, it means that 20 percent of individuals in the reference group are worse-off as compared to the individual respondent. A positive coefficient on share with higher ELQ will be interpreted as increase in the percentage of individuals in the reference group who are better-off than the individual respondent thus making the individual respondent more worse-off. On the other hand, a positive coefficient on share with lower ELQ will be interpreted as increase in the percentage of individuals in the reference group who are worse-off than the individual respondent thus making the individual respondent more better-off.

The distance variable is included to control for migration intentions driven purely by proximity to a developed country. It is also included as a proxy to control for migration due to networks in nearby developed countries or historical linkages.⁶ Satisfaction with education services, satisfaction with health services, and confidence in institutions measure place utility or quality of life. Confidence in institutions is disaggregated into public and private institutions as the two are likely to have different effects on life satisfaction and subsequently intention to migrate. Dissatisfaction due to corruption and poor governance is captured by

and includes confidence in the Congress and confidence in political parties.

⁵As sampling design varied greatly by country and also by each wave, sampling design could not be incorporated in the analysis.

⁶Distance to the capital of United States is specifically included because the 2004 Latino-barometro asked respondents which country they thought of migrating to and the greatest proportion, 42 percent, of potential migrants indicated that they intended to migrate to the United States.

confidence in public institutions while the expectation that private enterprises promote growth is captured by confidence in private institutions. Future economic perspective of the country of residence and POUM are included to control for effect of the perceived opportunities provided by the country of residence and ambitions or optimism, factors that are especially relevant to the “frustrated achievers”.⁷ Table 1.1 presents the summary statistics for the variables included in the RCS models.

Table 1.1 – Summary statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
Gender (Male=1, Female=0)	0.491	0.500	0.000	1.000	80271
Age	39.311	16.301	16.000	99.000	80271
Intending to migrate abroad	0.251	0.433	0.000	1.000	80271
Years of education	8.968	4.525	1.000	17.000	80271
Married	0.572	0.495	0.000	1.000	80271
Unemployed	0.058	0.234	0.000	1.000	80271
Distance to US capital	3525.938	1444.702	1168.870	5916.900	80271
Life satisfaction	2.957	0.859	1.000	4.000	80271
ELQ	4.246	1.778	1.000	10.000	80271
Satisfaction with quality of healthcare	2.588	0.928	1.000	4.000	80271
Satisfaction with quality of education	2.639	0.908	1.000	4.000	80271
Confidence in public institutions	0.000	1.000	-1.334	2.840	80271
Confidence in private institutions	2.411	0.900	1.000	4.000	80271
Prospects for upward mobility (POUM)	3.410	0.949	1.000	5.000	80271
Future economic perspective of country	3.010	1.075	1.000	5.000	80271

Notes: Estimates based on repeated cross-sections consisting of 80,271 observations. All variables have been recoded such that lower values correspond to lower satisfaction, well-being, or confidence and higher values correspond to higher satisfaction, well-being or confidence.

From Table 1.1 we can observe that 25 percent of the individuals responded that they intend to migrate abroad. Mean individual life satisfaction is 2.957 on a scale of 4, which is on the higher side. Mean individual ELQ is 4.246 on a scale of 10.⁸ Mean individual education level is 9 years suggesting that there are fewer

⁷POUM captures the mobility that respondents expect in the near future. The question in Latinobarometro asks respondents’ expectations regarding their personal economic situation one year into the future.

⁸This resonates with previous literature which finds that individuals tend to cluster themselves around the middle rungs of the ELQ and very few report very low or very high ELQ (Ravallion and Lokshin, 2000)

individuals with college and higher level of education in the sample.

Table 1.2 depicts the life satisfaction levels by intention to migrate and being highly educated. It clearly shows that those who intend to migrate have lower mean life satisfaction as compared to those who do not. However, they report higher levels of POUM indicating that they are more ambitious and optimistic, and desire greater upward mobility. The findings are similar for those who are highly educated. Highly educated individuals who intend to migrate report lower mean levels of life satisfaction but higher mean POUM, which fits with the “frustrated achievers” theory.

Previous studies have found that life satisfaction is correlated with relative deprivation and place utility factors. Particularly, there is evidence that life satisfaction is highly correlated with relative income or deprivation, satisfaction with healthcare, and confidence in institutions (Clark and Oswald, 1996; Graham, 2008; Graham and Picon, 2009). To discern the effect of life satisfaction on intention to migrate, I first run simple correlations between high life satisfaction and variables included in the analysis. And second, I estimate bivariate regression models with latent intention to migrate as the dependent variable and each independent variable to determine whether variables that are highly correlated with life satisfaction are significantly associated with intention to migrate abroad. The bivariate regression analysis thus provides a sense of the independent variables that may be downward-biasing the effects of life satisfaction in the multivariate regression models. From Table 1.3 it is observed that reporting high life satisfaction is significantly correlated with all variables included in the analysis. It is negatively correlated with intention to migrate abroad. As expected, reporting high life satisfaction is negatively correlated with share with higher ELQ (or being worse-off) and positively correlated with share with lower ELQ (or being better-off). However, contrary to the expected correlation, it is positively correlated with POUM.

Table 1.2 – Levels of life satisfaction and POUM

	Life Satisfaction		POUM	
	Intent to Migrate = Yes	Intent to Migrate = No	Intent to Migrate = Yes	Intent to Migrate = No
All	2.91	2.97	3.42	3.40
Highly educated				
<i>Yes</i>	3.02	3.16	3.54	3.50
<i>No</i>	2.89	2.95	3.39	3.39

Note: Life satisfaction reported on a 4-point scale; POUM reported on 5-point scale; Highly educated refers to college or higher level of education

Table 1.3 – Correlates of High Life Satisfaction

High Life Satisfaction	Correlation Coefficient
Intend to migrate abroad	-0.033***
Gender	0.015***
Age	-0.079***
Married	-0.016***
Unemployed	-0.042***
Years of education	0.081***
Share with high ELQ	-0.171***
Share with low ELQ	0.157***
Satisfaction with quality of healthcare	0.209***
Satisfaction with quality of education	0.205***
Confidence in public institutions	0.134***
Confidence in private institutions	0.095***
Prospects for upward mobility (POUM)	0.176***
Future economic perspective of country	0.158***

Notes: Estimates based on repeated cross-sections consisting of 80,271 observations. All variables have been recoded such that lower values correspond to lower satisfaction, well-being, or confidence and higher values correspond to higher satisfaction, well-being or confidence.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 1.4 presents bivariate associations between intention to migrate abroad and all the independent variables. It is observed that being highly satisfied has a negative and significant association with intention to migrate. Share with higher ELQ (or being worse-off) has a negative and significant association while share with lower ELQ (or being better-off) has a positive and significant association with intention to migrate. Among the place utility factors, satisfaction with healthcare and confidence in public institutions have a negative and (marginally) significant association, while confidence in private institutions has a positive and significant association with intention to migrate. Somewhat surprisingly, POUM and future economic perspective of the home country are not significantly associated with intention to migrate abroad.

Table 1.4 – Bivariate Associations between Intention to Migrate Abroad and Independent Variables

Dependent Variable: Intention to Migrate Abroad	Coefficient	S.E.
High life satisfaction	-0.025***	0.005
Years of education	0.015***	0.001
Gender (Male=1, Female=0)	0.032***	0.005
Age	-0.004***	0.000
Married	-0.035***	0.004
Unemployed	0.063***	0.012
Distance to US capital	0.000***	0.000
Share with high ELQ	-0.015***	0.002
Share with low ELQ	0.015***	0.002
Satisfaction with quality of healthcare	-0.007*	0.004
Satisfaction with quality of education	-0.002	0.005
Confidence in public institutions	-0.013**	0.005
Confidence in private institutions	0.008**	0.003
Prospects for upward mobility (POUM)	0.008	0.006
Future economic perspective of country	-0.007	0.005

Notes: Estimates based on repeated cross-sections consisting of 80,271 observations using country, year, and country*year fixed effects. All variables have been recoded such that lower values correspond to lower satisfaction, well-being, or confidence and higher values correspond to higher satisfaction, well-being or confidence.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

1.4 Results

I begin with a simple hypothesis that higher education and lower life satisfaction strengthen the intention to migrate abroad and for that I estimate a model that controls for high life satisfaction dummy, education, background characteristics, distance, and place utility variables - satisfaction with education services, satisfaction with health services, and confidence in public and private institutions. Here, place utility factors reflect the quality of life that the home country offers its residents. From Table 1.5 it is observed that each additional year of education has a statistically significant positive effect on intention to migrate abroad. Of interest is the statistically significant negative effect of reporting high life satisfaction on intention to migrate abroad suggesting that increasing the levels of life satisfaction may weaken international migration intentions. Satisfaction with quality of healthcare and confidence in public institutions highly statistically significantly reduce the intention to migrate while confidence in private institutions increase

the intention to migrate.

Table 1.5 – Life Satisfaction and Intention to Migrate Abroad - Effect of Education and Place Utility

Dependent Variable: Intention to Migrate Abroad	Probit Marginal Effects
High life satisfaction	-0.044*** (0.005)
Years of education	0.011*** (0.001)
Satisfaction with quality of healthcare	-0.006*** (0.002)
Satisfaction with quality of education	-0.003 (0.003)
Confidence in public institutions	-0.015*** (0.005)
Confidence in private institutions	0.010*** (0.003)
Year fixed effects	Yes
Country fixed effects	Yes
Country*Year fixed effects	Yes
Observations	80271
<i>Pseudo</i> – R^2	0.072

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes:

Estimates are average marginal effects from probit regressions estimated using repeated cross-sections consisting of 80,271 individuals across four waves. Robust standard errors in parentheses. Dependent variable is a dummy indicating whether the individual intended to migrate or not. Additional controls include gender, age, marital status, employment status, and distance to US capital.

I then posit a more refined hypothesis that even among those with higher education, the ones reporting high life satisfaction are less likely to migrate abroad. This essentially means that it is not education and life satisfaction separately, but the interaction of education and life satisfaction that drives international migration decisions. The model in Table 1.6 suggests that more educated individuals reporting high life satisfaction are less inclined to migrate abroad as compared to more educated individuals reporting low life satisfaction, and the effect is statistically

significant.⁹

Table 1.6 – Life Satisfaction and Intention to Migrate Abroad - Interaction Effect of Education and Life Satisfaction

Dependent Variable: Intention to Migrate Abroad	Probit Marginal Effects
High life satisfaction	-0.017 (0.013)
Years of education	0.013*** (0.002)
High Life Satisfaction*Education	-0.003** (0.001)
Year fixed effects	Yes
Country fixed effects	Yes
Country*Year fixed effects	Yes
Observations	80271
<i>Pseudo</i> – R^2	0.072

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes:

Estimates are average marginal effects from probit regressions estimated using repeated cross-sections consisting of 80,271 individuals across four waves. Robust standard errors in parentheses. Dependent variable is a dummy indicating whether the individual intended to migrate or not. Additional controls include gender, age, marital status, employment status, distance to US capital, satisfaction with quality of healthcare, satisfaction with quality of education, confidence in public institutions, and confidence in private institutions.

The key hypothesis to be tested is that high life satisfaction significantly affects international migration decisions even after controlling for relative deprivation, especially of those who have higher education. This would explain whether assessments of objective or subjective well-being or both are of greater significance in driving migration decisions.¹⁰ The model in Table 1.7 controls for relative deprivation, both the share of individuals with higher ELQ and lower ELQ. It is observed having more individuals with higher ELQ (or being worse-off) has

⁹In simple terms, the interpretation of the interaction term is, $\widehat{Migrate}_{HighLifeSatisfaction} = Coefficient_{HighLifeSatisfaction} + (Coefficient_{YearsofEducation} + Coefficient_{Educ*HighLifeSatisfaction}) * YearsofEducation$

¹⁰It should be re-emphasized that in the absence of actual income data, ELQ provides the closest assessment of objective or economic well-being.

a statistically significant negative effect on intention to migrate abroad. This is in line with previous evidence which suggests that those with fewer resources are less likely to migrate abroad. However, having more individuals with lower ELQ (or being better-off) has no significant effect on intention to migrate. Of particular importance is the effect of the interaction of education and high life satisfaction, which continues to be negative and statistically significant. Thus, life satisfaction or subjective well-being concerns more generally do not cease to be of significant concern for those with higher education even after controlling for relative deprivation.

Table 1.7 – Life Satisfaction and Intention to Migrate Abroad - Effect of Relative Deprivation

Dependent Variable: Intention to Migrate Abroad	Probit Marginal Effects
High life satisfaction	-0.019 (0.013)
Years of education	0.012*** (0.002)
High Life Satisfaction*Education	-0.003** (0.001)
Share with higher ELQ	-0.006** (0.003)
Share with lower ELQ	0.002 (0.003)
Year fixed effects	Yes
Country fixed effects	Yes
Country*Year fixed effects	Yes
Observations	80271
<i>Pseudo – R²</i>	0.073

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes:

Estimates are average marginal effects from probit regressions estimated using repeated cross-sections consisting of 80,271 individuals across four waves. Robust standard errors in parentheses. Dependent variable is a dummy indicating whether the individual intended to migrate or not. Additional controls include gender, age, marital status, employment status, distance to US capital, satisfaction with quality of healthcare, satisfaction with quality of education, confidence in public institutions, and confidence in private institutions.

It is likely that both life satisfaction and relative economic well-being have a significant effect on the migration decisions of those with higher education because they have higher aspirations or are more optimistic and are dissatisfied with the opportunities that their home country offers. To test this, the model in Table 1.8 controls for POUM and future economic perspective of the country. Instead of including years of education, this model includes the higher education dummy, which equals 1 for those with college and above level of education and 0 otherwise. The interaction of highly educated and high life satisfaction dummies is included to explicitly determine whether highly educated individuals reporting high life satisfaction are less likely to consider migrating abroad. It is observed that similar to the interaction effect of years of education and high life satisfaction, the interaction of being highly educated and having higher life satisfaction has a statistically significant negative effect on intention to migrate. It is also observed that having a more positive future economic perspective of the home country, that is, perceiving the country as progressive, has a statistically significant negative effect on intention to migrate abroad. However, having a more positive POUM, that is, being more ambitious or optimistic, has no effect on intention to migrate abroad. Thus, the effect of life satisfaction on migration intentions does not seem to be confounded by POUM and I find no evidence to support the “frustrated achievers” hypothesis.

1.4.1 Pseudo-panel results

A limitation of RCS is that it does not truly capture unobserved characteristics such as changes in values, attitudes, and abilities over time that may drive migration decisions because the same individuals are not observed. It is possible that those who are highly educated are systematically different in terms of values, attitudes, and abilities from those who are not, and this might directly impinge on their migration decisions. To properly account for these differences in unobserved

Table 1.8 – Life Satisfaction and Intention to Migrate Abroad - Effect of Ambitions and Perceived Opportunities

Dependent Variable: Intention to Migrate Abroad	Probit Marginal Effects
High life satisfaction	-0.038*** (0.007)
Highly Educated	0.127*** (0.024)
Highly Educated*High Life Satisfaction	-0.051*** (0.016)
Share with higher ELQ	-0.005* (0.003)
Share with lower ELQ	0.005 (0.004)
Future economic perspective of country	-0.010** (0.004)
POUM	0.000 (0.006)
Year fixed effects	Yes
Country fixed effects	Yes
Country*Year fixed effects	Yes
Observations	80271
<i>Pseudo – R</i> ²	0.070

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes:

Estimates are average marginal effects from probit regressions estimated using repeated cross-sections consisting of 80,271 individuals across four waves. Robust standard errors in parentheses. Dependent variable is a dummy indicating whether the individual intended to migrate or not. Additional controls include gender, age, marital status, employment status, distance to US capital, satisfaction with quality of healthcare, satisfaction with quality of education, confidence in public institutions, and confidence in private institutions.

characteristics, we would need panel data where we could control for individual fixed effects and determine the effects of life satisfaction, education, and relative deprivation more efficiently. Panel data are not available in the Latinobarometro as the survey does not interview the same respondents every year. In the absence of panel data, I adopt the approach proposed by Deaton (1985) and create a pseudo-panel from repeated cross-sectional data by taking weighted-average values of variables of interest over time-invariant characteristics such as year of birth, time or period of survey, and gender and forming “cohorts”. This pseudo-panel, which is essentially a *time series of cohort averages*, can be treated as an approximation of a true panel.

The use of pseudo-panels has its own limitations. First, averaging over cohorts eliminates individual heterogeneity such as differing values or abilities and does not fully address the problem of unobserved characteristics. And second, loss in variation due to aggregation might result in insignificant or unexpected coefficients. This is particularly problematic when computing relative deprivation. Hypothetically, if half the individuals in a cohort are in the bottom half of the ELQ distribution and the other half are in the top half of the ELQ distribution, then pseudo-panel averages out this variation rendering the relative deprivation variable meaningless. Nevertheless, estimating pseudo-panel effects is a worthy exercise as a supplement to the main RCS estimates and to confirm whether the main effects of high life satisfaction on intention to migrate abroad continue to hold.

I use country of birth, 10-year age-categories, and gender as the time-invariant characteristics to create cohorts from each wave and then merge the waves to create a four-year pseudo-panel. The cohort averages are computed using sampling weights corresponding to each wave. To illustrate the use of pseudo-panel mathematically, if the true panel model were:

$$y_{it} = \alpha + \beta x_{it} + \mu_i + \nu_{it} \tag{1.5}$$

where, μ_i represents unobserved individual fixed effects that do not change over time and ν_{it} represents unobserved effects that vary over both individuals and time. However, in a pseudo-panel this model cannot be identified because each individual is observed only once. Then, we can define C cohorts based on a set of time-invariant characteristics Z , which are similar to the individual fixed effects. The variables, both dependent and independent, are the cohort means (where the original variable is continuous) or proportions (where the original variable is a dummy). The pseudo-panel model can then be written as:

$$\bar{y}_{ct} = \bar{x}_{ct}\beta + \bar{\mu}_{ct} + \bar{\nu}_{ct} \quad (1.6)$$

where, \bar{y}_{ct} is the average of y_{it} over all individuals belonging to cohort c at time t . Unlike the true panel model, $\bar{\mu}_{ct}$ retains the t subscript to indicate that each period's cohort mean is calculated using a different set of individuals (Russell and Fraas, 2005).

Because the variables in a pseudo-panel represent cohort means or proportions, the dependent dummy variable “intention to migrate abroad” is transformed into the proportion of individuals in each cohort who indicated that they intend to migrate abroad; the dummy variable high life satisfaction represents proportion reporting high life satisfaction in each cohort; and relative deprivation is computed using mean cohort ELQ in each reference group, that is, the country. Similarly, other independent variables have been transformed as either cohort means or proportions. All means and proportions are computed taking into account sampling weights for each wave of the dataset.

The empirical specification is a panel regression model with AR(1) errors.¹¹ The lagged errors are included to correct for first order serial autocorrelation that was identified in the pseudo-panel and minimize the upward bias caused by the error term. I estimate variations of the following empirical model:

¹¹Fixed effects are not explicitly specified in the models because cohort fixed effects are captured by the time invariant characteristics - country, gender, and age categories - used to define the cohorts.

$$\begin{aligned} \overline{Migrate}_{ct} = & \beta_0 + \beta_1 \overline{LSHigh}_{ct} + \beta_2 \overline{Edu}_{ct} + \beta_3 \overline{LS}_{ct} * \overline{Edu}_{ct} + \beta_4 \overline{RDHigh}_{cjt} \\ & + \beta_5 \overline{RDLow}_{cjt} + \bar{X}'_{ct} \gamma + \varepsilon_{ct} \end{aligned} \quad (1.7)$$

where, c represents each cohort at time t . $\overline{Migrate}_{ct}$ is the dependent variable measuring the proportion of individuals in each cohort who intend to migrate abroad; \overline{LSHigh}_{ct} is the proportion of individuals in each cohort with high life satisfaction (above 3 on the 4-point scale); \overline{Edu}_{ct} is the mean education level; $\overline{LSHigh} * \overline{Edu}_{ct}$ is the interaction between high life satisfaction and mean education level; \overline{RDHigh}_{cjt} is the share of cohorts having higher ELQ within each reference group j than the individual cohort; \overline{RDLow}_{cjt} is the share of cohorts having lower ELQ within each reference group j than the individual cohort; and \bar{X}'_{ct} represents additional control variables similar to the repeated cross-section analysis. Table 1.9 presents the summary statistics. It is observed that the standard deviations for continuous variables are lower than they were for the RCS highlighting the loss in variation. We see that 23 percent of cohorts responded that they intend to migrate abroad. Mean cohort life satisfaction is 2.943, mean cohort ELQ is 4.131, and mean cohort education level is 8 years.

Table 1.10 presents the full model that controls for place utility factors, education-life satisfaction interaction term, relative deprivation, and POUM. It is observed that while the interaction effect of being highly educated and reporting high life satisfaction remains negative and statistically significant, the coefficients on other independent variables are not consistent with the RCS estimates. As previously mentioned, this might be due to the loss of individual heterogeneity and overall variation.

Table 1.9 – Summary statistics - Pseudo panel

Variable	Mean	Std. Dev.	Min.	Max.	N
Gender	0.500	0.500	0.000	1.000	720
Age category	3.000	1.415	1.000	5.000	720
Proportion intending to migrate abroad	0.234	0.122	0.014	0.793	720
Years of education	8.180	2.431	2.041	12.761	720
Married	0.584	0.192	0.048	0.958	720
Unemployed	0.057	0.041	0.000	0.280	720
Distance to US capital	3455.662	1437.922	1168.870	5916.900	720
Life satisfaction	2.943	0.285	2.052	3.650	720
ELQ	4.131	0.642	1.886	5.433	720
Satisfaction with quality of healthcare	2.577	0.281	1.671	3.208	720
Satisfaction with quality of education	2.622	0.270	1.844	3.355	720
Confidence in public institutions	0.000	1.000	-2.848	2.891	720
Confidence in private institutions	2.412	0.318	1.596	3.356	720
Prospects for upward mobility (POUM)	3.359	0.326	2.285	4.123	720
Future economic perspective of country	2.977	0.390	1.864	4.009	720

Notes: Estimates based on pseudo-panel consisting of 720 cohorts constructed using country, 10-year age categories, and gender. All variables have been recoded such that lower values correspond to lower satisfaction, well-being, or confidence and higher values correspond to higher satisfaction, well-being or confidence

1.5 Drivers of intention to migrate abroad

The results find evidence to support that life satisfaction is a significant driver of intention to migrate abroad. First, though reporting high life satisfaction weakens the intention to migrate, it is the interaction effect of high life satisfaction and education that has a consistent statistically significant negative effect on intention to migrate. This effect is robust to the inclusion of average years of education or including the dummy for highly educated individuals. Among the place utility factors that reflect quality of life, confidence in public institutions or how much “trust in the government” individuals place, emerges as a factor that significantly reduces intention to migrate abroad. Indeed, Graham and Picon (2009) argue that policies promoted by political institutions directly impinge on the life satisfaction of individuals with higher prospects of upward mobility. They find that in Latin America promotion of democracy is an institutional intervention that is of particular importance to the educated and upwardly mobile individuals. Thus, higher confidence in public institutions may weaken migration intentions because of

Table 1.10 – Life Satisfaction and Intention to Migrate Abroad - Pseudo-panel Estimates for the Highly Educated

Dependent Variable: Proportion Intending to Migrate Abroad	Panel AR(1)
High life satisfaction	0.024 (0.062)
Highly Educated	1.335*** (0.341)
Highly Educated*High Life Satisfaction	-1.704*** (0.455)
Satisfaction with quality of healthcare	0.032 (0.026)
Satisfaction with quality of education	0.010 (0.027)
Confidence in public institutions	0.004 (0.006)
Confidence in private institutions	-0.008 (0.012)
Share with higher ELQ	0.040 (0.035)
Share with lower ELQ	0.094*** (0.033)
Future economic perspective of country	-0.066*** (0.013)
POUM	0.084*** (0.006)
Observations	720
R^2	0.204

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes:

Panel estimates based on a pseudo-panel of 720 cohorts across four waves. Robust standard errors in parentheses. Dependent variable is proportion of observations in each cohort intending to migrate abroad. Additional controls include country, gender, age, marital status, employment status and distance to US capital.

its positive correlation with life satisfaction. Another place utility factor that has a significant negative effect on intention to migrate abroad is satisfaction with the quality of healthcare. Again, this may be because health status and satisfaction with healthcare are highly correlated with happiness (or life satisfaction) across countries and regions as has been found by Graham (2008).

Similar to relative income or deprivation, an argument made by Veenhoven (1991) and Graham (2011) is that life satisfaction or happiness is also relative. For instance, living in a neighborhood where the mean level of life satisfaction is high has a positive effect on the life satisfaction of the individual. To empirically test whether relative life satisfaction affects intention to migrate abroad in the sample under study, I run a model with “share who are more satisfied”. I compute share of individuals in each reference group who have a higher than mean level of life satisfaction using the original 4-point life satisfaction variable. The results in Table 1.11 show that relative life satisfaction has a statistically significant negative effect on intention to migrate. This suggests that if the mean life satisfaction levels are high then there is a “spillover positive effect” on the entire reference group and that is likely to weaken the intention to migrate abroad. This further buttresses the effect that increased life satisfaction has on reducing migration intentions.

Second, contrary to the expectation that inclusion of relative deprivation might significantly weaken the effect of life satisfaction for the highly educated, the results reveal that even after controlling for relative deprivation the negative effect of the high life satisfaction and education interaction term continues to be statistically significant. Being worse-off has a significant negative effect on intention to migrate thus corroborating previous empirical evidence. However, I find no significant effect of being better-off on intention to migrate. A further robustness check is done to confirm the results of relative deprivation and the life satisfaction-education interaction term by computing relative deprivation using the income sufficiency question, which asks the respondent *“Does the salary that you receive and your total*

Table 1.11 – Life Satisfaction and Intention to Migrate Abroad - Robustness Check with Relative Life Satisfaction

Dependent Variable: Intention to Migrate Abroad	Probit Marginal Effects
Share who are more satisfied	-0.047*** (0.011)
Highly educated	0.078*** (0.011)
Share with higher ELQ	-0.005* (0.003)
Share with lower ELQ	0.004 (0.004)
Year fixed effects	Yes
Country fixed effects	Yes
Country*Year fixed effects	Yes
Observations	80271
<i>Pseudo</i> – R^2	0.069

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes:

Estimates are average marginal effects from probit regressions estimated using repeated cross-sections consisting of 80,271 individuals across four waves. Robust standard errors in parentheses. Dependent variable is a dummy indicating whether the individual intended to migrate or not. Additional controls include gender, age, marital status, employment status, distance to US capital, satisfaction with quality of healthcare, satisfaction with quality of education, confidence in public institutions, confidence in private institutions, future economic perspective of country, and POUM.

family income allow you to cover your needs in a satisfactory manner?” A score of 1 corresponds to very insufficient and a score of 4 corresponds to very sufficient income. From Table 1.12 it is observed that the effect on the life satisfaction-education interaction term remains negative and statistically significant and is therefore robust to the revised relative deprivation. However, neither relative deprivation variable is significant.

Table 1.12 – Life Satisfaction and Intention to Migrate Abroad - Robustness Check with Relative Subjective Income

Dependent Variable: Intention to Migrate Abroad	Probit Marginal Effects
High life satisfaction	-0.034*** (0.006)
Highly Educated	0.126*** (0.019)
Highly Educated*High Life Satisfaction	-0.046*** (0.013)
Share with higher subjective income	0.000 (0.008)
Share with lower subjective income	0.005 (0.009)
Year fixed effects	Yes
Country fixed effects	Yes
Country*Year fixed effects	Yes
Observations	80271
<i>Pseudo – R²</i>	0.067

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes:

Estimates are average marginal effects from probit regressions estimated using repeated cross-sections consisting of 80,271 individuals across four waves. Robust standard errors in parentheses. Dependent variable is a dummy indicating whether the individual intended to migrate or not. Additional controls include gender, age, marital status, employment status, distance to US capital, satisfaction with quality of healthcare, satisfaction with quality of education, confidence in public institutions, confidence in private institutions, future economic perspective of country, and POUM.

And third, I find that the international migration intentions of the highly educated are driven by the economic outlook of the home country. Having a positive future economic outlook of the home country weakens the intention to

migrate abroad, controlling for life satisfaction and relative deprivation. Contrary to the expectation, I find no significant relationship between having high POUM and intention to migrate abroad, and therefore cannot support the hypothesis that “frustrated achievers” are more likely to consider migrating abroad. To test whether other factors capturing ambitions and frustrations might be significantly associated with migration intentions, I run the full model with two additional variables which ask whether lack of opportunities for the youth is a problem facing their home country and whether low wages is a problem facing their home country. Both, the perception that the home country will likely not provide the opportunities to achieve the expected economic mobility and persistent low wages, should have a positive effect on intention to migrate abroad. Results presented in Table 1.13 find that low paying jobs has a statistically significant positive effect on intention to migrate while the perception about lack of opportunities for the youth has no significant effect, controlling for life satisfaction and relative deprivation. Thus, economic perception of the home country seems to underlie the frustrations of the highly educated rather than personal ambitions or optimism.

1.6 Conclusion

This chapter is a first account providing empirical evidence on the relationship between subjective well-being and international migration intentions. Building upon existing theories of subjective well-being, relative deprivation, and migration I find evidence to support that life satisfaction is a significant driver of international migration intentions, especially for the highly educated. Specifically, educated individuals reporting high life satisfaction are significantly less likely to migrate as compared to educated individuals reporting low life satisfaction controlling for relative deprivation and place utility factors. This key finding is robust to several different specifications including supplementary analysis conducted using a

Table 1.13 – Life Satisfaction and Intention to Migrate Abroad - Further Tests for Frustrated Achievers

Dependent Variable: Intention to Migrate Abroad	Probit Marginal Effects
High life satisfaction	-0.016 (0.015)
Highly Educated	0.012*** (0.002)
Highly Educated*High Life Satisfaction	-0.003** (0.001)
Share with higher ELQ	-0.003 (0.003)
Share with lower ELQ	0.004 (0.004)
Low paying jobs is a problem	0.026** (0.013)
Opportunities for youth is a problem	0.038 (0.043)
Year fixed effects	Yes
Country fixed effects	Yes
Country*Year fixed effects	Yes
Observations	80271
<i>Pseudo</i> – R^2	0.074

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes:

Estimates are average marginal effects from probit regressions estimated using repeated cross-sections consisting of 80,271 individuals across four waves. Robust standard errors in parentheses. Dependent variable is a dummy indicating whether the individual intended to migrate or not. Additional controls include gender, age, marital status, employment status, distance to US capital, satisfaction with quality of healthcare, satisfaction with quality of education, confidence in public institutions, confidence in private institutions, future economic perspective of country, and POUM.

pseudo-panel.

It would be audacious to recommend a single policy tool that will increase life satisfaction of potential migrants and prevent subsequent migration. This is because several factors mediate the effect of life satisfaction as was observed in the correlation and bivariate analysis. Further research using panel data would allow to test the effect of life satisfaction and unobserved heterogeneities more efficiently. The key takeaway here is that the significant negative effect of life satisfaction on migration intentions of the highly educated sheds light on an alternative explanation to potential migration beyond that of the economic motive.

Chapter 2

Does being a recipient of poverty alleviation programs affect perceived economic well-being?

2.1 Introduction

Poverty alleviation remains one of the biggest development challenges and is at the crux of the Millennium Development Goals (MDGs). Programs aimed at alleviating poverty have traditionally been classified as *livelihood protecting* or *livelihood promoting* (Devereux, 2002). While the discourse on poverty is shifting away from purely income-based measures towards multidimensional poverty that combines both objective and subjective factors, there is very little empirical research undertaken to assess the effects of poverty alleviation programs on the subjective dimensions of poverty. This chapter engages in this empirical inquiry by contrasting the effects of two of the most widely implemented poverty alleviation strategies falling in the respective categories, that is, social transfers (livelihood protection) and microfinance (livelihood promotion). Social transfers comprises of direct transfer to beneficiaries either in cash or in kind to eligible households with the primary aim of overcoming periods of economic shocks, providing essential commodities such as food, or supplementing income to reduce vulnerability and prevent families from falling into persistent poverty. Microfinance on the other hand comprises of small loans aimed at promoting livelihoods and creating self-reliance among the poor and low-income individuals with the assumption that the credit is spent towards productive purposes that will generate incremental and sustainable

income.

Two questions arise with regards to the objectives of this chapter. First, what is the objective behind contrasting the two poverty alleviation programs, which are very different in their design? And second, why is the effect of these programs on perceived or subjective well-being relevant? The answer to the first question is the policy implication that such an assessment might have on the choice of poverty alleviation programs that are implemented. From a policy perspective it is not only important to gauge the take-up rates of poverty alleviation programs, but also what programs can achieve the greatest and most sustainable impact without creating a cycle of dependency. Therefore, the underlying objective is to investigate whether it is livelihood protection or livelihood promotion that has a greater positive impact on subjective and objective economic well-being. Social transfers programs are being used to represent the policy options aimed at livelihood protection and microfinance is being used to represent policy options aimed at livelihood promotion and self-reliance.

To answer the second question, there is evidence that being a long-term recipient of social transfers is associated with a phenomenon called “welfare stigma”, which generates feelings of lack of self-respect and negative evaluations among welfare recipients, and that this has a direct bearing on program take-up rates (Horan and Austin, 1974; Moffitt, 1983; Wong and Lou, 2010). Limited evidence on the negative impact of microfinance on household income suggests that microfinance has the potential to push poor households into a cycle of indebtedness (Hashemi, 2007; Karnani, 2007; Khan, 2009). Therefore, it can be argued that microfinance can also have a likely negative effect on perceived well-being. Second, there is evidence from qualitative studies on poverty that the poor are conscious of both their objective and subjective dimensions of well-being and make assessments of programs, institutions, and governance based on the impact they have on the two dimensions (Narayan et al., 2000). Therefore, poor and low-income households do not always assess their well-being based solely on income or consumption. And

third, I argue that there is also a normative rationale for subjective assessment of these programs. I posit that subjective well-being gives us better insight into the kind of lives and the things that are “valued” by the poor and whether these programs enable them to attain or gain those. Assessments examining subjective well-being can therefore better bring out the discrepancy between expectation and actual achievement (Masud Ahmed et al., 2001). Households can value in-kind social transfers programs for the safety-net that they provide in preventing families from being under-nourished, while they can value receiving microfinance because of the possible “agency” that they generate through skills acquisition, investment in human capital, and ownership of a microenterprise.¹

To achieve these research objectives, I examine the effects of receiving in-kind social transfers and microfinance programs on objective and subjective economic well-being using the 2004 Peru Poverty Assessment Tools Survey conducted by the IRIS Center at the University of Maryland. The specific research question I ask is - *Does being a recipient of and length of receiving “livelihood promoting” microfinance and “livelihood protecting” social transfers affect subjective and objective economic well-being differently?* The chapter aims to contribute to literature on assessment of poverty alleviation programs as well as on subjective economic well-being more broadly. Specifically, I test not only the effects of being a mere recipient but also the effects of length of receiving poverty alleviation program benefits on objective and subjective economic well-being. Further, I test whether the “being poor feeling poorer” phenomenon exists among recipients of livelihood protecting programs and whether particularly positive effects on subjective economic well-being result from being recipients of livelihood promoting and self-reliance generating programs. The key findings of this chapter are that households value livelihood promotion and self-reliance. I also find that being a recipient of in-kind social transfers can cause “welfare stigma” but the effect is not significant for households that are very poor. In addition, I find that livelihood promoting programs can lead to

¹The terminologies “value” and “agency” have been adapted from Sen’s (1999) capability approach.

positive investment in human capital development, which is in line with findings from previous evaluations of microfinance programs.

The chapter is organized as follows. Section 2.2 presents a brief review of literature on perceived economic well-being and the effects of social transfers and microfinance on perceived economic well-being. Section 2.3 discusses the empirical strategy, data, and summary statistics. Section 2.4 presents the results. Section 2.5 discusses the effects of being a recipient of poverty alleviation programs on subjective and objective economic well-being. Section 2.6 concludes.

2.2 Review of literature

2.2.1 Subjective or self-rated economic well-being

The concept of subjective or self-rated economic well-being emerged from the interpretations of the Easterlin Paradox, which argues that aggregate subjective well-being responds weakly to increase in per capita income.² Subjective economic well-being can be thought of as examining only the “economic” or “income” domain from the set of domains that an individual considers valuable. Instead of viewing subjective economic well-being as a concept competing with income or objective poverty, Kingdon and Knight (2006), think of it as an encompassing concept that permits quantification of other relevant and important well-being approaches such as “capabilities”. They further argue that the concept of poverty itself requires value judgments as to “what constitutes a good life or a bad one” and individual’s own perception of their economic well-being captures that better than income or consumption. In their study using data on South Africa, Kingdon and Knight (2006) find a positive correlation of 0.358 between income and subjective economic well-being.

Three popular approaches can be identified in the measurement of subjective

²Recent evidence finds that there is no satiation point beyond which rising incomes have no further increases in subjective well-being (Stevenson and Wolfers, 2008). However, this is beyond the purview of this analysis.

or self-rated economic well-being. First is the minimum income question (MIQ), whose objective is to evaluate overall perceived income adequacy of the household (Kapteyn et al. 1988 as quoted in Pradhan and Ravallion, 2000). The question that Kapteyn et al. posed is “What income level do you personally consider to be absolutely minimal? That is to say that with less you could not make ends meet.” Pradhan and Ravallion (2000) raise objections to the validity of MIQ and argue that the MIQ assumes that a household responding to the question is fully aware of its income level. For instance, some households may fail to account for non-cash income, bringing down the income level significantly. This they argue is of great concern in developing countries and especially in the rural areas. They therefore propose another measure of subjective economic well-being, which is the second approach reviewed here.

Pradhan and Ravallion (2000) developed a set of qualitative questions on consumption adequacy. The questions were as follows - “I would like to ask your opinion of your family’s standard of living: (i) Concerning your family’s food consumption over the past one month, which of the following is true? (ii) Concerning your family’s housing, which of the following is true? (iii) Concerning your family’s clothing, which of the following is true? (iv) Concerning the health care your family gets, which of the following is true? (v) Concerning your children’s schooling, which of the following is true?” For each of the questions, respondents were given the following choices and told that “adequate” means no more nor less than what the respondent considers to be the minimum consumption needs of the family: (1) It was less than adequate for your family’s needs (2) It was just adequate for your family’s needs (3) It was more than adequate for your family’s needs (4) Not applicable. From the fielding of the consumption adequacy questions in Jamaica and Nepal they find that their subjective economic well-being line is more closely correlated with the income poverty line and also robust whether they use a single food adequacy question or use the full set of questions.

The third and most widely used approach is the economic ladder question

(ELQ) where respondents are asked to imagine a 10-step ladder with the bottom step representing the ‘most poor’ and the top step representing the ‘most rich’. Respondents are asked which step they feel they stand on in the present (Ravallion and Lokshin, 2001). Some surveys also ask respondents where on the ladder they would place themselves a few years ago or few years into the future. Using data from Russia, Ravallion and Lokshin (2001) classify the income measure such that the income categories have the same number of individuals in them as in the categories of the ELQ, and assess the accordance between the measures. They find the correlation between subjective and objective economic well-being to be very weak. However, they argue that the results may be insubstantial due to potential sources of bias and measurement errors.

Issues of reliability and validity remain a concern in subjective well-being studies. Reliability and validity issues in responses to subjective economic well-being questions may arise due to sensitivity to moods and contextual influences (generally the unobserved confounding factors), personality, social desirability, question wording, question ordering bias, and most importantly adaptation (Sen, 1999; Schwarz and Strack, 1999; Bertrand and Mullainathan, 2001; Ravallion and Lokshin, 2001).³ Though these validity issues complicate econometric analysis they can be overcome by using multivariate regression models and panel data (Graham, 2005). More recently, quasi-experimental models using propensity scores and instrumental variables are also being used to examine effects of specific independent variables on subjective well-being measures and increase internal validity of the results (Graham and Chaparro, 2011). This chapter uses both non-experimental and quasi-experimental approach to enable a comparison and robustness check of the results.

³Sen (1999) argues that people adapt to poverty and inequality and therefore subjective assessments might be biased.

2.2.2 Poverty alleviation programs and subjective economic

well-being

A phenomenon closely associated with receiving and length of being a recipient of social transfers or welfare programs is that of “welfare stigma”. The term first emerged from qualitative sociological literature seeking explanation for the feelings of lack of self-respect and negative evaluations among social transfers recipients. In a qualitative study of 50 female AFDC recipients, Horan and Austin (1974) focus on two aspects of stigma - whether they were bothered about being a recipient of AFDC and whether they felt ashamed of being a recipient of AFDC. They find that the longer the individual has been a recipient of AFDC or the more educated the recipient is, the more stigmatized she feels. In a recent study, Wong and Lou (2010) conduct in-depth interviews with 19 recipients of the Comprehensive Social Security Assistance (CSSA) in Hong Kong. They examine the recipients’ aspiration for self-reliance, fulfillment of needs, and entry or exit decision-making. Of methodological importance is the use of a life satisfaction scale to capture aspiration for self-reliance and fulfillment of needs. Wong and Lou find high levels of negative emotions among the CSSA recipients though most of them express gratefulness towards the government for providing a safety net in times of distress. They argue that the life satisfaction scale was introduced specifically to capture the two different emotional states - negative feelings for receiving or being a long-term recipient of CSSA and positive feelings for the compensation provided. Further, low life satisfaction among recipients also reveals their aspirations to exit from the CSSA.

Moffitt (1983) models welfare stigma as a utility function where stigma is conceptualized as the disutility arising from being on welfare. In his model, welfare stigma is either a *flat* component that arises from merely receiving social transfers or it is a *variable* component that varies with the size of the benefit. Using the 1976 wave of the MPSID he finds that welfare stigma or disutility arises mainly from the act of receiving welfare per se, that is, the flat component, and does not vary

significantly with the amount of benefit once the individual is on welfare. However, the probability of take-up, that is the decision to enter the social transfers program varies significantly with the size of the potential benefit.

Though not extensive, there is some research on the psychological impact of being a social transfers recipient. A study by Byrne et al. (1998) examines the 12-month prevalence of depressive disorder and its relation to previous use of social assistance among sole-support parents receiving social assistance in Ontario, Canada. Length of being a recipient was measured as lifetime use of social assistance in months multiplied by the dollar value of the benefit per month. In addition, they tally the number of previous applications for social assistance. After controlling for poverty, marital status, and gender, they find that the 12-month prevalence of depressive disorder among sole-support parents receiving social assistance, 96.7 percent of whom were women, is 45.4 percent as compared to 5 percent among mothers in two-parent families. They conclude that poverty and being a long-term recipient of social transfers is associated with depression, though not uniformly. Further, they conclude that social policy should combine strategies such as skills training for those receiving welfare with proactive mental health care to enable them to cope with and move out of their poor economic situation. Specifically from a subjective economic well-being perspective, Carletto and Zezza (2006) observe a “being poor, feeling poorer” phenomenon among households who are receive social transfers. Though it is not the focus of their study, Carletto and Zezza, using the 2002 Albania Living Standards Measurement Survey (LSMS), find evidence to support that “being vulnerable”, such as relying on pensions for the majority of one’s income, has a negative impact on perceived economic well-being.

Recently, though the impact of microfinance on poverty reduction has become a highly debated issue, there is little empirical evidence on the impact of microfinance on subjective economic well-being. The most serious negative consequence of microfinance is its potential to push households into a cycle of indebtedness, which may likely affect their subjective economic well-being. Indebtedness also implies

increased dependency on loans, where households repeatedly borrow to pay-off previous debts from multiple microfinance institutions or moneylenders. The reasons found in the literature for pushing the poor into microfinance indebtedness are lack of entrepreneurial skills and training leading to failure of the microenterprise; lack of information and incentives to save; and use of microfinance for consumption purposes such as weddings, funerals, and medical emergencies (Hashemi, 2007; Karnani, 2007; Khan, 2009).

A study conducted using data on microfinance programs in Bangladesh finds that receiving microfinance loans improves both objective and subjective economic well-being in the short-run. However, this impact levels off after about 6 years of receiving loans and after 8 years of receiving loans the poverty rates among the recipients based on objective and subjective measures increased as compared to previous estimates (Chowdhury et al., 2005). Another study conducted in Bangladesh among women recipients of a microfinance program run by BRAC finds that nearly 2 years of receiving microfinance loans failed to show any favorable effect on the emotional well-being of poor women (Masud Ahmed et al., 2001). Thus, the long-run effect of microfinance on subjective economic well-being is uncertain.

2.2.3 Poverty alleviation programs: The Peru context

As the analysis draws upon household data from Peru, it is important to get an understanding of the impact of poverty alleviation programs in Peru. In-kind social transfer programs have been implemented in Peru since the 1980s with “Vaso de Leche” (or Glass of Milk), a food aid program, being the largest social transfer program in the country (Copestake, 2008; Stifel and Alderman, 2006). There is some literature on the effect of Vaso de Leche and similar food aid programs on objective outcomes such as food consumption and nutritional status, and subjective outcomes such as feelings of inferiority. Laderchi (2001) finds that food aid programs in Peru increase food consumption and expenditure but have

no significant effect on child nutrition. Using qualitative evidence, Copestake (2008) finds that recipients of Vaso de Leche do not feel inferior as compared to non-recipients and that there is positive agreement among recipients that the program is good for the community. Further, when asked what they like most about the program, a large majority responded “getting food” suggesting that material benefits of the program are of primary concern. Conditional cash transfers in Peru are more recent with “Juntos” being implemented since 2005 (Jones et al., 2008). Using qualitative evidence, Jones et al. (2008) find that there is a general consensus among Juntos recipients that the program is making “a positive difference to their lives”. Further, because the cash transfers were given to mothers, many of the recipients responded that the program has increased their bargaining power within the household. Impact evaluation of Juntos on objective well-being suggests that the program has a moderate impact on increasing income and consumption (Perova and Vakis, 2009). In addition, the program also has a positive impact on utilization of health services, nutritional intake, and school enrollment and completion. Thus, negative perceptions of well-being are not observed among the recipients of Vaso de Leche and Juntos, who are among the poorest households.

Microfinance institutions emerged in Peru in the 1970s and since then have had a significant presence (Pait, 2009). While there is no study that specifically examines impact of microfinance on subjective economic well-being in the context of Peru, a study by Dunn (1999) examines the impact of being a microfinance recipient and microentrepreneur on feelings of self-esteem and respect as part of a broader impact assessment. The study finds that of all the microfinance clients surveyed, 96.4 percent feel that they were making a significant contribution towards the economic condition of their household as compared to 93.3 percent of all non-clients. Further, 87.1 percent of all microfinance clients feel that they were valued by other household members because of being microentrepreneurs as compared to 79.9 percent of all non-clients. In addition, the study also asks clients and non-clients whether they feel optimistic about dealing with the future and finds that 82.4

percent of all microfinance clients feel that they are in a good position to deal with the future as compared to 71.3 percent of all non-clients. With regards to impact on consumption, client households spend 20 percent more on education as compared to non-client households, and spend \$11 more on food every two weeks as compared to non-client households. Using a randomized control trial on microfinance recipients of FINCA-Peru, Karlan and Valdivia (2011) find that adding business development training to the lending program has no significant effect on revenues or profits of the recipients. However, it has a positive effect on client retention from which the authors infer that recipients place a high value on business development training because it may improve their business outcomes and repayment capability.

2.3 Data and empirical strategy

2.3.1 Data and key variables

This study uses data from the 2004 Peru Poverty Assessment Tool (PAT) collected by the IRIS Center at the University of Maryland. The advantage of using the Peru PAT is that it was developed specifically for assessing the poverty status of social transfers, microfinance, and microenterprise funds beneficiaries. The salient feature of this survey is that it is a country-specific tool that takes into consideration national poverty definitions and poverty lines. Therefore, it is more accurate than surveys that contain information on multiple countries and yield country-level poverty estimates. The 2004 Peru PAT contains data on 1,975 households.

The key dependent variables are subjective and objective economic well-being and the key independent variable is being a program recipient. Subjective economic well-being is measured using the 10-step Economic Ladder Question (ELQ). The ELQ asks respondents *“Imagine that at the bottom, on the first step, stand the poorest people, and on the highest step, the tenth, stand the rich. On which step of this ladder is your household located today?”* Rungs 6-10 have been collapsed

into one rung as very few individuals placed themselves on those rungs.⁴ The PAT does not ask questions directly on household incomes. Therefore, the sum of key consumption expenditures such as food, education, health, fuel, transport, and utilities is used as a proxy to operationalize objective economic well-being. For social transfers programs, I use a dummy that identifies whether the household has been a recipient of any of the government in-kind social transfers programs specified in the survey. It may be argued that cash transfer programs would provide better insights when compared to microfinance programs. However, due to lack of such data in the survey I use in-kind social transfers programs and examine the effect on household consumption expenditures as it is more directly affected by such programs. The programs covered in the survey are food aid related. Most of the households reported that they were recipients of Vaso de Leche, Desayuno and Almuerzo Escolar, and food-for-work programs. Length of being a program recipient is operationalized using the “total-time-on” (TTO) measure (Gottschalk and Moffitt, 1994). Length of being a social transfers recipient is measured using TTO over the last three years (36 months) as that is the maximum recall period covered by the survey.

Coverage of only food and nutrition-related social transfers in the survey is a limitation of this analysis as the effect of cash transfers on well-being measures could be very different. However, the use of in-kind social transfers for the purpose of analysis can be justified. Some common concerns pertaining to in-kind and cash transfers programs are changes in household labor market behavior that subsequently affects household income or consumption (Laderchi, 2001). Copestake (2008) in his qualitative evaluation of Vaso de Leche asked recipients whether they would prefer cash instead of in-kind disbursement. He finds that of the 95 recipients interviewed, 58 opted for in-kind transfers, 19 said they would prefer cash equivalent to the quantity of food, and 18 said either would be equally good. Even accounting for the commonalities and preferences, the effect of cash and

⁴This follows the methodology used by Carletto and Zezza (2006).

in-kind programs may still vary. However, in the absence of comprehensive data on programs and well-being measures in a single household survey, this is the best way forward.

Microfinance program recipients are identified by a dummy indicating whether the household has any members who receive loans from government or non-government microfinance programs at the time of the survey. Similar to social transfers, I use time since household is a microfinance recipient to measure length of participation in a microfinance program. I argue that being a long-term recipient of social transfers is systematically different from being a long-term recipient of microfinance because of positive temporal effects of receiving microfinance such as increased creditworthiness and stronger social relations. In addition to length of being a recipient, I use a dummy variable indicating whether the MFI loan was tied to a business development service (BDS) to capture self-reliance.

The unit of analysis is the household as the well-being questions are asked at the household-level. It is therefore not possible to tease out the effects on different members of the household, especially men versus women. However, I control for gender, age, and literacy of the household head to account for possible differences.

2.3.2 Baseline specification

To evaluate the impact of being a poverty alleviation program recipient and length of being a recipient on subjective economic well-being I treat the recoded 6-step ELQ as a continuous variable and estimate variations of the following OLS regression specification.⁵

⁵The specifications were also run using ordinal logit models and the key results remained the same. Results are available upon request.

$$\begin{aligned}
\text{SubjEcoWB}_i = & \beta_0 + \beta_1 \text{Program}_i + \beta_2 \text{ProgramLongTerm}_i + \beta_3 \text{BusDev}_i + \\
& \beta_4 \text{VeryPoor}_i + \beta_5 \text{Program}_i * \text{VeryPoor}_i + \beta_n W_{ni} + \varepsilon_i
\end{aligned}
\tag{2.1}$$

where, the dependent variable is the self-reported subjective economic well-being with higher values corresponding to being subjectively better-off. Program_i is a dummy that refers to the household being a recipient of social transfers or being a member of a MFI. ProgramLongTerm_i is a dummy that classifies the household as a long-term recipient of either social transfers or microfinance if they received social transfers for more than 12 months of the 36 months captured in the questionnaire or if they participated in a microfinance program for more than 4 years. These cut-off points are based purely on the sample means and may not fully capture actual long-term recipients. However, in the absence of longer recall periods in the survey and panel data, this is the best way forward. BusDev_i refers specifically to households who are members of MFI and have received some BDS from the MFI such as training and knowledge sharing.

VeryPoor_i is a dummy that identifies the poverty status of the household based on household living standards (HLS) such as the building material used, whether the household has electricity, whether the household has a toilet and so on. The survey classifies households into five HLS quintiles with the first quintile representing the poorest and the fifth quintile representing the richest. The HLS variable is the interviewer's assessment and is relative, that is, the survey imposes the community being surveyed as the reference group when classifying the households in HLS quintiles. I use the bottom two quintiles to identify households that are "very poor". The interaction term $\text{Program}_i * \text{VeryPoor}_i$ is included to examine whether the effect of being a program recipient on the very poor is different from the effect on the relatively less poor households. The hypothesis is that the effect of poverty alleviation programs on the very poor is systematically different from those who

are not because of targeting and program objectives. For instance, social transfers programs might extensively target the very poor while microfinance programs might filter the risky and very poor to avoid bad debts.

β_n is the vector of n factors that possibly contribute to subjective economic well-being and includes whether the household resides in a rural or urban area, age of household head, whether the head of the household is literate (can read and write), whether the head of the household is married, whether the head of the household is female, size of the household, and whether the head of the household is unemployed.

To evaluate the impact of being a poverty alleviation program recipient and length of being a recipient on consumption or objective well-being, I estimate variations of the following OLS regression specification. The dependent variable measures log of consumption for each household i with higher values corresponding to the household being more objectively better-off. All regression analyses incorporate the sampling weights and design.

$$\begin{aligned} \ln(\text{Consumption}_i) = & \beta_0 + \beta_1 \text{Program}_i + \beta_2 \text{ProgramLongTerm}_i + \beta_3 \text{BusDev}_i + \\ & \beta_4 \text{VeryPoor}_i + \beta_5 \text{Program}_i * \text{VeryPoor}_i + \beta_n W_{ni} + \varepsilon_i \end{aligned} \quad (2.2)$$

2.3.3 Issue of endogeneity

There are three potential sources of endogeneity specific to this analysis. First, is self-selection or selection bias. Households falling below certain levels of objective economic well-being may be more likely to receive program benefits. It is also possible that household with members having greater creditworthiness and entrepreneurship ability are more likely to receive microfinance loans. Second, drawing upon the “frustrated achievers, happy peasants” paradox it is likely that those receiving microfinance have greater expectations and aspirations while those

receiving social transfers programs are inherently more content (Graham and Pettinato, 2002). And third, because the survey is cross-sectional and non-randomized there could be a possible measurement error arising from the fact that the distribution of observed characteristics of recipients and non-recipients are different. These would cause an issue of reverse causality or result in biased estimates. I address these issues by using propensity score matching (PSM) whereby I create treatment and control groups using statistical matching. It is rather challenging to use the instrumental variables (IV) approach because the dependent variables, subjective and objective economic well-being, are highly correlated with most socioeconomic indicators.⁶ There are also certain advantages of using PSM over IV. PSM does not assume linearity and it is valid even though there is little overlap between the distributions of independent variables of treatment and control groups (Arun et al., 2006). Further, the propensity score is a balancing score, that is, conditional on the propensity score, the distributions of the observed covariates are independent of the binary treatment (Rosenbaum and Rubin, 1983). As a result, the distribution of covariates are the same for the treated and control units resulting in more robust treatment effects. The methodological details of and issues pertaining to PSM are

⁶I estimated IV models to test whether this was indeed the case. Commonly used instruments in evaluating effects of being poverty alleviation program recipients are eligibility criteria. Since social transfers and microfinance programs are generally targeted towards the poor and low-income households instruments used are variables that reflect the poverty or income status of the households. Previous studies have used land ownership, number of dependents, and moneylenders' rate of interest as instruments in evaluating the effect of these programs on income or consumption (Pitt and Khandker, 1998; Islam, 2008; Berg and Emran, 2011; World Bank, 2011). I followed the approach used by Islam (2008) and exploit the information on household dwelling conditions in the survey and use a vector of instruments. The assumption here was that dwelling conditions are exogenous and observable to program officers who use them for targeting purposes. The vector of instruments I used were whether the household has piped water, whether the household has electricity, and whether the household has a toilet. To test the strength of the instruments I estimated first stage probit regression models with the program recipient dummy as the dependent variable and the three instruments as independent variables respectively. The results indicated that all three instruments are moderate or statistically significant in predicting the probability of being a program recipient. I then estimated second stage OLS regression models in which being a program recipient was instrumented and ran the Hausman test to confirm whether only the IV estimates were consistent. Two issues emerged. First, the IV specifications resulted in very large standard errors thus rendering most of the effects insignificant. And second, the $prob > chi2$ of the Hausman test for all specifications was greater than 0.10 suggesting that the null of no endogeneity could not be rejected and the IV estimates were not significantly different from OLS estimates. Results are available upon request.

thoroughly reviewed by Rosenbaum and Rubin (1983), Becker and Ichino (2002), Dehejia and Wahba (2002), and Smith and Todd (2005). The most serious critique is that the results of PSM are highly sensitive to the covariates included to compute the propensity scores and the specific sample under analysis. In the absence of true experimental data and valid instruments, PSM is the preferred method for the purposes of analysis in this chapter.

As specified by Rosenbaum and Rubin (1983), the propensity score is the conditional probability of receiving a treatment (in this case being a program recipient) given a set of pre-treatment household characteristics, X . Therefore,

$$p(X) = Pr\{D = 1|X\} = E\{D|X\} \quad (2.3)$$

where, $D = \{0, 1\}$ is the binary variable indicating whether the household has received the treatment and X is the vector of pre-treatment characteristics. I test the following treatments and their effects on subjective and objective economic well-being - whether the household is a recipient of social transfers or microfinance, whether the household received BDS, and whether the household is a long-term social transfers or microfinance recipient. To estimate the treatment effect I follow the approach suggested by Becker and Ichino (2002).

Upon computing the propensity score of each household $p(X_i)$ the Average Effect of Treatment on the Treated (ATT) is estimated as:

$$\begin{aligned} \tau &\equiv E\{Y_{1i} - Y_{0i} | D_i\} \\ &= E[E\{Y_{1i} - Y_{0i} | D_i = 1, p(X_i)\}] \\ &= E[E\{Y_{1i} | D_i = 1, p(X_i)\}] - E[E\{Y_{0i} | D_i = 0, p(X_i)\} | D = 1] \end{aligned}$$

where, $D = \{0, 1\}$ is the indicator of exposure to the treatment, that is, whether the household has is a recipient of social transfers or microfinance, or whether

household is a long-term recipient of social transfers or microfinance. X is the multidimensional vector of pre-treatment covariates. Y_{1i} and Y_{0i} are the potential outcomes, that is, levels of subjective or objective economic well-being, in the two counterfactual situations of receiving and not receiving the treatment (Becker and Ichino, 2002). Two hypotheses - satisfaction of the balancing property and unconfoundedness are needed to derive the treatment effect. The balancing hypothesis implies that for a specific propensity score the treatment is randomly distributed and thus the households receiving and not receiving the treatment are identical. To satisfy the balancing property and avoid sensitivity to the inclusion of additional covariates, I use the same set of covariates to compute the propensity score across all treatments - area of residence, age of household head, whether the head of the household is literate (can read and write), whether the head of the household is married, whether the head of the household is female, and size of the household. The unconfoundedness hypothesis implies that for a specific propensity score the outcome or dependent variables (subjective or objective economic well-being) are uncorrelated to the treatment. The unconfoundedness hypothesis cannot be directly tested. However, given that the covariates used for matching are chosen such that they are not likely to be influenced by the treatment, this condition can be assumed to be satisfied.⁷

For matching, I use the caliper matching technique with 0.01 tolerance level. Caliper matching is a refinement of nearest neighbor matching wherein a tolerance level on the maximum propensity score distance (caliper) is used to avoid the risk of bad matches. Observations from the treatment and control group are then matched with the nearest neighbor within the caliper. While caliper matching results in better matching as compared to standard nearest neighbor matching, it uses only as many comparison units as are available within the calipers, thus reducing the number of observations used for matching. A standard logit model is

⁷The covariates used for matching do not include employment status and household living standards (poverty status) because it is assumed that both these variables are likely to be affected by the treatment.

used to calculate the propensity score, where the model can be written as,

$$D_i = f(\text{area}, \text{age}, \text{literate}, \text{married}, \text{female}, \text{size}) \quad (2.4)$$

where, D_i is the dummy for the treatment variable, which is a function of the covariates listed above. The quality of matching is tested using the bias reduction approach which tests the bias reduction before and after matching. A bias in the data is likely because in observational studies differences in observed covariates in the treatment and control group are a common issue. After matching and testing for the quality of matching, the results indicate that there is a significant reduction in both the bias mean and standard deviation across the different treatments as shown in Table 2.1. There is no set level for bias reduction above which the matching is considered successful. However, existing empirical evidence suggests that a 3 to 5 percent reduction in bias is satisfactory (Caliendo and Kopeinig, 2008). As the matching in this study meets these expectations, it is considered successful.

2.4 Results

2.4.1 Summary statistics

From the descriptive statistics in Table 2.2 it is observed that approximately 23 percent of the households in the sample are microfinance recipients and approximately 28 percent are social transfers recipients. On average households that are microfinance recipients did so for 2.4 years and those that are social transfers recipients did so for 10 months. Of those who receive microfinance, 10.3 percent are long-term recipients, that is, they received loans for more than 4 years. As against this, of those who receive social transfers, 23.7 percent are long-term recipients of social transfers, that is, they received program benefits for more than 12 months.

Table 2.1 – Summary of Distribution of Bias Before and After Matching

Treatment	Bias Mean		Bias S.D.	
	Before Matching	After Matching	Before Matching	After Matching
Microfinance recipient	31.609	9.326	27.332	7.333
Long-term microfinance recipient	24.224	8.118	20.527	6.319
Received BDS	6.534	2.589	4.510	3.593
social transfers recipient	41.000	3.438	27.882	7.043
Long-term social transfers recipient	39.806	2.148	42.847	2.272

Notes: Summary of results from standard bias reduction test after caliper matching. Covariates used for matching and computing propensity score are: area of residence, age of household head, whether the head of the household is literate (can read and write), whether the head of the household is married, whether the head of the household is female, and size of the household.

Table 2.2 – Descriptive statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
Household Resides in Urban Area	0.762	0.426	0	1	1975
Average age of household head	46.469	14.124	18	94	1975
Household head is literate	0.958	0.201	0	1	1975
Household head is married	0.795	0.403	0	1	1975
Household head is female	0.178	0.382	0	1	1975
Household size	2.069	0.636	1	6	1975
Household head is unemployed	0.010	0.098	0	1	1975
Household living standards are very poor	0.543	0.498	0	1	1975
Subjective Economic Well-Being	3.386	1.217	1	6	1975
Log of Consumption	8.877	0.694	6.120	10.899	1975
Household is a microfinance recipient	0.227	0.419	0	1	1975
Average years HH received microfinance	2.400	2.189	1	21	448
Household is long-term recipient of microfinance	0.103	0.304	0	1	448
Household received business development service	0.145	0.353	0	1	448
Household is a social transfers recipient	0.282	0.450	0	1	1975
Average months HH received social transfers	10.117	6.018	0.267	24	528
Household is long-term recipient of social transfers	0.237	0.425	0	1	528

A question of interest is - how does subjective and objective economic well-being correlate in the sample under study? To answer the question, first, I follow the method adopted by Carletto and Zezza (2006) and construct a cross-tabulation of subjective and objective economic well-being. To match the 6 rungs of subjective economic well-being, I generate 6 quantiles of the consumption variable. The cross-tabulation is constructed such that the number of individuals on each subjective economic well-being rung equals the number of individuals on the corresponding objective economic well-being rung. In case there was a perfect correlation between subjective and objective economic well-being, the off-diagonals would have frequency equal to zero. Table 2.3 presents the results of the cross-tabulation. Similar to the findings by Carletto and Zezza (2006) there appears to be only a partial correspondence between subjective and objective economic well-being. By observing the values in the diagonals we see that of the 111 households who respond as being the poorest as per objective economic well-being only 20 households or 18 percent are in the poorest rung of subjective economic well-being. Similarly, only 6 of the 76 households or 8 percent who responded as being the richest as per objective evaluations of economic well-being are actually in the highest rung of subjective economic well-being. The Spearman coefficient reveals a moderate association between subjective and objective economic well-being ($\rho=0.3919$). Therefore, there is certainly a difference in households' subjective and objective evaluations of economic well-being.

Second, I examine the poverty headcount ratios based on subjective and objective economic well-being across variables of interest. Following Ravallion and Lokshin (2002) and Carletto and Zezza (2006) I classify as poor those households according to subjective economic well-being who fall in the lowest three rungs. And I classify as poor those households according to objective economic well-being whose log

Table 2.3 – Cross-tabulation of subjective and objective economic well-being

Subjective Economic Well-Being	Objective Economic Well-Being						Total
	1	2	3	4	5	6	
1	20	48	33	8	1	1	111
2	44	108	121	51	21	1	346
3	31	109	248	149	99	25	661
4	10	49	153	123	103	22	460
5	2	24	88	116	70	21	321
6	4	8	18	13	27	6	76
Total	111	346	661	460	321	76	1975

value of consumption is 8 or below.⁸ In Table 2.4 it is observed that there are differences in the poverty headcount ratio across all variables. For area of residence, respondents in urban areas perceive themselves as being poorer than what the objective measure suggests. In contrast, though much higher in percentage terms as compared to urban residents, the difference between objective and subjective economic well-being for rural residents is minimal. This might be due to relative status effects as the reference group for rural households is much narrower than urban households who live under conditions of greater disparity. Households whose heads are unemployed perceive themselves as being poorer than what the objective measure indicates. This is as expected because the unemployed may feel more pessimistic about their current as well as future prospects as compared to those who have similar levels of consumption but are employed. Interestingly, both, recipients of microfinance and recipients of social transfers feel poorer than what the objective measure suggests. However, the difference for recipients of social transfers is much higher. A possible explanation for microfinance recipients might be that those who apply for microfinance have higher expectations and aspirations to begin with and therefore strive harder to achieve self-reliance. For social transfers recipients the difference might be due to the lack of agency associated with in-kind social transfers.

The initial descriptive analysis shows that despite the ELQ being a subjective assessment of monetary well-being in terms of “rich” and “poor” it appears that

⁸The cut-off points are computed using the -poverty- procedure in Stata v.10

households do not associate well-being exclusively with income or consumption and other factors such as self-reliance and relative status may be at play. This is also why it makes delineating the effects of being a program recipient on subjective and objective economic well-being important and interesting.

Table 2.4 – Subjective and Objective Poverty Profile - Headcount Ratios

Variable	Sub-group	Subjective	Objective
Area of residence	Rural	39.79	38.72
	Urban	17.94	3.06
Household head is literate	No	50.60	46.99
	Yes	21.93	9.99
Household head is married	No	23.52	13.37
	Yes	23.04	11.08
Household head is female	No	23.28	11.82
	Yes	22.51	10.26
Household head is unemployed	No	11.05	5.26
	Yes	23.16	11.61
Recipient of microfinance	No	25.93	14.15
	Yes	13.62	2.68
Recipient of social transfers	No	17.55	6.34
	Yes	37.41	2.48
Total		23.14	11.54

Notes: Table presents proportion of population in each sub-group under the specified poverty line or cut-off point for subjective and objective poverty. Cut-off point for subjective poverty is 3 and that for objective poverty or $\ln(\text{consumption})$ is 8.

2.4.2 Regression results

The effect of being a microfinance recipient on subjective and objective economic well-being is presented in Table 2.5. From column (1) and (3) it is observed that being a microfinance recipient has a marginally statistically significant positive effect on subjective economic well-being and has no statistically significant effect on consumption. From the models including the interaction term it is observed that being a microfinance recipient has a positive and statistically significant on both subjective economic well-being and consumption of households that are very poor (as compared to households who are microfinance recipients but not very poor).

The length of receiving microfinance has no statistically significant effect on either subjective economic well-being or consumption, which is observed in Table 2.6. For robustness check, I estimate a model using actual years of receiving microfinance, the results of which are presented in Table 2.7. It is seen that while each additional year of receiving microfinance has no significant effect on subjective well-being, it has a statistically significant and non-linear effect on consumption. This implies that while being a microfinance recipient negatively affects consumption in the short-term, it may have a positive and significant effect on consumption in the long-term. The effect of being a recipient of business development service (BDS) is presented in Table 2.8. It is observed that receiving BDS has a marginally statistically significant positive effect on subjective economic well-being. In contrast, it has a statistically significant negative effect on consumption on the overall sample but no effect on the consumption of the very poor.

Table 2.5 – Being a microfinance recipient

	Subjective	Subjective	Objective	Objective
	(1)	(2)	(3)	(4)
Microfinance recipient	0.111*	-0.067	-0.001	-0.138***
	(0.061)	(0.078)	(0.026)	(0.034)
Very poor HLS	-0.669***	-0.769***	-0.341***	-0.418***
	(0.054)	(0.064)	(0.025)	(0.030)
Microfinance*VeryPoor		0.390***		0.300***
		(0.119)		(0.050)
Observations	1975	1975	1975	1975
R^2	0.171	0.176	0.438	0.446

Notes: OLS estimates. Robust standard errors in parentheses. Dependent variables are 6-step ELQ and log of annual consumption. The following variables are included in the regression models but not reported: area of residence, age of household head, whether household head is literate, whether household head is married, whether household head is female, size of the household, and whether household head is employed.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2.6 – Long-term Recipient of Microfinance

	Subjective	Subjective	Objective	Objective
	(1)	(2)	(3)	(4)
Long-term microfinance recipient	-0.116 (0.161)	-0.149 (0.199)	-0.067 (0.069)	-0.057 (0.083)
Very Poor HLS	-0.362*** (0.103)	-0.371*** (0.108)	-0.119*** (0.041)	-0.117*** (0.043)
MicrofinanceLongTerm*VeryPoor		0.087 (0.336)		-0.027 (0.143)
Observations	448	448	448	448
R^2	0.092	0.093	0.432	0.433

Notes: OLS estimates. Robust standard errors in parentheses. Dependent variables are 6-step ELQ and log of annual consumption. The following variables are included in the regression models but not reported: area of residence, age of household head, whether household head is literate, whether household head is married, whether household head is female, size of the household, and whether household head is employed.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2.7 – Testing non-linear effect of years of receiving microfinance

	Subjective	Subjective	Objective	Objective
	(1)	(2)	(3)	(4)
Years of receiving microfin.	0.003 (0.048)	-0.000 (0.047)	-0.059*** (0.019)	-0.055*** (0.019)
Years of receiving microfin. sq	-0.000 (0.003)	-0.000 (0.003)	0.004*** (0.001)	0.004*** (0.001)
Very Poor HLS	-0.359*** (0.103)	-0.393*** (0.149)	-0.123*** (0.041)	-0.086 (0.053)
MicrofinanceYears*VeryPoor		0.014 (0.043)		-0.016 (0.015)
Observations	448	448	448	448
R^2	0.092	0.092	0.201	0.202

Notes: OLS estimates. Robust standard errors in parentheses. Dependent variables are 6-step ELQ and log of annual consumption. The following variables are included in the regression models but not reported: area of residence, age of household head, whether household head is literate, whether household head is married, whether household head is female, size of the household, and whether household head is employed.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2.8 – Received Business Development Service (BDS)

	Subjective	Subjective	Objective	Objective
	(1)	(2)	(3)	(4)
Received BDS	0.230*	0.172	-0.225***	-0.160**
	(0.141)	(0.168)	(0.059)	(0.074)
Very Poor HLS	-0.351***	-0.372***	-0.126***	-0.103**
	(0.103)	(0.110)	(0.040)	(0.043)
BDSRecv*VeryPoor		0.152		-0.170
		(0.306)		(0.122)
Observations	448	448	448	448
R^2	0.097	0.098	0.214	0.217

Notes: OLS estimates. Robust standard errors in parentheses. Dependent variables are 6-step ELQ and log of annual consumption. The following variables are included in the regression models but not reported: area of residence, age of household head, whether household head is literate, whether household head is married, whether household head is female, size of the household, and whether household head is employed.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Results in Table 2.9 suggest that being a recipient of social transfers has a statistically significant negative effect on both subjective economic well-being as well as consumption. However, being a recipient of social transfers does not have any significant effect on subjective economic well-being or consumption of the very poor. The length of receiving social transfers has a statistically significant negative effect on both subjective economic well-being and consumption as is seen from Table 2.10. Again however, the length of receiving social transfers does not have any significant effect on subjective economic well-being or consumption of the very poor. For robustness check, I estimate a model using actual months of receiving social transfers, the results of which are presented in Table 2.11. It is observed that there is a non-linear effect of receiving social transfers on subjective economic well-being and the effect is marginally statistically significant. This implies that while receiving social transfers has no significant effect on subjective economic well-being in the initial months, there is a significant negative effect being a social transfers recipient in the long-term. Further, there is a non-linear and statistically significant negative effect of being a social transfers recipient on consumption implying that the initial positive effects on consumption wear off with

each additional month of being a recipient.

Table 2.9 – Being a social transfers recipient

	Subjective	Subjective	Objective	Objective
	(1)	(2)	(3)	(4)
Social transfers recipient	-0.432*** (0.063)	-0.465*** (0.103)	-0.141*** (0.030)	-0.160*** (0.045)
Very Poor HLS	-0.624*** (0.054)	-0.635*** (0.061)	-0.325*** (0.025)	-0.331*** (0.028)
SocialTransfer*VeryPoor		0.050 (0.124)		0.029 (0.058)
Observations	1975	1975	1975	1975
R^2	0.190	0.191	0.445	0.446

Notes: OLS estimates. Robust standard errors in parentheses. Dependent variables are 6-step ELQ and log of annual consumption. The following variables are included in the regression models but not reported: area of residence, age of household head, whether household head is literate, whether household head is married, whether household head is female, size of the household, and whether household head is employed.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2.10 – Long-term recipient of social transfers

	Subjective	Subjective	Objective	Objective
	(1)	(2)	(3)	(4)
Long-term social transfers recipient	-0.358*** (0.116)	-0.206 (0.354)	-0.336*** (0.065)	-0.504*** (0.161)
Very poor HLS	-0.600*** (0.115)	-0.569*** (0.120)	-0.256*** (0.053)	-0.286*** (0.054)
SocialTransferLongTerm*VeryPoor		-0.182 (0.368)		0.201 (0.169)
Observations	528	528	528	528
R^2	0.131	0.132	0.443	0.445

Notes: OLS estimates. Robust standard errors in parentheses. Dependent variables are 6-step ELQ and log of annual consumption. The following variables are included in the regression models but not reported: area of residence, age of household head, whether household head is literate, whether household head is married, whether household head is female, size of the household, and whether household head is employed.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2.11 – Testing non-linear effect of months of receiving social transfers

	Subjective	Subjective	Objective	Objective
	(1)	(2)	(3)	(4)
Months of receiving soc. transfers	0.018 (0.028)	0.022 (0.031)	0.051*** (0.014)	0.035** (0.015)
Months of receiving soc. transfers sq	-0.002* (0.001)	-0.002* (0.001)	-0.003*** (0.001)	-0.003*** (0.001)
Very Poor HLS	-0.598*** (0.114)	-0.546*** (0.211)	-0.255*** (0.053)	-0.446*** (0.095)
SocTransferMonths*VeryPoor		-0.005 (0.021)		0.021** (0.009)
Observations	528	528	528	528
R^2	0.128	0.129	0.438	0.443

Notes: OLS estimates. Robust standard errors in parentheses. Dependent variables are 6-step ELQ and log of annual consumption. The following variables are included in the regression models but not reported: area of residence, age of household head, whether household head is literate, whether household head is married, whether household head is female, size of the household, and whether household head is employed.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

2.4.3 Decomposing the effect on consumption

A plausible concern specific to the effect of receiving social transfers on consumption is the summing up of different components of expenditures to operationalize the objective economic well-being measure. It is possible that while certain consumption expenditures decrease, such as expenditure on food, certain other expenditures increase, such as expenditure on education and health. The negative sign on consumption in most of the models suggests a possible substitution effect as, on average, for households in the sample 59 percent of the total expenditure is on food and the in-kind social transfers covered in this survey primarily consist of food aid. To examine this, I run multivariate regression models with three key components of expenditure as the dependent variables - food, education, and health.⁹ In addition to being a microfinance recipient I use number of loans as an independent variable to test whether there is any substitution effect away from consumption expenditures towards payment of loans or whether more loans correspond to increased consumption. The results are summarized in Table 2.12. Being a recipient

⁹Food, education, and health expenditures constitute on average 70 percent of the total expenditures in the sample under study.

of microfinance statistically significantly increases consumption expenditure on food, education, and health. The length of receiving microfinance and receiving BDS does not have any significant effect on the consumption components. Also, number of loans do not have any significant effect on any of the consumption components. On the other hand, being a recipient of social transfers statistically significantly decreases expenditure on food suggesting that there might be a substitution effect at play.

Table 2.12 – Effect on Food, Education, and Health Consumption Expenditures

Variable	Food	Education	Health
Microfinance recipient	+***	+***	+***
Long-term microfinance recipient	-	-	+
Number of loans	-	+	+
Received BDS	-	+	-
Social transfers recipient	_*	-	-
Long-term social transfers recipient	-	-	+

Notes: Summary of results from multivariate regression. Dependent variables are food expenditure, education expenditure, and health expenditure. The following variables are included in the regression models but not reported: area of residence, age of household head, whether household head is literate, whether household head is married, whether household head is female, size of the household, and whether household head is employed.
 * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

2.4.4 PSM results

The results of PSM, summarized in Table 2.13, are consistent with the OLS regression results and serve as a robustness check. Being a recipient of microfinance and BDS have a positive effect on subjective economic well-being while being a recipient of social transfers has a negative effect on subjective economic well-being. Similar to the OLS results, all treatments have a negative effect on consumption. Further, being a long-term recipient of microfinance and social transfers both have a negative effect on subjective economic well-being.

Table 2.13 – Average Treatment Effect using Propensity Score Matching

Treatment	N		ATT		Diff.	S.E.	t-stat
	Treatment	Control	Treatment	Control			
DV: Subjective economic well-being							
Microfinance recipient	447	1459	3.624	3.380	0.244	0.131	1.87
Long-term microfinance recipient	45	363	3.622	3.689	-0.067	0.223	-0.30
Received BDS	63	373	3.889	3.524	0.365	0.213	1.71
Social transfers recipient	550	1409	2.885	3.338	-0.453	0.120	-3.78
Long-term social transfers recipient	120	359	2.583	2.883	-0.300	0.195	-1.54
DV: Objective economic well-being							
Microfinance recipient	447	1459	9.053	9.082	-0.029	0.066	-0.43
Long-term microfinance recipient	45	363	9.064	9.174	-0.110	0.093	-1.19
Received BDS	63	373	8.857	9.188	-0.331	0.088	-3.74
Social transfers recipient	550	1409	8.522	8.716	-0.195	0.072	-2.69
Long-term social transfers recipient	120	359	8.005	8.334	-0.330	0.116	-2.83

Notes: Summary of results from Caliper Propensity Score Matching. Number of observations refers to observations in the treatment and control groups that are in the common support area. Covariates used for matching and computing propensity score are: area of residence, age of household head, whether the head of the household is literate (can read and write), whether the head of the household is married, whether the head of the household is female, and size of the household.

While PSM is useful in controlling for endogeneity, these results have to be treated with caution. Recent discussions between Smith and Todd (2005) and Dehejia (2005) highlight two possible issues related to PSM and cross-sectional data. First, unobserved characteristics or time effects cannot be controlled for using cross-sectional data. And second, bias associated with cross-sectional matching estimators may be large without a good set of covariates or if treated and control households are not strictly comparable, for example, if they are located in areas with starkly different characteristics (Smith and Todd, 2005; Arun et al., 2006). In this sample, the results could be possibly biased because of the oversampling of urban households.

2.4.5 Controlling for consumption in the subjective economic

well-being specification

It is possible that the relationship between being a program recipient and subjective economic well-being is confounded by consumption. This could mean that if consumption is controlled for in the specification the effect on subjective economic well-being is no longer significant, or, because household rank themselves differently on the subjective and objective measures (as was observed in the descriptive analysis), the effect on subjective economic well-being may not change. The results in Table 2.14 suggest that even after controlling for consumption the significant positive effect of being a microfinance recipient on the subjective economic well-being of the very poor remains. The significant positive effect of receiving BDS on subjective economic well-being also remains. Further, the statistically significant negative effect of receiving social transfers on subjective economic well-being continues to hold. The results provide robustness to the findings in previous sections and reveal that being a program recipient has an effect on subjective economic well-being *over and above objective economic well-being*. This may be driven by the difference in the manner households rank themselves on these measures and that these measures are not perfectly positively correlated.

2.5 Effects of being a program recipient on subjective and objective economic well-being

The results from the non-experimental regression results and the quasi-experimental PSM results highlight three key effects of being a recipient of microfinance and social transfers on subjective and objective economic well-being - (i) households value livelihood promotion and self-reliance (ii) being a recipient of in-kind social transfers can cause “welfare stigma” but not among the very poor (iii) livelihood promoting programs have a positive effect on the consumption of the very poor, and (iv) in-kind social transfers have a negative effect on consumption possibly due to a substitution effect.

First, for the very poor, being a microfinance recipient has a statistically significant positive effect on both subjective and objective economic well-being. This suggests that the poor value livelihood promotion and the prospect of being self-reliant. Though only marginally significant, the positive effect of receiving BDS on subjective economic well-being further underscores the desire of households to be self-reliant. To re-ascertain the positive effects of being a microfinance recipient I estimate a model that includes a dummy for households that are recipients of both microfinance and social transfers. The purpose behind doing this to determine whether the benefits of receiving microfinance are confounded by also being a social transfers recipient. It is seen from Table 2.15 that even after controlling for this group, being a microfinance recipient continues to have a statistically significant positive effect on subjective and objective economic well-being of the very poor. The PSM results further buttress the positive effects of being a microfinance recipient on subjective economic well-being. These effects suggest that tying livelihood promoting programs with a BDS such as providing agricultural extension services or skills training can prove to be more beneficial in addressing multidimensional

Table 2.14 – Effect on subjective economic well-being controlling for consumption

	Microfinance recipient	BDS recipient	Social transfers recipient			
DV: Subjective economic well-being	(1)	(2)	(3)	(4)	(5)	(6)
Program recipient	0.112* (0.060)	0.003 (0.078)	0.291** (0.144)	0.217 (0.172)	-0.363*** (0.060)	-0.387*** (0.100)
Very poor HLS	-0.491*** (0.055)	-0.555*** (0.065)	-0.317*** (0.102)	-0.344*** (0.109)	-0.464*** (0.055)	-0.472*** (0.061)
Program*VeryPoor		0.237** (0.120)	0.199 (0.308)			0.036 (0.121)
Consumption	0.522*** (0.047)	0.511*** (0.048)	0.270** (0.125)	0.276** (0.125)	0.492*** (0.047)	0.491*** (0.047)
Observations	1975	1975	448	448	1975	1975
R ²	0.221	0.223	0.109	0.110	0.233	0.234

Notes: OLS estimates. Robust standard errors in parentheses. Dependent variable is 6-step ELQ. The following variables are included in the regression models but not reported: area of residence, age of household head, whether household head is literate, whether household head is married, whether household head is female, size of the household, and whether household head is employed.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

poverty.

Table 2.15 – Robustness check for effects of being a microfinance recipient

	Subjective	Subjective	Objective	Objective
	(1)	(2)	(3)	(4)
Microfinance recipient	0.197*** (0.067)	-0.037 (0.085)	-0.003 (0.030)	-0.146*** (0.038)
Microfinance & SocialTransfer	-0.318*** (0.118)	-0.144 (0.156)	0.007 (0.044)	0.039 (0.057)
Very Poor HLS	-0.660*** (0.054)	-0.771*** (0.064)	-0.341*** (0.025)	-0.418*** (0.030)
Microfinance*VeryPoor		0.562*** (0.131)		0.341*** (0.058)
MicroSocialTrans*VeryPoor		-0.449** (0.229)		-0.138 (0.085)
Observations	1975	1975	1975	1975
R^2	0.174	0.181	0.438	0.447

Notes: OLS estimates. Robust standard errors in parentheses. Dependent variables are 6-step ELQ and log of annual consumption. The following variables are included in the regression models but not reported: area of residence, age of household head, whether household head is literate, whether household head is married, whether household head is female, size of the household, and whether household head is employed.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Second, there is evidence of a likely “welfare stigma” associated with being a social transfers recipient as well as the length of receiving social transfers as suggested by the statistically significant negative effect on subjective economic well-being in the regression models. I re-ascertain the welfare stigma effect by including the dummy for households that are recipients of both microfinance and social transfers and the negative effect on subjective economic well-being still holds as observed in Table 2.16. The PSM results further strengthen this effect. Interestingly, for social transfers recipients who are very poor, subjective economic well-being is seemingly of little concern. The effects suggest that though being a social transfers recipients make households in general “feel poorer”, it is an important safety net for very poor households for whom receiving in-kind social transfers in times of economic distress or consumption smoothing is of greater

concern. This is also supported by the literature on the impact of in-kind social transfers on well-being of the poor in Peru (Copestake, 2008). Further, there is evidence that in-kind social transfers have a marginally significant negative effect on food expenditure owing to a possible substitution effect. However, whether the additional disposable income is invested in human capital development, especially education and health, is not supported by the data.

Table 2.16 – Robustness check for effects of being a social transfers recipient

	Subjective	Subjective	Objective	Objective
	(1)	(2)	(3)	(4)
Social transfers recipient	-0.502*** (0.072)	-0.604*** (0.130)	-0.185*** (0.037)	-0.208*** (0.062)
Microfinance & SocialTransfer	0.250** (0.119)	0.367** (0.185)	0.158*** (0.050)	0.116 (0.076)
Very Poor HLS	-0.620*** (0.054)	-0.641*** (0.061)	-0.322*** (0.025)	-0.336*** (0.028)
SocialTransfer*VeryPoor		0.142 (0.148)		0.034 (0.073)
MicroSocialTrans*VeryPoor		-0.164 (0.240)		0.083 (0.098)
Observations	1975	1975	1975	1975
R^2	0.192	0.193	0.447	0.448

Notes: OLS estimates. Robust standard errors in parentheses. Dependent variables are 6-step ELQ and log of annual consumption. The following variables are included in the regression models but not reported: area of residence, age of household head, whether household head is literate, whether household head is married, whether household head is female, size of the household, and whether household head is employed.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Third, there is a statistically significant positive effect of being a microfinance recipient on consumption of the very poor as is revealed in the OLS analysis. Decomposing the positive effect on consumption using a multivariate regression model suggests that livelihood promoting programs that emphasize income generation not only improve subjective economic well-being, but also lead to more income being allocated towards investment in human capital development. These findings have an important policy implication and indicate that livelihood promotion programs

are better suited to achieve sustainable reduction in multidimensional poverty and greater human development.

And fourth, contrary to the expected result, receiving in-kind social transfers has a significant negative effect on overall consumption expenditures. Upon further examination, I find that the negative effect might be due to a substitution effect where in-kind food transfers subsidize food consumption resulting in an overall negative effect on consumption because food expenditures comprise the largest component of total household consumption expenditure.

2.6 Conclusion

The main finding of this chapter is that the effect of being a recipient of a livelihood protecting program on subjective (or perceived) economic well-being is different as compared to the effect of being a recipient of a livelihood promoting program. This effect is robust to various specifications controlling for possibly confounding variables. Specifically, I find that the “welfare stigma” phenomenon is manifested among households that are recipients of livelihood protecting programs. However, the effects are not observed among the very poor households. Further, I find particularly significant positive effects on subjective economic well-being of the very poor resulting from being a recipient of livelihood promoting programs implying that such recipients feel “less poor” and have a preference for poverty alleviation programs that promote self-reliance and income generation. In addition to the effects on subjective economic well-being, I find that being a recipient of livelihood promoting programs significantly increases consumption of the very poor. Disaggregating the consumption component reveals that being a recipient of livelihood promoting programs significantly increases investments in human capital development, particularly increased investment in education and health. Further, I find that livelihood protecting programs that provide in-kind transfers have a negative effect on consumption, which is reverse of the expected result and possibly due to a substitution effect.

Though the results are specific to Peru, the broader policy goal emanating from the main finding is that poverty alleviation programs should emphasize income generation and self-reliance. However, obvious challenges are involved in implementing and monitoring large-scale livelihood promoting programs such as microfinance. Further, preference for programs promoting income generation and self-reliance does not discount the need for livelihood protection as is revealed by the absence of welfare stigma among the very poor. Therefore, a possible approach is to identify a middle ground that combines both livelihood protection and promotion, and achieves income security, self-reliance, and human capital development. Evidence of positive effects of such a program called the Income Generation for Vulnerable Group Development Program (IGVGD) implemented in Bangladesh by BRAC have been found by Matin and Hulme (2003). The IGVGD combines food aid with skills training and microloans and reaches out to more than 1.2 million poor households. More generally, optimizing the benefits poverty alleviation interventions requires the creation of a program design and evaluation framework that combines objective and subjective well-being. This could be a fruitful avenue for further research using panel and experimental data.

Chapter 3

Is there a high degree of inequality of opportunity for rural-urban migrant children in China?

3.1 Introduction

“Before the reform, the wall between the city and the countryside was tall and colossal; the gates passing through were few and tight. To the ordinary peasant the gates were practically closed, and climbing the wall was harder than ‘going up to the blue sky’. Since the reforms, the wall has been lowered and the gates are opened more and wider. But to many, the dividing wall remains, so do the gates and locks” (Chan and Zhang, 1999).

The economic reforms since 1978 have transformed China into a market-driven and enviously high-growth economy. According to Ravallion and Chen (2007), in the 20 years after 1981, the proportion of the population living in poverty in China has fallen from 53 percent to 8 percent. However, the gains of rapid growth and poverty reduction have not been equally distributed and inequality in China has grown over the same period. According to the Chinese National Bureau of Statistics (CNBS) the overall Gini grew from 0.317 in 1978 to 0.496 in 2006. Of particular significance is the inequality between urban and rural areas. Based on CNBS data, the Gini coefficients of urban and rural areas in 1978 were 0.16 and 0.21, respectively, which worsened to 0.32 and 0.36, respectively, by 2001 (Ravallion and Chen, 2007; Zhang and Eriksson, 2010). The general picture that emerges from the China story is that rapid economic growth has been accompanied by

high levels of income inequality. More and more, social scientists argue that this inequality in China might in fact be a “social volcano” that may lead to social unrest (Whyte, 2010).

A limitation of merely examining the Gini coefficient is that it does not provide any insight into critical questions of policy and normative significance such as whether inequality is a result of differences in individual efforts such as education, which could be acceptable to the society, or whether it is a result of discrimination based on factors over which the individuals have no control such as region of birth (urban or rural). The unbalanced development of urban and rural areas and the resulting regional inequality has long been examined by researchers. However, there is a growing argument that China is no longer a country of “two peoples”, that is, urban and rural. Rather, it has developed into a country of “three peoples”, that is, urban, rural, and the rural-urban migrants (Feng, 2010). The institutionalized *hukou* or household registration system has deepened the rural-urban cleavage and has created a new group of citizens, the rural-urban migrants, for whom clear differences exist in the quality of life and chances for upward mobility. Therefore, holistically analyzing inequality in China would mean applying a different lens that incorporates individuals’ background factors, particularly, residence status.

In this chapter I address several gaps that exist in the literature on inequality in China. First, I go beyond income inequality and examine inequality of opportunity in China on which there is very little research done. Second, instead of comparing only urban and rural residents, I add rural-urban migrants, who, even though they face unique social and institutional constraints, remain a largely ignored population in research on inequality in China. Third, a lot has been written about the disadvantages that have resulted from the *hukou system* for rural-urban migrants. However, this is the first attempt to actually *measure* the degree of inequality. And fourth, I focus on inequality of opportunity for migrant children as it is a critical indicator of intergenerational mobility and perpetuation of inequality.

To achieve this, I apply the Human Opportunity Index (HOI) developed by

Barros et al. (2009) which draws upon the inequality of opportunity framework proposed by Roemer (1993, 1998). Roemer (1998) segregates individual advantage into two components. First is “circumstances” such as family background, region of birth, or gender, over which individuals have no influence. And second is “efforts” that consists of factors based on individual choices such as education and type of occupation. He argues that inequality of opportunity caused by circumstances should be compensated for by the society. Drawing upon this, Barros et al. (2009) developed the Human Opportunity Index that combines both the coverage or access to basic opportunities and the degree to which the distribution of the opportunities is conditional on circumstances. Following their methodology, I develop the HOI for children of urban residents, rural residents, and rural-urban migrants using the 2002 Chinese Household Income Project and examine the distribution of opportunities essential for the development of children - education, access to safe water, and access to sanitation. Further, I examine the correlation between inequality of opportunity for children and the subjective well-being of their households. Specifically, I use household’s subjective standard of living assessments, happiness, and feelings of upward mobility to determine the association.

The key findings of this chapter are that rural-urban migrant children in China are significantly disadvantaged when compared to urban and even rural children. Inequality of opportunity for migrant children exists in access to education as well as in basic services such as access to water and sanitation. I also find that an increase in the HOI for migrant children is positively and significantly associated with the subjective well-being of migrant households measured in terms of subjective standard of living and feelings of upward mobility. This indicates that reducing inequality of opportunity for migrant children is a possible avenue for policy intervention aimed at furthering well-being of migrants as well as ending the cycle of continued intergenerational disadvantage.

The chapter is organized as follows. Section 3.2 presents a brief review of literature on rural-urban inequality in China and inequality of opportunity. Section

3.3 discusses the data, methodology, and empirical strategy. Section 3.4 presents the summary statistics and main results. Section 3.5 discusses reasons behind inequality of opportunity for rural-urban migrant children. Section 3.6 concludes.

3.2 Review of literature

3.2.1 Rural-urban inequality in China

Historically, rural-urban inequality in China has been attributed to two factors - regional, that is, extensive focus on coast-oriented and urban-biased development and institutional, that is, the *hukou* system. The two factors are also interlinked as the *hukou* system constrains those from rural areas from migrating to urban areas to take advantage of the growth and opportunities. Previous studies have focused almost exclusively on income inequality. They find that prior to the implementation of market reforms income distribution among urban residents was fairly uniform due to state control on urban wages and slow-changing pay scales. However, because of various rural reforms in the 1970s and early 1980s and the *hukou* system, rural income distribution varied substantially (Rozelle and Boisvert, 1995; Lu and Wang, 2002). Using data from the China Statistical Yearbooks and applying the Theil decomposition method, Lu and Wang (2002) find that rural-urban inequality widened over the period 1978-1998.

The unique *hukou* system, introduced in China in 1958, lies at the crux of the rural-urban inequality debate. The original intention of the *hukou* system was to ensure minimum agricultural output and job security in cities. However, over the decades it was used to prevent free movement of labor from rural to urban areas as well as to determine eligibility for benefits across various social programs including education. Even though post-1978 economic reforms have urged the government to reform the *hukou* system, its essential features remain the same. The reforms have eased restrictions on rural-urban migration and enabled migrants to gain temporary and conditional residence in urban areas. However, the migrants

have largely been left out of social protection programs and entitlements for which urban *hukou* holders are eligible such as employment in urban government jobs, healthcare, housing, and public education. The discrimination against migrants essentially rendered them second class citizens taking up jobs shunned by the urban residents and living in sub-standard conditions (Knight and Song, 1999; Knight and Song, 2005). Given that the “floating population” or migrants without local household registration has been on the rise, this is a serious development concern. To get a sense of the magnitude, the floating population was estimated to be around 88.5 million in 1995 and increased to about 121 million according to the 2000 census. The 2010 census estimated the floating population to be around 221 million, an increase of approximately 83 percent from the 2000 figure (Chan and Zhang, 1999; Liang and Ma, 2004; Feng, 2010).

A huge gap remains, however, in examining inequality specifically among rural-urban migrants or the floating population in China when compared to rural and urban residents. In a recent paper, Sicular et al. (2007) argue that it is imperative for income inequality measurements in China to account for migrants as migration is an important mechanism in narrowing the rural-urban income gap. They further argue that excluding the migrants can cause measurement errors as it can cause an overstatement of the rural-urban income gap. They use the 1995 and 2002 Household Income Surveys conducted by the Chinese Academy of Social Sciences (CASS) and recalculate income inequality after including migrants. They find that in 2002 the rural-urban gap contributes about 25 percent of overall inequality, as compared to estimates of 50 percent or more in most studies. Further, they find that the contribution of location in determining overall inequality declined between 1995 and 2002 indicating the positive effects of spatial mobility.

In addition to measurement of income inequality, an interesting line of research undertaken on inequality in China is assessing the perceptions of the Chinese people on inequality and distributive justice. The 2004 China National Survey on Inequality and Distributive Justice, led by Harvard sociologist Martin King

Whyte, is a project aimed explicitly at providing an overview of how Chinese adults feel about patterns of inequality and mobility opportunities in their society. Of the 3,267 respondents in the survey, which included migrants, 59.2 percent felt that denying urban household registration to migrants is unfair. When asked about practices such as preventing migrant children from attending urban public schools unless they pay special high fees and forbidding the hiring of migrants for a range of urban jobs, 76.8 percent of the respondents felt that they are unfair. Further, 66.9 percent of the respondents felt that exclusion of rural-urban migrants from welfare benefits enjoyed by the urban residents is unfair. This antipathy towards *hukou*-based discrimination was not concentrated among people of rural origin. The survey found that even urban residents recognized the unfairness of institutionalized discrimination though their disagreement was less strong as compared to migrants (Whyte, 2010).

Although discrimination against migrants continues to exist in urban areas in China, the well-being effects of rural-urban migration are somewhat mixed. Using the 2004 China National Survey on Inequality and Distributive Justice, Feng (2010) finds that the migrants themselves remain optimistic and report more gains from their decision to migrate.¹ He finds that 75 percent of the migrants reported that their lives at the time of the survey (in 2004) were better than five years ago as compared to 59 percent of urban and 66 percent of rural respondents. Nearly 66 percent of the migrants responded that they were more optimistic about the future as compared to roughly 60 percent of the urban and rural respondents. It may seem counterintuitive that the migrants, who are relatively disadvantaged reported being most optimistic. Feng (2010) argues that this is likely due to the fact that migrants evaluate their current status with reference to their situation when living in rural areas. For them, the opportunity to move to cities and engage in non-agricultural production plausibly overrides the disadvantages of not holding urban residency. In line with the findings of Whyte (2010), Feng finds that compared to urban or

¹Migrants are defined as individuals who held rural or agricultural *hukou* but resided in an urban area at the time of the survey.

rural residents, migrants felt more strongly about the injustice done to them with regards to obtaining urban *hukou*, allowing their children to attend urban public schools, and receiving benefits that only urban residents are currently entitled to.

While Feng (2010) finds that migrants on average are more optimistic about their well-being, there is evidence that suggests otherwise. Using 2002 Chinese Household Income Project data, Knight and Gunatilaka (2010) find that on average migrants report lower happiness when compared to rural residents. They test various hypotheses and conclude that unsatisfactory conditions in which the migrants live, insecure nature of their employment, and rise in aspirations due to comparison with urban households all explain the low mean happiness levels of rural-urban migrants in China.² Using the same data, Jiang et al. (2011) find that income inequality between migrants without local urban *hukou* and urban residents is negatively correlated with happiness of migrants. However, when between-group income inequality is measured for three groups - rural migrants without local urban *hukou*, residents born in urban areas, and urban residents who have acquired urban *hukou* at some point in the past - the acquired urban residents are the most unhappy with inequality. This suggests that even though they are more advantaged as compared to migrants without local urban *hukou* they still identify with the migrant group and are more inequality averse. Thus, inequality among migrants in urban China does have serious repercussions for their well-being.

3.2.2 Inequality of opportunity

According to the 2006 World Development Report, inequality of opportunity is of significance to policymakers mainly because it is intrinsically unfair and can lead to social instability and conflict. Further, shifting the debate away from income redistribution towards opportunity redistribution is likely to gain more political consensus and also provides a better direction for formulating policy and

²They also find that inherent disposition to be happy or unhappy is not a predominant explanatory factor for the low mean happiness scores of migrants.

interventions (Barros et al., 2009). The idea of equality of opportunity is to level the playing field such that each individual has, in principle, the potential to achieve and maximize their desired outcomes.

Normative frameworks proposed by egalitarian philosophers such as Rawls (1971), Dworkin (1981a, 1981b), and Sen (1985) posit that distributive justice does not necessitate the equality of individual outcomes, but rather it requires that all individuals have *equal opportunities* that lead to certain outcomes of interest. Borrowing from these egalitarian theories, Roemer (1993, 1998) proposes and articulates that society should indemnify people against poor outcomes that are the consequences of causes that are beyond their control (*circumstance*), but not against outcomes that are the consequences of causes that are within their control (*effort, personal will, or ambition*). Roemer (1998) identifies five words that constitute the vocabulary of equality of opportunity - *circumstance, effort, type, objective, and instrument*. *Objective* is the kind of outcome or well-being or advantage to achieve which the individual wishes to equalize opportunities. *Circumstance* is the set of social or environmental influences, which is beyond the individual's control and which affects his or her chances of acquiring the objective. *Effort* is the autonomously chosen action, which is within the individual's control and which if applied in greater amounts will increase the degree to which the individual achieves the objective. *Type* is the set of individuals with the same circumstances and the *instrument* is the policy intervention used to realize the equalization. Formally, an individual's production function using Roemer's (1998) framework can be represented as:

$$v^i = v(e^i, C^{t(i)}, x^{t(i)}) \quad (3.1)$$

where, v^i is the individual i 's achieved value of objective, e^i is the level of i 's effort, $t(i)$ is the type i belong to, $C^{t(i)}$ is the circumstance of i 's type, and $x^{t(i)}$ is the value of the policy intervention that i 's type enjoys.

Drawing upon Roemer (1998) it can be argued that inequality on the basis of

educational attainment is justifiable, however inequality on the basis of gender, race, or place of birth is unjustifiable. A challenge that remains however is to empirically assess equality of opportunity, and identify and operationalize variables that count as circumstance and effort, especially when factors such as effort are unobservable. Much of the empirical work done on equality of opportunity focuses on family background as the circumstances and on income or earnings as the outcome. In their study on inequality of opportunity in Brazil, Bourguignon et al. (2007) find that five observed circumstances - father's education, mother's education, father's occupation, race, and region of birth - affect inequality in earnings. Ferreira and Gignoux (2008) examine inequality of opportunity for labor earnings in six Latin American countries and essentially find the same pattern. Parental education emerges as the most important contributor to inequality of opportunity. Cogneau and Mesple-Somps (2008) examine inequality of opportunity for income in five sub-Saharan countries in Africa and find that in addition to family background characteristics, between country differences, mainly, social origins and history of colonization have a significant impact on intergenerational differences in income. There exists a huge gap in studies on inequality of opportunity in China. Zhang and Eriksson (2010) provide the first available evidence on inequality of opportunity for income in China. They find that parental income and parents' type of employer explain two-thirds of the inequality of opportunity for income while parental education and region of birth do not significantly contribute to individual advantage.

Yet another challenge that faces empirical assessment of inequality of opportunity is the lack of an established measurement indicator or index. Most studies apply the Theil index to decompose the effect of various circumstances on outcomes that are essentially continuous such as income, consumption, and educational achievement (Bourguignon et al., 2007; Barros et al., 2009; Zhang and Eriksson, 2010). Recent work by Barros et al. (2009) has resulted in the development of the Human Opportunity Index (HOI), which measures inequality of opportunity

for discrete outcomes for children. The HOI measures the inequality for access to basic opportunities for children such as access to education, health, sanitation, and other basic services with the idea that a just society should attempt to equitably supply these basic opportunities to as many children as possible. Where it is found that distribution is unequal, the index suggests that more opportunities should be created for the disadvantaged groups. The HOI has advantages over other measures in that it focuses on a limited number of basic opportunities that can be observed, tracked, and for which data are usually available. Further, by focusing on children it invalidates the issue of endogeneity that concerns measurements of inequality of opportunity. For instance, in the case of an adult, access to water might depend on the choice of location, which is likely within her control and therefore we cannot attribute it entirely to circumstance. However, for a child, access to water is entirely dependent on the choices made by her parents and therefore are exogenous to her. Another argument in favor of the HOI is that early life opportunities for children are quintessential for development later in life and can provide a better ex-ante outlook of intergenerational upward mobility.

3.3 Data and methodology

3.3.1 Data description

This study uses data from the 2002 Chinese Household Income Project (CHIP) conducted by the Institute of Economics, CASS, which contains data on 20,632 urban residents (from 6,835 urban households); 37,969 rural residents (from 9,200 rural households); and 5,327 rural-urban migrants (from 2,005 migrant households). There is very little panel element in the data and none for the variables of interest.³ The urban and rural samples are sub-groups of the official census. However, the census does not cover rural *hukou* holders residing in urban areas, that is, the rural-urban migrants. Therefore, a separate methodology was followed to identify

³The CHIP surveys were also conducted in 1988 and 1995. However, they do not contain samples of migrants.

the migrant sample. The migrant households were selected from all the provinces but not from all the cities in the urban survey. As rural-urban migrants are concentrated in large cities, all the provincial capital cities and one or two middle-sized cities in each of the provinces, were selected for the migrant survey. Owing to the sampling frame limitations, the migrant sample was drawn from migrant neighborhoods consisting of shared or rented apartments.⁴ This is advantageous for this study as the sample contains a substantial number of migrant families with children. Migrants living on construction sites or in factories were not included in the sample. The migrant survey contains a rich set of indicators that include demographic information of each member, income, consumption, assets, housing, health status, education, and subjective well-being (Sicular et al., 2007; Knight and Gunatilaka, 2010).

Even though the urban and rural samples are sub-groups of the census, the CHIP 2002 under-sampled urban residents. To make the samples representative, I weight the analyses such that the urban and rural population shares equal those in the population in each province according to the 2000 official census. For weighting the migrant population, I use the population proportions of “residents living in urban areas for more than six months but having permanent household registration elsewhere” in each province from the 2000 census data as weights. For analytical purposes, I only use sub-groups of children aged 0 to 16 years across urban, rural, and migrant households, which results in a total of 11,625 observations - 2,834 urban children; 7,528 rural children; and 1,263 migrant children.

3.3.2 Methodology

To examine the degree of inequality of opportunity in access to basic opportunities among migrant and non-migrant (urban and rural) children, I follow the methodology for computing the HOI laid out by Barros et al. (2008, 2009) and adapted

⁴Urban resident committees register apartments making them easier to identify when drawing the sampling frame.

by Singh (2011). The HOI is a composite index that combines - (i) to how many children are the basic opportunities available, that is, the coverage rate, and (ii) how equitably are the basic opportunities distributed conditional on exogenous circumstances. To measure equity a dissimilarity index or the *D-Index* is used. Here, it is also important to clarify the definition of a “basic opportunity”. A basic opportunity is an indicator that - (i) influences current and future outcomes such as income and wages (ii) is critical for the development of the individual (iii) is exogenous to the individual but endogenous to the society, that is, it can be modified through policy intervention and (iv) is likely negatively influenced by circumstances.

The key component of the HOI used to estimate inequality of opportunity is the *D-Index*. It measures the dissimilarity in access for a given basic opportunity for groups defined by the circumstances (such as migrant status, parental education, parental income, gender, and so on) compared with the average access rate for the given basic opportunity for the population as a whole. The *D-index* is the weighted average of all such access probability gaps, that is, the weighted average of absolute differences between group-specific access rates p_i and the overall average access rate \bar{p} . If the equal opportunity principle is consistently applied, an exact correspondence between population and opportunity distribution should be observed. The *D-index* ranges from 0 to 1 (0 to 100 in percentage terms), and in a situation of perfect equality of opportunity, D will be zero. For instance, if migrant and rural children are the two subgroups and p_m is the average probability that a migrant child will have access to education which is less than \bar{p} , that is, the average probability in the entire population that a child will have access to education, then it suggests that migrant children have much lower probability of having access to education than their rural counterparts. The *D-index* can be interpreted as showing the fraction of all available opportunities that needs to be reassigned from better-off groups (groups whose access rate is higher than the access rate for the population) to worse-off groups (groups whose access rate is lower than the access rate for

the population) to achieve equal distribution of the opportunity for all. It is important to clarify that the *D-index* does not imply that opportunities be taken away from the advantaged group to be redistributed to the disadvantaged group. The definition refers to reallocation in the statistical sense where opportunities need to be reassigned to produce a distribution in the disadvantaged group that matches that of the advantaged group. In the policy sense however, improving the *D-index* would mean increasing access and creating opportunities for the disadvantaged group through targeted interventions to bring them up to par. It is also important to note that the *D-index* is insensitive to a balanced increase in access rate, which means that the new opportunities are distributed among circumstance groups in the same way as the preexisting distributions are.

The HOI, represented by O , is conceived as $O = \bar{p}(1 - D)$, where the coverage rate \bar{p} is discounted if D is high, that is, the basic opportunities are inequitably distributed. Intuitively, an increase in coverage \bar{p} will improve the HOI. But in addition, because the HOI is also distribution-sensitive, it will improve further if the increased opportunities benefit the disadvantaged groups, that is, D is reduced. Despite its distributive sensitivity the HOI is Pareto-consistent in that an increase in the number of basic opportunities available to any group will always increase the index. Again, it should be noted that the definition of HOI refers to availability and equitable distribution of opportunities in statistical terms. From a policy perspective, improving HOI would mean increasing access to and creating more basic opportunities for the disadvantaged group.

3.3.2.1 Computing the D-index and HOI

Adopting the approach of Barros et al. (2008, 2009), the *D-index* is computed using a three-step procedure. First, I use the following separable logistic regression specification to estimate the conditional probability of access to a given basic opportunity.

$$\text{Ln} \left(\frac{P(I = 1 \mid x_1, \dots, x_m)}{1 - P(I = 1 \mid x_1, \dots, x_m)} \right) = \sum_{k=1}^m h_k(x_k) \quad (3.2)$$

where, for each child i , $I_i = 1$ if the child has access to the basic opportunity and $I_i = 0$ otherwise; x_k denotes the vector of variables representing k -dimension of circumstances, hence $x = (x_1, \dots, x_m)$. The circumstances included are described in subsequent paragraphs. Second, using the predicted probability of access to a basic opportunity for every child, I obtain the average access rate $[\bar{p}]$ and the *D-index* $[D]$ using the following equations.

$$\bar{p} = \sum_{i=1}^n w_i \hat{p}_i \quad (3.3)$$

$$D = \frac{1}{2\bar{p}} \sum_{i=1}^n w_i | \hat{p}_i - \bar{p} | \quad (3.4)$$

where, \hat{p}_i is the predicted probability of access to the basic opportunity for child i and $w_i = \frac{1}{n}$ or the sampling weight.

Once the average access rate and the *D-index* have been estimated, the third step is to compute the HOI $[O]$, which is simply a product of the average access rate and how equitably the access to basic opportunity is distributed across the population under consideration.

$$O = \bar{p}(1 - D) \quad (3.5)$$

Similar to the *D-index*, the HOI also varies between 0 and 1. However, as opposed to the *D-index* for which a lower value implies more equity, a higher HOI is desirable for any society. This is because HOI will be higher only when the average access rate is high and the inequality in access rate is low. I compute the HOI for the full sample and for the three sub-groups - urban children, rural children, and migrant children. Further, the HOI is computed for each basic opportunity and a composite HOI, which is a simple average of the respective HOIs, is also computed.

The variables used to operationalize circumstances in the estimation are gender, province, residence status based on *hukou* (migrant, urban, or rural), minority

status, whether head of the household is a member of the Chinese Communist Party (CCP), household consumption expenditure, father's education (quadratic form also included), mother's education (quadratic form also included), father's health status, mother's health status, whether both parents are present, and number of children in the household.⁵

The variables used to operationalize basic opportunities are whether the child completed primary education on time, whether the child is currently enrolled in school, whether the child has access to safe water, whether the child has access to sanitation, and whether the child has access to electricity. Completion of primary education is used in addition to enrollment because mere enrollment does not reflect quality of education. It is possible that where migrant children are concentrated the quality of schools is extremely poor and also migrant children might face significant interruptions in education due to non-urban *hukou*. In China, typical age for completing primary education is 12 years. For analytical purposes, assuming that there are some children who repeat grades due to poor performance, children whose highest level of completed education was primary before the age of 14 years are considered as "completed primary education on time". Enrollment in school is measured for children aged 6 to 15 years because the Chinese government has mandated primary and junior middle school education, which is typically for nine years starting at age six. Further, there is empirical evidence that access to safe drinking water, sanitation, and electricity is highly and positively correlated to child health (Pant, 1991; Wang, 2003; Fay et al., 2005; Daka and Ballet, 2011). Prevention of diseases and mortality among children directly impinge upon their long-term health and development. Access to electricity on the other hand allows children to improve their study routines such as doing their homework in the evening consequently improving their school performance.

Inequality in access to and distribution of housing condition-related basic oppor-

⁵Consumption expenditure is used instead of household income because it is easily identifiable and comparable across households unlike income, which has multiple sources, especially for rural households.

tunities is measured for children aged 0 to 16 years. The CHIP did not ask direct questions for all the housing conditions and therefore proxy questions have been used. For water, urban households were asked about the situation of their drinking water on a 5-point scale with higher values representing better service. Households who responded 3, 4, or 5 were classified as having access to safe drinking water. Migrant households were asked whether they had a kitchen in the household and not having a kitchen was used as a proxy for lack of direct access to safe water. Rural households were classified as having access to safe water if they had a tap, motor-pump, or natural well in the house or courtyard. For sanitation, urban households were asked about their situation of sanitation on a 5-point scale with higher values representing better service. Households who responded 3, 4, or 5 were classified as having access to sanitation. Migrant households were directly asked whether they had or lacked sanitary facilities. Rural households were asked about the building material of their house and houses that were built from weak materials such as clay or straw were classified as not having access to sanitation.⁶ For electricity, all households were asked whether they had electricity or electric lighting.

The difference in the variables used to identify access to basic opportunities, specifically for housing condition-related opportunities, is likely to result in variations in the estimation of inequality. Further, mere access does not mean that the quality of the basic opportunity is good. However, in the absence of uniform variables measuring both quantity and quality across the sub-groups this is the best way forward.

⁶The assumption is that households who have built their houses using weak materials are very poor and do not have the resources to build toilets outside their house. On the other hand, households who built their houses using concrete or bricks were well-off enough to have built a toilet either inside or outside their house. This is common practice in rural areas in many developing countries.

3.3.2.2 Examining the changes in HOI over time

A limitation of the dataset under analysis is its cross-sectional nature. The absence of migrant samples in the previous rounds (1988 and 1995) of the CHIP makes comparisons problematic. The 1995 CHIP asks urban individuals the year in which they obtained urban residence status. In the absence of a migrant sample, very recent *hukou* converters could plausibly have been used as a proxy. However, there are only 73 observations for those who obtained urban residence status in 1995.⁷ Further, within an urban household the year of obtaining urban residence status differs for grandparents, parents, and children making identification of proxy migrants more complex. Given these limitations, the strategy I adopt to examine temporal effect of being a migrant on HOI is dividing the migrant sample based on “number of years of residence as a migrant in an urban area”. I use three cut-off points to classify the migrants - those residing for less than 3 years classified as recent migrants, those residing for 3-10 years classified as medium-term migrants, and those residing for more than 10 years classified as long-term migrants. This results in 294 children from long-term migrant households, 715 children from medium-term migrant households, and 254 children from recent migrant households. I then decompose the differences (proxy for changes over time) using the property of additive decomposability of the HOI into the scale effect, that is, change in average access rate, and distribution effect, that is, change in distribution of the basic opportunity across the sub-groups. The decomposition can be written as follows:

Let O_1 , O_2 , and O_3 represent the HOI for long-term, medium-term, and recent migrants respectively. The average access rates for the three sub-groups are p_1 , p_2 , and p_3 respectively, and D -indices are D_1 , D_2 , and D_3 respectively. Then the change in HOI can be decomposed as,

⁷It is appropriate to use *hukou* converters only for 1995 because the survey was conducted between late-1995 and early-1996. *Hukou* converters prior to 1995 would probably have benefited from their status conversion in the one year that passed.

$$O_{n+1} - O_n = \bar{p}_{n+1}(1 - D_{n+1}) - \bar{p}_n(1 - D_n) \quad (3.6)$$

where,

$$\Delta\bar{p} = [\bar{p}_{n+1}(1 - D_n) - \bar{p}_n(1 - D_n)] \quad (3.7)$$

and,

$$\Delta D = [\bar{p}_{n+1}(1 - D_{n+1}) - \bar{p}_{n+1}(1 - D_n)] \quad (3.8)$$

$\Delta\bar{p}$ is the scale effect and ΔD is the distribution effect. The changes in the HOI of children from these three categories of migrants will provide a sense of whether *hukou* reforms and changing attitude towards migrants has had an effect on inequality of opportunity.

3.3.2.3 Testing the association between inequality of opportunity and subjective well-being

In addition to computing the inequality of opportunity for children, I also test the association between inequality of opportunity for children and household subjective well-being. There is empirical evidence that migrants in China are less happy as compared to non-migrants, that is, rural residents who decided not to migrate (Knight and Gunatilaka, 2010). However, whether inequality of opportunity, specifically the HOI, is associated with the low mean happiness levels of migrants remains to be examined. Drawing upon a growing body of literature on the relationship between inequality and subjective well-being, I use subjective standard of living (or relative status), self-reported level of happiness, and feelings of upward mobility as the variables to capture well-being effects of inequality of opportunity on migrant households (Diener et al., 1995; McBride, 2001; Graham and Pettinato, 2002; Graham and Felton, 2006; Graham and Picon, 2009). First, subjective standard of living is measured by asking the question “which group do

you believe your current standard of living belongs to”. Responses are recorded on a 4-point scale ranging from “lowest 25 percent” to “highest 25 percent”. Second, the question asked to measure self-reported happiness is “generally speaking, do you feel happy”. Responses are recorded on a 5-point scale ranging from “not happy at all” to “very happy” recalibrated such that lower figures correspond to lower levels of happiness. And third, feelings of upward mobility are measured by asking the question “compared with living in rural areas, do you think living in urban areas makes you happier” only to migrant households. Responses are recorded on a 3-point scale ranging from “less happy” to “happier”, again, recalibrated.

I estimate the following baseline bivariate OLS regression specification:

$$Y_i = \beta_0 + \beta_1 O_i + \varepsilon_i \quad (3.9)$$

where, Y_i is the specified well-being variable of household i and O_i is the estimated HOI for children belonging to the specific sub-group. Multiple regression models are not estimated as the HOI itself is computed based on household background characteristics and including them as covariates would be redundant (cause collinearity) and bias the the effect of HOI. All well-being variables have been recoded such as a higher value on the scale represents a higher level of well-being.

3.4 Results

3.4.1 *Estimates of inequality of opportunity*

A comparison of the three sub-groups in Table 3.1 suggests that the distribution of children according to their circumstances varies across most variables but is similar across some. Migrant children are younger when compared to their urban and rural counterparts. This is because the age of migrant parents is lower when compared to urban and rural parents. This is also plausibly why the mean health

status of migrant fathers and mothers is better than urban and rural parents.⁸

Parental education, which has been found to be a significant circumstance variable in determining, differs across the sub-groups. Migrant parents are more educated than rural parents, which is likely due to the fact that finding a job in urban areas required slightly higher levels of education and skills. The number of children in the household is highest for the rural sub-group followed by the migrant sub-group. Minority children are concentrated in the rural areas while children who parents are members of the CCP are highest in urban areas. Though some urban households are richer as compared to rural and migrant households, the mean log consumption of urban and migrant households is equivalent.

Analysis based on residence status shows significant disparities in the coverage of some basic opportunities. As observed in Table 3.2, while school enrollment is comparable across all sub-groups, it is the completion of primary school on time that is highly skewed. As compared to 97.29 percent of urban children and 90.90 percent of rural children who completed primary education on time, only 48.30 percent of migrant children completed primary education on time. Among the three categories of migrants, medium-term and recent migrant children have the lowest coverage of completing primary education on time. Housing condition-related basic opportunities also vary greatly by residence status. It is seen from Table 3.3 that the coverage of safe water and sanitation is lowest among migrant children. This is mainly because it was identified from the survey that migrant households either completely lack water and sanitation facilities or share the facilities with other households. Coverage of electricity is nearly universal.

⁸Mean age of fathers in the sample is 48 years, 46 years, and 35 years for urban, rural, and migrant households respectively. Mean age of mothers in the sample is 47 years, 44 years, and 34 years for urban, rural, and migrant households respectively.

Table 3.1 – Descriptive statistics for children by sub-group

Variable	Urban			Rural			Migrant		
	Mean	S.D.	Max	Mean	S.D.	Max	Mean	S.D.	Max
Child is male	0.50	0.50	1	0.55	0.49	1	0.56	0.49	1
Age of child	10.57	4.09	16	11.40	3.89	16	8.53	4.37	16
Minority	0.05	0.23	1	0.17	0.37	1	0.10	0.29	1
Household is member of CCP	0.11	0.32	1	0.09	0.39	1	0.03	0.35	1
Father's education in years	11.63	3.12	23	7.53	2.19	15	8.16	2.49	18
Mother's education in years	10.95	3.09	23	6.17	2.50	16	7.01	2.78	16
Father's health status	3.93	0.83	5	4.07	0.67	5	4.21	0.67	5
Mothers's health status	3.84	0.86	5	3.95	0.71	5	4.14	0.68	5
Two-parent household	0.99	0.18	1	0.96	0.19	1	0.98	0.13	1
Number of children in household	1.09	0.29	3	2.14	1.11	9	1.47	0.61	4
Log of household consumption	9.32	0.51	15.68	8.75	0.57	12.31	9.32	0.53	11.25
Number of observations	2834			7528			1263		

Notes: All means are weighted; Health status is measured on a 5-point scale

Table 3.2 – Coverage (in percentage) of basic opportunities in education

	Enrollment	Primary School on time
Urban	92.39	97.29
Rural	90.48	90.90
Migrant	90.91	48.30
<i>Long-term migrant</i>	94.39	57.41
<i>Medium-term migrant</i>	91.06	43.00
<i>Recent migrant</i>	84.92	50.00
All	90.98	88.96

Table 3.3 – Coverage (in percentage) of basic opportunities in housing conditions

	Water	Sanitation	Electricity
Urban	97.77	94.74	100.00
Rural	83.30	80.28	99.66
Migrant	55.52	57.25	100.00
<i>Long-term migrant</i>	55.75	55.75	100.00
<i>Medium-term migrant</i>	55.49	59.59	100.00
<i>Recent migrant</i>	55.33	52.46	100.00
All	83.79	81.28	99.78

Before delving into the estimates of *D-index* and HOI, it is important to clarify again that the interpretation in the following sections draw upon the definitions of *D-index* and HOI as explained previously and do not imply that the society is a closed loop and the disadvantaged group can be helped only if opportunities or resources are taken away from the advantaged groups. The *D-index* in Tables 3.4 and 3.5, which represents the degree of inequality, suggests striking dispersions across the sub-groups. For migrant children, 15.91 percent of the opportunities for children to complete primary education on time need to be reallocated (in statistical terms) to eliminate differences. This estimate is nearly 15 times that for urban children and 5 times that for rural children. Of interest is the incredibly high degree of inequality for the three categories of migrants. As is seen from the results, children of recent migrants are a lot worse-off than migrant children whose families have been residing in urban areas for longer periods of time. Inequality of opportunity in water and sanitation is again significantly high for migrant children as compared to their urban and rural counterparts. However, the trend of recent migrants being worse-off is not observed for inequality of opportunity in housing

conditions. Long-term and recent migrant children are almost similarly worse-off with regards to water and sanitation.

Table 3.4 – *D-index* (in percentage) of basic opportunities in education

	Enrollment	Primary School on time
Urban	3.45	1.40
Rural	1.91	3.13
Migrant	4.36	15.91
<i>Long-term migrant</i>	3.40	24.73
<i>Medium-term migrant</i>	4.91	21.99
<i>Recent migrant</i>	9.47	45.45
All	1.95	5.24

Table 3.5 – *D-index* (in percentage) of basic opportunities in housing conditions

	Water	Sanitation	Electricity
Urban	1.27	1.82	0.00
Rural	6.56	11.07	0.24
Migrant	15.98	16.24	0.00
<i>Long-term migrant</i>	23.58	26.08	0.00
<i>Medium-term migrant</i>	14.95	13.09	0.00
<i>Recent migrant</i>	21.83	24.06	0.00
All	7.80	9.71	0.17

When coverage and inequality of opportunity are combined into the HOI, stark variations are again observed across the sub-groups as is seen in Tables 3.6 and 3.7. With respect to completing primary education on time, only 40.61 of all opportunities needed to ensure universal access are both available and allocated equitably (that is, access and distribution in statistical terms) for migrant children. This is nearly half when compared to the opportunities available and equitably distributed for urban and rural children. Within the migrant sub-group, only 27.27 percent of needed opportunities for universal completion of primary education on time are available and distributed fairly for children of recent migrants, much less than children of long-term and medium-term migrants. Similarly, for water and

sanitation, opportunities available and equitably distributed are significantly less for migrant children as compared to urban and rural children. Further, within migrants, opportunities in sanitation are the least for children of recent migrants and opportunities in water for them is also low.

Table 3.6 – HOI (in percentage) of basic opportunities in education

	Enrollment	Primary School on time
Urban	89.20	95.92
Rural	88.74	88.06
Migrant	86.95	40.61
<i>Long-term migrant</i>	91.18	43.21
<i>Medium-term migrant</i>	86.59	33.54
<i>Recent migrant</i>	76.88	27.27
All	89.21	84.30

Table 3.7 – HOI (in percentage) of basic opportunities in housing conditions

	Water	Sanitation	Electricity
Urban	96.54	93.02	100.00
Rural	77.84	71.39	99.42
Migrant	46.65	47.95	100.00
<i>Long-term migrant</i>	42.61	41.21	100.00
<i>Medium-term migrant</i>	47.19	51.79	100.00
<i>Recent migrant</i>	43.25	39.84	100.00
All	77.25	73.39	99.61

It is clear from the analysis so far that migrant children consistently rank lower across different opportunities (except for access to electricity, which is nearly universal for the entire population). This is reflected in the overall HOI, which is the simple average of the HOI of each basic opportunity, and can be interpreted as the proportion of available opportunities that has been distributed according to the principle of equality of opportunity. A higher overall HOI indicates more equality. It is seen from Table 3.8 that there is uneven progress in ensuring equality of opportunity across the sub-groups. While 84.75 percent of all the available basic

opportunities are equally distributed among the entire population of children, only 64.43 percent are equally distributed for migrant children. Within migrants, only 57.45 of all the available basic opportunities are equally distributed for children of recent migrants.⁹

Table 3.8 – Overall HOI (in percentage) of basic opportunities

	Coverage	D-index	HOI
Urban	96.44	1.59	94.93
Rural	88.92	4.58	85.09
Migrant	70.40	10.50	64.43
<i>Long-term migrant</i>	72.66	15.56	63.64
<i>Medium-term migrant</i>	69.83	10.99	63.82
<i>Recent migrant</i>	68.54	20.16	57.45
All	88.96	4.97	84.75

Notes: Figures are simple averages of each component across each basic opportunity

Having examined the inequality of opportunity for children by residence status in China, it is imperative to determine what proportion of it is in fact caused by where households decide to reside. For this purpose the *D-index* was computed using only one circumstance variable in each specification. It is observed from Table 3.9 that indeed residence status contributes most to the inequality in completing primary education on time and significantly highly to inequality in water and sanitation. Further, it is observed that not only whether the child is from a migrant household, but also where the parents decide to migrate that results in significant inequality. Province of residence contributes most to the inequality in enrollment, water, and sanitation. Part of explanation for this lies in the unequal development in China typical in countries experiencing rapid economic growth.

⁹For purposes of comparison, Barros et al. (2009) find that in Latin America, Chile has the highest HOI of 91 percent across the same set of basic opportunities. The HOI for China as a whole is comparable to Argentina (88 percent), Costa Rica (86 percent), Venezuela (86 percent), Uruguay (85 percent), and Mexico (82 percent).

Table 3.9 – Overall *D-indices* (in percentage) for basic opportunities by circumstance

<i>Residence status</i>	Enrollment	Primary education on time	Water	Sanitation	Electricity
<i>Province of residence</i>	0.21	3.76	4.11	4.09	0.00
Gender	1.55	2.17	4.67	7.06	0.19
Minority	0.25	0.24	0.57	0.09	0.02
Member of CCP	0.38	1.09	0.97	4.09	0.10
Father's education	0.09	0.00	0.47	0.50	0.00
Mother's education	0.24	1.60	2.52	4.28	0.02
Father's health status	0.32	2.00	3.35	4.23	0.04
Mother's health status	0.01	0.02	0.35	0.61	0.01
Two-parent household	0.17	0.05	0.63	0.46	0.01
Number of children in household	0.17	2.26	4.04	3.73	0.03
Log of consumption	0.14	0.63	1.38	1.68	0.01
	1.24	1.12	1.05	2.87	0.02

Notes: *D-indices* have been computed using only on circumstance in each specification to estimate its contribution

A positive observation, as seen in Table 3.10, is that long-term migrants are better off as compared to recent migrants suggesting that time of residence in urban areas along with *hukou* policy reforms likely have a positive effect on access to basic opportunities for children. A decomposition of change in HOI across migrant categories reveals that the positive effect is partially due to an increase in available opportunities and partially due to improvement in distribution, though the changes are not consistent. An increase in both availability and distribution is observed for enrollment and sanitation but not for the other basic opportunities indicating that a lot remains to be desired from social policy in China.

3.4.2 Association between inequality of opportunity and subjective well-being

A look at the mean well-being levels by residence status sub-groups in Table 3.11 reveals that migrants report the lowest levels of well-being. Interestingly, rural households report the highest levels of subjective standard of living and happiness when compared to urban households. Knight and Gunatilaka (2010) and Knight, Song, and Gunatilaka (2009) have attributed this to reference group effects. They argue that rural households are happier because they have limited information sets and narrow reference groups. Further they argue that migrant households compare themselves to their new reference group, that is, urban households, and have higher aspirations, which make them less happy. Among the sub-group of migrants, long-term migrants report themselves to be the happiest and have better subjective standard of living and upward mobility as compared to migrants who have lived in cities for shorter periods of time. While this might be due to genuine improvement in their standard of living and opportunities it might also be argued that this is due to “adaptation” (Graham, 2011). Long-term migrants might be happier because they have adapted to the poor living conditions and discrimination

Table 3.10 – Decomposition of change in HOI (in percentage) of basic opportunities

	Long-term migrant	Medium-term migrant	Recent migrant	ΔO	$\Delta \bar{p}$	ΔD	ΔO	$\Delta \bar{p}$	ΔD
	O_1	O_2	O_3	$O_2 - O_1$	$O_2 - O_1$	$O_2 - O_1$	$O_3 - O_2$	$O_3 - O_2$	$O_3 - O_2$
Enrollment	91.18	86.59	76.88	-4.59	70.02	29.98	-9.71	60.10	39.90
Primary education on time	43.21	33.54	27.27	-9.67	112.17	-12.17	-6.27	-87.08	187.08
Water	42.61	47.19	43.25	4.59	-4.31	104.31	-3.94	3.51	96.49
Sanitation	41.21	51.79	39.84	10.58	26.84	73.16	-11.95	51.86	48.14
Electricity	100.00	100.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00

Notes: $\Delta \bar{p}$ refers to the scale effect and ΔD refers to the distribution effect

and have developed a collective tolerance for the “bad equilibrium”.

Of particular interest is the association between subjective measures of well-being and HOI. While previous studies by Knight and Gunatilaka (2010) and Knight, Song, and Gunatilaka (2009) find that migrants are less happy as compared to their rural counterparts they do not examine the specific role of inequality of opportunity in driving this unhappiness or lower subjective well-being. The results in Table 3.12 fill this gap and provide an insight into whether reduction in inequality is associated with increased subjective well-being. The table summarizes the bivariate association between HOI and three separate dependent variables - subjective standard of living, happiness, and upward mobility - for all households and the migrant sub-group. The results suggest that an increase in HOI, that is, opportunities available and fairly distributed for children, is positively and significantly associated with subjective standard of living for the full sample as well as for the sub-group of migrants. Further, an increase in HOI is positively and significantly associated with happiness but it does not hold when I examine only the migrant sub-group. The insignificant relationship between HOI and happiness is counterintuitive to the hypothesis that an increase in HOI should be positively correlated with happiness of migrants. It is not entirely clear why this might be. A possible explanation is “adaptation”, where over time adversity does not significantly affect absolute happiness (Graham, 2011).¹⁰ When asked about feelings of upward mobility, migrants seem to be well aware of how their lives compare in relative terms to those in rural areas as is observed from the significant and positive association between HOI and feelings of upward mobility. It implies that migrants believe that their lives are much better in urban areas as compared to living in rural areas. The positive and significant association between HOI and subjective standard of living as well as upward mobility suggests that

¹⁰Graham (2011) finds that respondents in conflict-ridden Afghanistan reported themselves to be as happy as Latin Americans but fared lower on the “best possible life” question.

Table 3.11 – Mean subjective well-being by sub-groups

Variable	Urban			Rural			Migrant		
	Mean	S.D.	Max	Mean	S.D.	Max	Mean	S.D.	Max
Subjective standard of living	2.23	0.64	4	2.95	0.71	4	1.77	0.65	4
Happiness	3.48	0.85	5	3.67	0.87	5	3.37	0.81	5
Upward mobility	-	-	3	-	-	3	2.53	0.56	3
Number of households	6808			7817			1998		
Variable	Long-term Migrant			Medium-term Migrant			Recent Migrant		
	Mean	S.D.	Max	Mean	S.D.	Max	Mean	S.D.	Max
Subjective standard of living	1.84	0.65	4	1.75	0.66	4	1.68	0.64	4
Happiness	3.41	0.84	5	3.35	0.78	5	3.35	0.86	5
Upward mobility	2.61	0.53	3	2.50	0.56	3	2.38	0.60	3
Number of households	662			1122			214		

Notes: All means are weighted.

reducing inequality of opportunity could be a possible policy goal to improve the well-being of migrants.

Table 3.12 – Summary of bivariate regression estimations: Association between HOI and subjective well-being

Independent variable: HOI	All Households	Migrant Households
Dependent variables	(1)	(2)
Subjective standard of living	0.008*** (0.001)	0.026*** (0.008)
Happiness	0.002*** (0.001)	0.010 (0.010)
Upward mobility	- -	0.038*** 0.007
Observations	16598	1992

Notes: Bivariate OLS estimates. Robust standard errors in parentheses. Estimates are weighted using sampling weights. Dependent variables are 4-step subjective standard of living, 5-step happiness, and 3-step upward mobility. Mobility question was asked only to migrant households.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

3.5 Why are migrant children disadvantaged?

Clearly, the empirical evidence shows that there is a high degree of inequality of opportunity for children in China with urban children at one end of the spectrum and migrant children at the other. Further, an analysis of the contribution of each circumstance reveals that residence status and province contribute significantly to the inequality of opportunity for migrant children. Inequality of opportunity exists not only in education but also in safe and conducive living conditions, which are essential for future development and mobility. The disadvantaged situation of migrant children and the contribution of residence status and province of residence in widening the opportunity gap highlights that the *hukou* system in China is a serious barrier for the human development of migrants. And this is further complicated by local laws of different urban areas.

Let us begin by examining the inequality of opportunity in education. Even though the 1986 law in China guarantees nine years of free and compulsory educa-

tion to all children between six and 14 years of age the differences in educational inequality of opportunity for urban, rural, and migrant children brought forth through this analysis are glaring. Previous studies have found that local government or public schools are only responsible for educating children registered in their areas and have no obligation to educate migrant children. This is mainly because the costs of keeping a child in school for public schools are high and they are often struggling for resources to provide adequate educational facilities for officially registered children. Migrants parents also have to pay “special high fees” to send their children to public schools. With limited access to public schools and private schools being beyond the means of their parents, migrant children are faced with constraints on educational choices. Owing to these constraints migrant parents are forced to send their children to underground or “black” schools, which thrive in migrant neighborhoods but are not registered and recognized by the local government. They mostly exist to fill a supply gap and ensure that migrant children do not slip through the cracks of the system (Kwong, 2004; Liang and Chen, 2007). Kwong (2004) and Yan (2005) have studied the dismal conditions of these “black” schools. They find that the main objective of these schools is to keep costs down and therefore they are housed in abandoned warehouses and buildings with no libraries, reading rooms, laboratories, or sports facilities. Even the teachers in these schools are not fully trained, which significantly affects student performance. Yet another obstacle for migrant children is that many urban local governments have made it mandatory that they return to their villages and hometowns once they complete primary education (Yan, 2005). It is therefore possible that many of them remain in primary school just because their parents do not want them to be separated. It is then no surprise that the results in this chapter find that the rate of completing primary education on time among migrant children is the lowest. Enrollment rates for migrant children are not extremely low possibly because the survey only asks whether the child goes to school and not what type of school she attends. Therefore, even though the child might be attending a “black” school the

parents still report them as being enrolled.

Coming to inequality of opportunity in housing conditions and basic services, it has been documented that migrants are in general disadvantaged and that the *hukou* system outweighs the socioeconomic factors in affecting the living conditions and choices available for housing (Wu, 2002; 2004). Migrants cannot avail of bank mortgages that may enable them to purchase new homes in better neighborhoods. Also, purchasing a house in the secondary housing market in urban China requires local *hukou* so that option is also out of reach for the migrants. Further, subsidized public housing in cities is available only to registered urban residents. With these constraints the migrants often rent private housing or dormitories, which are crowded and lack proper kitchens and sanitary facilities. Interestingly, using a survey of migrant housing conditions in Beijing and Shanghai, Wu (2004) finds that majority of the migrants consider their housing conditions much worse than those back in their villages. This is plausibly the reason why results in this chapter indicate that the inequality of opportunity in housing conditions for rural children is lower than that for migrant children. The impact of inequality of opportunity in housing conditions for children is not limited to lack of space and facilities but extends to their health. It has been found that high incidence of infectious and water-borne diseases such as malaria, hepatitis, and typhoid prevail among migrant children mainly due to the poor and crowded living conditions and poor hygiene (Zheng and Lian, 2005).

Oftentimes, individuals or parents decide to migrate because they believe that their decision will improve their and their families' quality of life. However, given that the disadvantaged situation of migrant children can have a lasting impact on their overall development as well as intergenerational mobility it is not surprising that their households (parents) report low levels of subjective well-being. The results also indicate that improving the HOI for migrant children is positively associated with the subjective standard of living and feelings of upward mobility of migrant households. Though more research is needed for clear policy prescriptions,

reducing the inequality of opportunity for children by improving the outcomes could be a policy tool for improving the well-being of migrants.

3.6 Conclusion

While previous studies have pointed to the institutional and social constraints faced by rural-urban migrants in China, this is the first study to empirically measure the degree of inequality of opportunity for migrant children as compared to urban and rural children. This analysis holds significance because as China continues its rapid growth, the rate of urbanization and consequently the rate of rural-urban migration is expected to go up. The findings of this chapter suggest that migrant children are at a significantly greater disadvantage as compared to urban and even rural children essentially because of their residence or registration status, which deprives them of access to social services. Inequality of opportunity for them exists both in access to education as well as in access to basic services such as water and sanitation that are necessary for life-long development. A further contribution that this analysis makes is to examine the association between inequality of opportunity for migrant children and the subjective well-being of their households to provide an alternative explanation for the low subjective well-being among rural-urban migrants in China. I find that reducing inequality of opportunity for migrant children is not significantly associated with happiness of migrant households. However, it is positively and significantly associated with their subjective standard of living and feelings of upward mobility, implying that improving the outcomes for migrant children could be a policy tool for improving the well-being of migrant households.

The findings underscore that growth rarely goes hand in hand with equality. For China, the experience has been peculiar because of its transition from a relatively egalitarian, centrally planned society to a market-oriented economy. From a policy perspective, complete and immediate overhaul of *hukou* system is difficult and may be even impossible primarily for political reasons. However, inequality of opportunity faced by migrant children due to this institutional barrier is likely to

have detrimental and long-term consequences for migrants and for urban society as a whole. A serious consequence of ignoring migrant children could be the creation of a vicious cycle of intergenerational inequality and urban poverty.

An area of inequality needing immediate attention is the education of migrant children. It has to be understood that education is a basic right and not a privilege and therefore migrant children cannot be denied affordable and good quality education in public schools. The feasibility of implementing these policy prescriptions is not entirely clear but if possible the special high fees for migrant children should be lowered or abolished, access to higher education in the city itself should be made easier, and the underground or “black” schools should be given recognition and provided facilities so that migrant children can be brought into mainstream education. Inequality in housing is a slightly more complex issue. Without a complete understanding of the legal system and housing demand and supply, it is difficult to prescribe precise policy options. However, some of them that do not require a complete revamp of the registration laws could be explored such as ensuring basic tenant rights to migrants so that they can demand better services and landlords are deterred from exploiting their situation, and opening up the secondary housing market to migrants so that they have the option to purchase better quality housing in better neighborhoods. In summary, the central and local governments need to be cognizant of the fact that reducing rural-urban inequality in China in the long-term depends largely on whether migrant children are provided the necessary basic opportunities.

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