THE EFFECT OF EDUCATION ON POVERTY IN KOSOVO AND ALBANIA

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A thesis submitted in partial fulfilment of the requirement of Staffordshire University for the degree of Doctor of Philosophy

December, 2016

In the name of God, the Most Gracious, the Most-Merciful

ACKNOWLEDGMENTS

First of all, I would like to express my sincere thanks to my principal supervisor, Dr. Mehtap Hisarciklilar, for her support, thoughtful guidance as well as her dedication and patience on the way to my PhD. I would also like to also warmly thank Dr. Jana Fiserova and Dr. Ardiana Gashi, for their support and useful comments. Having their support helped me endure with some of the most difficult stages of my research much easier. I am truly indebted to them all. A warm gratitude also goes to Prof. Jean Mangan for her contribution during my early stages of research before her retirement.

My studies in United Kingdom would not have been possible without financial support from Open Society Institute and Staffordshire University to which I am also very thankful. Their scholarship enabled me to face new academic challenges and grow academically but also provided me with an opportunity to meet many new and interesting people some of which have in the meantime become my good friends. My gratitude goes to my family and close friends in Kosovo for their great support and encouragement throughout the time of my research. Special thanks goes to my roommate, Arta Mulliqi, for the good times we had together and her support over the last four years. I also thank the leadership of my home Institution, Group for Legal and Political Studies for their continuous support, encouragement and understanding.

I dedicate this thesis to my parents, for everything they have done to help me become who I am today. Without their endless love, support and encouragement, I would never complete this journey.

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ABSTRACT

Despite the positive economic growth over the last decade, poverty in Kosovo and Albania remains one of the highest in Europe. Both countries have experienced large migration flows which, together with remittances, seem to have been an effective mechanism for mitigating poverty, which would otherwise be even higher. This thesis investigates the determinants of poverty with a specific focus on the effect of education on poverty in Kosovo and Albania using data from the Kosovar Household Budget Survey 2011 and the Albanian Living Standard Measurement Survey 2012.

The review of studies suggests that there is no single unified theory of poverty. Moreover, there is no underpinning study that would fully inform the modelling approaches in this thesis. The economic theory of consumer behavior, duality theory as well as unitary approach provide the theoretical basis for measurement of household welfare. On the other hand, several theories and studies have been concerned with structural relations that affect poverty. According to human capital theory, education leads to increased income and thus decreases the risk of poverty. Literature also highlights the importance of migration, remittances and fertility in relation to poverty but also emphasizes the importance of education with regards to remittances and fertility. A key contribution of this thesis is that, it attempts to put all these theories and approaches together to inform the models to be estimated in this thesis. Ordinary Least Squares and Probit estimation techniques are used to model consumption and poverty while quantile regression is used to gain further insights into how the determinants of household welfare change across the welfare distribution. Some of the factors which influence household poverty are expected to be endogenously related to poverty. In this thesis, this issue is addressed by controlling for the effect of the endogenous variables using pre-determined and exogenous indicators. One of the most important factors affecting household welfare is education. Indicators such as the highest level of education in the household, share of adult members with respective education attainments, and mean years of education of adults are considered in the estimation, in addition to education of the household head (a commonly used education indicator), as they tend to better reflect the impact of education on household poverty.

Considering theoretical and empirical literature on migration, fertility and poverty, it seems appropriate to expect that poverty, remittances and fertility are simultaneously determined; estimating each of the relationships separately would therefore not be appropriate. Hence, another important contribution of this thesis is that it models the three factors within a simultaneous equations system and thus explores the impact of education on poverty via different channels at the same time. For this purpose, Three-stage Least Squares (3SLS) estimation technique is utilized. An advantage of the 3SLS approach is that endogenous variables are allowed to appear on the right-hand side of the equations.

Findings are largely in accordance with theoretical expectations; education is found to be related to increased consumption and reduced poverty in both Kosovo and Albania, and the effect is higher for higher levels of education attained. The Quantile regression results indicate that the positive effect of increased levels of education on consumption is highest for the poorest households in Kosovo, while the same applies to the richest households in Albania. The results also underline the importance of migration and fertility in terms of household welfare in Kosovo and Albania. The 3SLS estimation results confirm our expectations regarding the joint determination of poverty, fertility and remittances. Due to some limitations of the Kosovar dataset however, this analysis is performed using the Albanian dataset only.

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ABBREVIATIONS

CMP - Conditional (recursive) Mixed-Process

DFID - Department for International Development

DHS – Demographic Household Survey

EAR - European Agency for Reconstruction

EU – European Union

FAO - Food and Agriculture Organization

FGT - Foster-Greer-Thorbecke

HBS – Household Budget Survey

ILO – International Labour Organization

INSTAT – Albanian Institute of Statistics

IMF – International Monetary Fund

KAS – Kosovo Agency of Statistics

LSMS – Living Standard Measurement Survey

MDG – Millenium Development Goals

OECD – Organization for Economic Co-operation and Development

ODPM – Office of Deputy Prime Minister

OLS - Ordinary Least Squares

PCA- Principal Component Analysis

RSS- Residual sum of squares

TSS - Total sum of squares

SEM - Simultaneous Equation Model

SUR - Seemingly Unrelated Regressions

UNFPA – United Nation Population Fund

UNDP- United Nation Development Programme

UN – United Nations

WB – World Bank

WHO- World Health Organization

2SLS- Two-Stage Least Squares

3SLS - Three-Stage Least Square

PREFACE

Having declared independence on 17 February 2008, Kosovo still faces several challenges inherited from pre-conflict crises and conflict in 1999. Kosovo has recorded solid GDP growth rates during the post-conflict period, with an average of 4 percent until 2008 mainly stimulated by donor-funded reconstruction efforts and international transfers (World Bank and KAS, 2011). The positive growth rate followed during the 2009-2015 period however, at a lower rate ranging from 2.8 to 4.4 percent with an average of 2.6 percent. A 120 percent increase of capital expenditures in 2008 is considered to have been the main factor that stimulated a GDP growth rate of more than 4 percent in Kosovo in 2008 and even in 2009 when most of the countries in the region faced recession (Ministry of Finance, 2010).

Nevertheless, Kosovo remains one of the poorest countries in Europe and the South-East Europe (SEE) region, with 29.7 percent of the Kosovar population reported to live below the national poverty line in 2011, and an estimated 10.2 percent reported as extremely poor. Moreover, disparities in poverty rates are evident amongst regions. At the same time, Kosovo has recorded underperforming labour market indicators, with very low participation rates and persistently high unemployment rates of above 40 percent during the last decade and 30-35 percent during the 2012-2014 period (KAS, 2015a). Unemployment rate is particularly high among females and youth. In addition, Kosovo has continuously recorded a large trade deficit, with the trade imbalance largely financed by foreign assistance and diaspora remittances. Most of the Government revenues are from tax revenues which are largely border taxes and not income or corporate taxes.

Unlike most of Europe, the population of Kosovo is still growing, albeit at a slower pace. Population is young with more than half the population under 25 years of age whereas only a small share of population is older than 65 years (6%) although, their share has slowly grown over the last years (KAS, 2015b).

Following the collapse of the communist regime at the end of 1990, Albania undertook a series of economic reforms, as well as political and legislative changes to accommodate the market economy and transit into a democratic political system. During the last two decades Albania's economy has improved substantially although many challenges are evident.

A robust average annual rate of growth (at over 6 percent) characterized Albania during the 1998-2010 period. A slowdown in growth was recorded in 2009 due to the 2008 global financial crisis. However, Kosovo, and Albania were the only South Eastern European (SEE) countries to record positive GDP per capita rates in 2009. Fiscal stimulus in 2008 is also considered to have helped mitigate the negative effects of global crises in 2009 in Albania similar to Kosovo (World Bank, 2010). Nevertheless, poverty remains high also in Albania despite decreases in the rate over the last few years.

Albania also recorded underperforming labour market indicators over the last decade more specifically a large share of inactive population, which indicates the high under-utilization of capacities and persistent high unemployment rates especially among female and the youth (INSTAT, 2015). Young workers have difficulties in finding a job and entering the labour market after completing their education in both countries. Lack of alternatives in the formal labour market of both countries due to inability of the economy to absorb the high number of new entrants in the labour market is also one of the main reasons for a certain amount of young workers entering the informal economy.

The population of Albania has experienced a decreasing trend from 1990 after the fall of Communist regime with fertility decline and migration being the main reasons behind the fall. There are indications that population in Albania is also aging compared to 2001 as the share of population aged 65 and over has tripled amounting to around 13 percent of population in 2014 (INSTAT, 2015).

Both Kosovo and Albania are characterized by sizable informal activity. Although there are no official estimates, according to Boka and Torluccio (2013), several estimates on the informal economy in Albania suggest that its size is estimated to be around 30 to 34 percent of the GDP. Riinvest (2013) suggests that informality in terms of lack of declaration of business sales and employees is estimated to be more than 30 percent in Kosovo.

There is a large Kosovar Diaspora, with approximately one emigrant for every five Kosovo residents (UNDP, 2014a) whereas in Albania 45 percent of the Albanian population are estimated to be living abroad (World Bank, 2010). Remittances are one of the main sources of income and are reported to be overwhelmingly used for basic consumption in both countries (UNDP, 2010; INSTAT, 2014). In this context, migration and remittances have

been an effective mechanism for mitigating poverty in Kosovo and Albania, as well as a coping mechanism for disadvantaged households with no or little employment and earning opportunities. The high dependence of households on remittances suggests that poverty rates would be much higher without the safety net provided through migration and remittances.

In both countries, social protection benefits are very limited and no specific family benefits and child welfare schemes are provided.[1] The average amount that families receive in Kosovo is 73 euros as of October 2012. Moreover, families receive an additional 5 euro per each child under age of 18 (UNDP, 2014). Kosovo allocates only 3.7 percent of GDP to social needs, which is the lowest in the region (UNDP, 2010).[2] Similarly, the benefits in Albania range from 600 to 8700 ALL (i.e 4-62€) suggesting that social benefits are largely unsatisfactory in both countries.

Kosovo and Albania were both committed to achieve Millennium Development Goals by 2015, although Kosovo had no formal commitments due to having no seat in the 2000 Millennium Summit considering its international administration being responsible for its governance at that time. To this purpose, Albania and Kosovo have pursued several reforms of the education system, especially in easing access to higher education as well as eradicating poverty. Contrary to expectations, public investments in education[3] and increased school attainment have not been associated with the expected decrease in poverty rates, which may indicate that the poor have not been the focus of education policies.

Although there is a growing interest in research related to correlates of poverty, in the SEE countries context, to our best knowledge to date there is no study concerned with the effect of education on poverty in Kosovo and Albania. This thesis investigates the determinants of poverty with a specific focus on the effect of education on poverty in Kosovo and Albania.

[1] The Albanian Government ratified in 2006 the ILO Social Security Convention with respect to old age, death, sickness, maternity, disability, employment injury and occupational diseases, unemployment and health care branches. Social assistance in Albania includes two main cash social assistance cash benefits. 1) Income support (ndihma ekonomike) which aims in principle to guarantee the minimum standard of living, disability benefits are provided for those with conditions from birth or young age; and 2) a social care system (Law on Social Assistance and Services no. 9355).

[2] The social assistance scheme is the main poverty alleviation tool, paid to families and funded from the general budget. There are two categories of recipients: Category I where no one is capable of work, and/or where the only adult capable of work is looking after an incapable person over 65; and Category II with unemployed adults with a child under 5 or providing full-time care to an orphan.

[3] Although compared to the regional average public spending in Kosovo and Albania (10-12%) is low, between 4.3% and 6.1% of GDP (EIZ, 2008).

The central hypothesis is that education exerts a decreasing effect on poverty (and increasing on consumption) and the effect is higher the higher the level of education attained. Literature also highlights the importance of migration, remittances and fertility in relation to poverty but also emphasizes the importance of education with regards to remittances and fertility. As a result, in addition to its direct effect, education is expected to affect poverty also via other channels. Moreover, the theory suggests that poverty, remittances and fertility are simultaneously determined hence should be treated jointly.

Investigating the determinants of poverty and the effect of education in particular, in Kosovo and Albania is highly relevant. Despite a continuous decline, both countries, over the last decade have recorded double digit poverty rates. Notwithstanding its relevance, the issue of poverty is under-researched in both countries similar to other Western Balkan countries. To the best of our knowledge, to date there is no study that investigates the effect of education on poverty for Kosovo and Albania.

Although no major differences are expected, Kosovo and Albania share a number of similarities and characteristics that make the investigation of poverty determination interesting. Both countries have undergone in-depth restructuring of the economy and have a similar background in terms of labour market characteristics and with similar education systems. They record underperforming labour market indicators – a large share of inactive population (INSTAT, 2015; KAS, 2015), which indicates the high under-utilization of capacities and persistent high unemployment rates. Large scale of informality is a characteristic of both countries. Moreover, the labour market institution set-up is similar as both countries have a minimum wage setting system. Wages are reported to be higher in Kosovo than in Albania which gives indications that labour market rewards education more in the former country than the latter. This gives indication that the magnitude of the effect of education on poverty could be higher in Kosovo than in Albania. One reason for this could be that wages in Kosovo are higher than in Albania. Also, the extended presence of international institutions in Kosovo may constitute an important source of differences in the wages between the two countries. Although the two countries speak the same language, have very similar cultural background and are located in the same region, they use different currencies. Albania uses its local currency Albanian Lek whereas Kosovo has adopted Euro and consequently wages are more sensitive to external influences. All these have important implications regarding the effect of education on household welfare. In addition, both

countries have a long history of migration and large Diaspora which have been of prominent importance in reducing poverty risk and smoothing consumption.

The main contributions of this thesis are as following: a) first, different from many studies in this literature, the selection of independent variables as well as the empirical approach are based on a theoretical framework; b) following the commonly used approach in the literature, initially the thesis estimates determinants of poverty in Kosovo and Albania however, due to expected causal determination of poverty, remittances and fertility, the effect of endogenous variables is controlled by using only pre-determined and exogenous indicators/proxies; c) given the theoretically expected causality between poverty, remittances and fertility estimating each of the relationships separately is not appropriate. As a result, the three decisions are modelled within a simultaneous equations system using 3SLS where they are treated as endogenous; d) in addition to an overall effect of education estimated the first empirical chapter, the effect of education coming from other markets is explored in the second empirical chapter.

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Six key research questions stem from the central aim of the thesis and are as following:

(1) How is poverty defined and measured and which are the most appropriate definitions and measures most relevant for this study?

(2) Are there strong theoretical grounds concerning the relationship between education and poverty? Is there an explicit theory of poverty in economics and does the literature provide a fully articulated conceptual approach to investigate the determinants of poverty?
(3) Given the theoretical suggestions/review, what is an appropriate empirical framework for investigating the impact of education on poverty in Kosovo and Albania?
(4) To what extent have the education levels affected the poverty rates in Kosovo and Albania?
(5) Does the theoretically expected simultaneous determination of poverty, remittances and fertility empirically hold when using appropriate techniques that account for their simultaneous determination? In addition to its direct effect, does education affect poverty via different channels?
(6) Based on the answers to the above questions, what education policy guidelines can be recommended so as to alleviate poverty in Kosovo and Albania? Shall the policy proposals be universal, or is there a need to treat Kosovo and Albania differently?

In investigating the questions listed above, this thesis is organized in seven chapters. Chapter 1 starts with an analysis of the different definitions of these concepts leading to the definition and measurement of poverty adopted in this thesis which is followed in the consequent chapters for investigating the effect of education on poverty in Kosovo and Albania. Poverty is perceived from both broad and narrow perspectives. In the narrowest sense, poverty is defined as lack of income, whilst in the broader sense it is seen as multidimensional, involving other issues, such as housing, health, education, access to services and other resources. As a result, many definitions and measures of poverty have been developed. Poverty has been defined in both absolute and relative terms and the monetary approach has been widely used in measuring poverty mainly due to its simplicity. Following the income/consumption approach, academics, policy makers and international organizations such as World Bank and IMF define poverty by constructing poverty lines. An absolute poverty line is constructed based on the minimum income level needed to meet basic needs[4] and has been widely used in developing countries and also in Kosovo and Albania. Poverty line is set at €1.72 per adult equivalent per day in Kosovo whereas at 35€ per capita per month or around 1.16€ in Albania.

[4] Mainly the per capita recommended daily calorie requirement, plus a non-food component.

Although not a usual approach, Chapter 2 initially provides an empirical literature review followed by theoretical considerations. The review concentrates on issues that are important for development of the model to be used in empirical analysis, as well as identifying factors that have not been investigated empirically and according to theory may be important. Following this discussion, the second part of the chapter focuses on the theoretical aspects considering also those not fully developed in this literature. Initially, it provides a discussion on the measurement of welfare using theories that help explain it followed by the theories related to structural relations that affect welfare. Given that the theory suggests that poverty, remittances and fertility are simultaneously determined, Chapter 2 analyses their co-determination and the mechanism via which education affects poverty. This chapter hence sets the ground for the selection of empirical approach and the variables to be used in the empirical approach that is followed in later chapters.

Following the empirical and theoretical review, Chapter 3 provides a background statistical analysis of these concepts, mainly poverty, education, migration and remittances and fertility. More precisely, it provides the latest trends as well as it analyses the abovementioned relationships using the data. In pursuing to answer the fourth question, in the light of the review and descriptive analysis provided in Chapter 2 and 3, a framework for the empirical investigation of the effects of education on poverty in Kosovo and Albania is developed in Chapter 4. For this purpose, data from the Kosovar HBS 2011 and the Albanian LSMS 2012 are used. Initially, consumption and poverty models are estimated given complementarities deriving from them. Moreover, in order to gain further insights as to how the effect of determinants of household welfare changes across the entire welfare distribution, a quantile model is also estimated. Theory suggests that certain decisions that households make are simultaneously determined, therefore, to control for the effect of endogenous variables, only pre-determined and exogenous variables are used to minimize the endogeneity bias as much as possible.

Following theoretical suggestions in Chapter 2 and aiming to answer question five, Chapter 5 develops a model for the simultaneous determination of poverty, remittances and fertility. Estimating each equation separately would produce inconsistent and biased estimates when the variables are jointly determined. Therefore, the set of simultaneously determined relationships is estimated using simultaneous equation modelling (SEM). The method allows

inclusion of endogenous variables as explanatory in equations. This estimation also enables exploring the impact of education on poverty via different channels. Following the discussion on the methodological approach, selection and measurement of dependent variables and issues related to them, a review of literature on migration, remittances and fertility is provided in order to select independent variables. Chapter 6 presents the descriptive statistics and estimation results for both countries.

Based on the evidence from the empirical analyses, Chapter 7 brings together the main findings of the thesis, identifying the main contributions to knowledge and answers to the six research questions.

CHAPTER 1

POVERTY DEFINITION AND MEASUREMENT

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1.1 Introduction

Due to multidimensional and broad nature of poverty, many definitions and measures of poverty have been developed over the past decades in order to differentiate the poor from the non-poor. Hence there has been much debate about how poverty should be defined and measured and this is linked to its role as a policy driver. Over the last decade, the academic debate on the definitions of poverty was particularly fuelled by the Millennium Development Goals (MDGs) and the poverty reduction targets; taking into consideration that different definitions and measures may entail different interventions and strategies. The aim of this chapter is to explore the first research question by providing an overview of the definition of poverty.

Broader perspectives, rather than simply focusing on the lack of financial resources, have emerged, incorporating different concepts such as the inability to fully participate in society, the capability inadequacy as well as social exclusion. Poverty has been defined in both absolute and relative terms and the monetary approach has been widely used in measuring poverty mainly due to its simplicity, relying on income, consumption and/or welfare measures. Following the income/consumption approach, academics, policy makers and international organizations such as the World Bank and the IMF define poverty by constructing poverty lines.

In order to provide a more detailed view of the definitions used, this chapter is organized as follows: Section 1.2 provides a review of several approaches to define poverty whereas a review of the monetary measures of poverty is provided in Section 1.3. Section 1.4 provides an overview of poverty measurement in Kosovo and Albania. The last section concludes.

1.2 Definition of poverty

The main function of defining poverty is to be able to differentiate the poor from non-poor and later operationalize the definition through measurement. Due to poverty having a very broad and multidimensional nature many definitions and measures of poverty have been developed over the past decades. The literature defines poverty in both absolute and relative terms. According to Lok-Desallien (2002, p.2) "*absolute poverty refers to subsistence below minimum, socially acceptable living conditions, usually established based on nutritional requirements and other essential goods*". Under this approach the living standards are compared to a poverty threshold/line that is held fixed in real terms over time and space – independent of a reference group and is applied equally to every society (Noble et al., 2004). Absolute poverty is most commonly measured by the poverty line estimated using the Cost of Basic Need or Food Energy Intake methodology. According to World Summit for Social Development absolute poverty may be also defined as "*a condition characterized by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information. In other words, it depends not only on income but also on access to social services*" (cited in Noble et al., 2002, p.6). The absolute approach is mainly criticized for the need to revise the poverty line frequently and question the notion of 'absolute' given the perceived standards of minimum requirements for food and access to services may change over time.

Relative poverty is conceptualized by comparison to a reference group, and efforts to understand inequality with regards to allocation of resources. According to the relative definition of poverty individuals are categorized as poor if they have less income/consumption than a reference group in the society. More precisely, "*relative poverty compares the lowest segments of a population with upper segments, usually measured in income quantiles or deciles*" (Lok-Desallien, 2002, p.2) therefore, overcoming the necessity of defining a minimum/basic requirement. This definition of poverty is considered to be closely related to the notion of inequality. In other words, the definition of poor and non-poor depends on the extent of development of the society being analysed thus cannot be applicable to other societies. In addition to simply focusing in lack of financial resources, relative poverty – similar to absolute poverty – can also include wider, non–material concepts of poverty such as the inability to fully participate in society, capability inadequacy, lack of

education and health etc. As currently used, the relative poverty line excludes the possible existence of 'absolute poverty' as this is traditionally understood (Laderchi et al., 2003). Therefore, by using the relative approach it is assumed that the basic functioning such as clothing, shelter and adequate nutrition are generally met. This approach is criticized for being insensitive to growth as it envisages that poverty will not be reduced providing inequality does not change. Relative poverty is generally used in developed countries[5] and the absolute poverty perspective is considered to be more useful for Kosovo and Albania, given their current stage of development, as a considerable share of the population still strives to meet basic consumption needs (World Bank and KAS, 2011).

1.2.1 Monetary approach

The monetary approach has been widely used in measuring poverty, approximated by income or consumption data (Laderchi et al., 2003). The approach is generally used by economists given it is considered to be compatible with the utility maximizing behaviour assumption, that the objective of consumers is to maximize utility and that expenditures reflect the marginal value or utility people place on commodities and assuming total expenditure or income as a proxy for welfare (Ibid). Another reason could be the data availability. More precisely, household income/consumption is regularly measured for households in living standard measurement, household budget or labour force surveys, whereas most other dimensions of poverty are measured infrequently or not at all especially in developing countries.

According to this approach, households are defined as poor if their command over resources - consumption or income - falls below some minimally acceptable level known as the poverty line. In order to account for value of different consumption components, studies in this literature generally use market prices whereas imputations of monetary values are used for items not valued via the market *(*Laderchi et al., 2003; Grosh and Glewwe, 2000*)*. However, use of market prices for the valuation of the consumption or income components requires making the assumption that the existence of the relevant market and/or its prices exists. Using a monetary definition requires making a choice between income or consumption indicators

[5] Relative poverty measures are used to produce poverty figures by EU countries, OECD and several other developed countries.

and one could find arguments for favouring one or the other. The use of a consumption-based absolute poverty line is preferred to an income based for several reasons. Firstly, consumption is generally considered as a better indicator of current well-being, given it can reflect households' efforts to smooth out income fluctuations (Andersson et al., 2006). In addition, it is considered a more appropriate indicator if one is concerned with realized welfare rather than potential welfare (Appleton, 1995; Bruck, 2001). Secondly, during the year, survey respondents can often engage in several income earning activities therefore recalling and netting out costs can be difficult, especially in the case of Kosovo considering the large scale of informal activity (World Bank and KAS, 2011). In particular, due to the large-scale informal sector, under-reporting of incomes for tax purposes is widespread. Therefore, respondents may usually be more willing to report expenditures rather than incomes (Ibid). Also income may overstate or understate the standards of living if measured over short periods of time given significant potential variations in income over time - ie. the seasonality of earnings (Bruck et al., 2007). In addition, in developing countries it is hard to measure income precisely as a relatively high proportion of labour force is in self-employment (Andersson et al., 2006) and households in rural areas may consume agricultural products, produced for self-consumption. Moreover, in some countries, households might consume agricultural products transferred from the relatives/parents etc., which cannot be measured within income. In case of Kosovo and Albania another reason can be the irregular remittance flows, which may not be observed every month but they would reflect on the consumption.

When using the monetary definition of poverty one makes certain assumptions. A key assumption of monetary definition of poverty is that it is considered to be able to take into account all the relevant/related heterogeneity across individuals (Laderchi et al., 2003). Another assumption relates to the issue of seeing poverty as a household or an individual problem. Several measures operationalize monetary measurement of poverty and as it is discussed in more detail in Section 2.3 studies generally assume the household as the central unit and as a result take into account its size and/or composition (Glewwe, 1991; Bruck, 2011; Andersson et al., 2006; Bruck et al., 2007). Some other important assumptions relate to the choice of a poverty line hence the basket of goods that should be taken into account. Literature mainly takes two approaches: a) identifying the poverty line either with respect to a list of basic needs to be fulfilled or b) with respect to some characteristic of the distribution of the welfare indicator chosen (Laderchi et al., 2003; Nunes, 2008). The former is

considered to capture the idea of absolute deprivation whereas the later the relative one. The standard practice in developing countries involves an absolute poverty line and according to Ravallion (1998) two main methodologies to empirically estimate the absolute poverty lines are the Food Energy Intake Method and the Cost of Basic Needs Method. The construction of the poverty lines following these methods involves some judgement on the basket of goods to be included (or to the energy intake they provide) and is restricted to them. However, Laderchi (2000, p.3) argues that despite its criticism for comparative purposes it is useful to adopt measures based on monetary indicators and "*it (also) reflects, in fact, the apparent homogeneity of current mainstream practices, and the underlying tension between theoretical complexity and diversity, on the one hand, and the simplicity of adopting standard measurement practices on the other*".

The tradition of adopting a monetary definition has been criticized constantly, mainly as it measures only one of the several dimensions of poverty. More precisely, monetary approach fails to take into account public resources important for some basic dimensions of human welfare such as nutrition and health and a number of dimensions of the quality of life – i.e consumption of leisure and the ability to live a long and healthy life (Andersson et al., 2006). As a result, broader perspectives - rather than simply focusing on the lack of financial resources - incorporating different concepts such as the inability to fully participate in society (Lister, 2004) and capability inadequacy (Sen, 1999; Wagle, 2002) have been developed. The next subsection briefly discusses other approaches in literature to defining poverty.

1.2.2 Capability approach

The Nobel price economist Amartya Sen offers an alternative perspective in evaluating well-being - defining poverty - known as capability approach, which offers a movement from monetary indicators to non-monetary ones. In other words, Sen takes a step backward from both well-being and income by asking why they in fact matter, arguing that income does not matter in its own right, for rather it is a means to achieve what it matters (Lister, 2004). More precisely, the capability approach focuses on indicators of the freedom to live lives that are valued. According to this approach poverty should be defined as the failure to achieve certain minimal or basic capabilities, where 'basic capabilities' are "*the ability to satisfy certain crucially important functioning's up to certain minimally adequate levels*" (Sen, 1993, p.41). However this approach rejects the monetary approach - the utilitarianism as the measure of welfare - and the utility maximization as a behavioural assumption (Laderchi et al., 2003).

In order to express this idea, Sen uses two key terms: 'functioning' and 'capabilities'. The former term refers to what an individual in fact manages to do or be, and the later denotes what a person can do or be, and both can be expressed by a range of choices starting from elementary nourishment to social elements, such as participation in the life of the community and the achievement of self-respect (Lister, 2004). Money's role in achieving functioning depends on the degree to which goods and services are commoditised, as well as how the individuals manage to convert money into capabilities/functioning (different individual characteristics or the context they live in); allowing for variance in outcome among societies and individuals according to many personal factors such as age, health, disability, body size, etc. (Lister, 2004). Nevertheless, Laderchi et al. (2003, p.15) argues that "*monetary resources remain instrumentally related to the achievement of well-being (or, conversely, poverty), but do not exhaust the causal chain.*"

Operationalizing this approach for poverty evaluation requires dealing with several issues (Laderchi et al., 2003). An essential one relates to the definition of a list of basic capabilities, which is a similar problem to that of the identification of 'basic needs' in the monetary approach. A second issue relates to the translation of the concept of capabilities into something that is measurable considering that capabilities embody a variety of potential outcomes (potential achievements that a person may have) and thus are challenging to be identified empirically. The third issue relates to the need to identify cut off points in the

distribution of capabilities, to differentiate the poor from non-poor which seems to be rather arbitrary and context dependent.

The Human Poverty Index reported as a part of UNDP Human Development Report is a measure of poverty and is considered to reflect Sen's approach (Lister, 2004). According to UNDP human poverty is defined as "… *deprivation in three essential elements of human life…longevity, knowledge and decent standard of living...*" (UNDP, 1997, p.125). The UNDP's human poverty indicators are derived differently for developed, and developing countries in order to better reflect socio-economic differences and also the widely different measures of deprivation in these groups.

1.2.3 Social Exclusion

Another approach evident in literature is the social exclusion definition of poverty which nowadays forms a principal aspect of social policy in the European Union (EU) and has been gradually extended to developing countries via the activities of various UN agencies (Laderchi et al., 2003). The concept refers to the variety of dimensions which marginalise people and reduce their prospects to participate in social or political life (Scutella et al., 2009). Social exclusion has become an important aim of social and economic policy in Europe (Ibid). Indicators normally used to measure the extent of social exclusion relate to education, incomes, health, attachment to the labour market and access to housing and other services.

Social exclusion (SE) is a rather distinct approach in defining poverty as it provides more attention on the social dimensions of poverty, therefore providing a rather relative approach – changing the focus from the individual to the relating group. SE also shifts the policy perspective towards redistribution of opportunities and outcomes. The EU defines social exclusion as a "*process through which individuals or groups are wholly or partially excluded from full participation in the society in which they live*" (cited in Laderchi et al., 2003, p.20). According to Noble et al. (2004) the social exclusion approach is considered as extending poverty to embody the capability to function as a fully participating member of society. The United Kingdom government defined social exclusion as: "*a shorthand term for what can happen when people or areas suffer from a combination of linked problems such as unemployment, poor skills, low income, poor housing, high crime environment, bad health*

and family breakdown" (ODPM, 2004, p.3).

According to Scutella et al. (2009) there seems to be a consensus around the following characteristics of SE:

a) Relativity: individuals are excluded relative to a particular society;

b) Agency: individuals are excluded as a result of the action of an agent/s;

c) Dynamics: exclusion is not only a result of current circumstances but also of future prospects;

d) Multidimensionality; and

e) Major discontinuities: the interpersonal links with the society are divided up to an extent which may be considered irreversible.

Another important characteristic is the neighbourhood dimension which questions the deficient or absent communal facilities. There might be widespread agreement on the need to fight exclusion, but "*fighting exclusion means different things to different people*" (Silver, 1994: p. 544; quoted in Hick, 2012). Given that the SE approach has a multidimensional nature, several indicators - such as housing, rights, education, health, social services – have been developed by institutions such as the EU and by collecting data on several aspects of exclusion/disadvantage on Household Budget or Living Standard Surveys. Nevertheless, existing approaches to measuring social exclusion are subject to certain limitations similar to other approaches (Mathieson et al., 2008). There is lack of a shared definition of social exclusion hence lack of consensus on the number of dimensions and indicators to be considered.

An important issue relates to the difficulties of defining appropriate norms to specify the benchmarks of exclusion and this is in particular challenging in developing countries as there may be conflicts as to what is normal and what is desirable (Laderchi et al., 2003). Therefore, researchers in such countries need to devise their own methods for identifying dimensions and appropriate break points. Another operationalization problem is the aggregation issue as individuals may be deprived in more than one dimension given the multidimensional nature of SE. Due to its endogenous multidimensional nature there could be endogeneity as

particular dimensions may be both a cause and a consequence of social exclusion.

Issues with the data are prevalent with SE measurement as well. An important issue is the different availability of the data across countries and the cost and complexity of data collection. Also there is a risk of excluding particular group due to survey data being too small for analysis or due to them not being reached by the survey.

1.2.4 Participatory approach

The poverty approaches discussed above share a common feature as they are based on the objective approach, in other words they are imposed from outside and do not take into consideration the view of the poor themselves. The participatory approach also known as the subjective approach - which has been pioneered by Chambers (1994; 1997) - emphasizes the importance of poor participating in assessment of reality as well as in defining poverty and its extent. This approach was also adopted by international organizations such as the IMF and the World Bank. In 'Voices of the poor' published in 2000, the World Bank identified five clusters of types of well-being: material, physical, security, freedom of choice and action, and social well-being. However, this categorization of poverty has been criticized given it remains unclear to what extent it reflects and summarizes what poor actually said or if in fact it rather represents the views and perspectives of those who synthesized them (Riddell, 2004).

An important criticism of this approach relates to selection of those that are being asked or the *a priori* identification of the poor, which raises doubts as to whose voices are really heard. The approach may hide diversity as for instance women may be underrepresented and the very poor could be structurally excluded from the community.

The problem in aggregating the views of different individuals across population into one single community view has been one of the arguments used by promoters of objective approaches (Makoka and Kaplan, 2005). In addition, individuals' assessment of their own conditions may be biased as a result of limited information as well as social conditioning. Makoka and Kaplan (2005) also argue for a possibility of an undervaluation as well as overvaluation of food consumption under the subjective approach when compared to the welfare approach, thus leading to contradictory evaluations as to who are the poor.

1.3 Monetary measures of poverty

The headcount index, poverty gap, and squared poverty gap are the most common monetary measures of poverty. These measures are also known in the economic literature as the Foster-Greer-Thorbecke (FGT) family of poverty measures. The poverty headcount ratio (HC) measures the proportion of people that are poor, and is simply the percentage of the population whose consumption or other measures of living standard falls below the applicable poverty line. The poverty gap (PG) (also known as depth) measures the total shortfall of the poor from the poverty line. It is also considered as a measure of the total amount of income/consumption necessary for those classified as poor to go out of poverty. Thus, it can detect changes in welfare that occur below the poverty line, such as households becoming less poor, but not enough to cross the poverty line. Although the PG does not suggest a discontinuity at the poverty line, both HC and PG do not reflect inequalities among the poor therefore, fail to capture differences in the severity of poverty amongst the poor. The squared poverty gap index (also known as poverty severity index) is a weighted sum of poverty gaps (as a proportion of the poverty line), where the weights are the proportionate poverty gaps themselves. The squared poverty gap index takes inequality among the poor into account.

FGT measures of poverty can be expressed as:

$$FGTPI = \frac{1}{N}\sum_{i=1}^{q}\left(\frac{z - y_i}{z}\right)^{\alpha}$$

where N is total population; z denotes the poverty line; y_i the consumption or expenditure of household i, where $y_i, \ldots, y_q < z < y_{q+1} \ldots y_n$ and q denotes the number of the poor in the population. α is a measure of the sensitivity of the index to poverty (poverty aversion) and can be defined as $\alpha \geq 0$. Therefore, if α is set to 0 it indicates the poverty headcount index. Similarly, if α=1, the result is known as poverty gap index whereas if α=2 as the squared poverty gap index.

In the recent years the interest on multidimensional measurement of poverty is continuously growing - generally by developing multidimensional indices. The advocates of such indices

rightly argue that other factors rather than just the command over market goods need to be considered when measuring the magnitude of poverty and informing policy making for poverty reduction given those are not the only one that matters to individual's welfare (Ravallion, 2011). Some examples are the Sen's Index, the Index of Poverty Reduction Failure developed by Kanbur and Mukherjee (2007) - a relative one -, the Human Poverty Index developed by Anand and Sen (1997), etc. However, Ravallion (2011) argues that although poverty has a multidimensional nature it does not necessarily imply that in order to measure it one has to use multidimensional indices but rather a better approach would be to collect multiple indicators of several dimensions of poverty. An example is the United Nations' Millennium Development Goals which includes multiple dimensions of poverty without constructing a single composite index (Ibid). Therefore, in addition to the multidimensional indices, several other measures of poverty that involve both the monetary and multidimensional concepts as Alkire and Foster (2007), Alkire and Santos (2010), Alkire (2011) and Alkire and Foster (2011) have been developed.

1.4 Poverty measures in Kosovo and Albania

1.4.1 Poverty measures in Kosovo

An absolute monetary approach is officially used in measuring poverty in Kosovo. Using this approach is considered more appropriate given Kosovo is a lower-middle income country in which a considerable share of the population cannot meet basic consumption needs (World Bank and KAS, 2011). Two consumption-based poverty lines are estimated since 2000 using the data from the first Living Standards Measurement Survey (LSMS) and then respective Household Budget Surveys (HBS) carried out by the Statistical Institute of Kosovo. After adjusting for inflation, the poverty line and extreme poverty line in 2011 were set at €1.72 and €1.20 per adult equivalent per day, respectively.

The poverty lines were estimated using the cost-of-basic-needs methodology. The methodology focuses on a basket of food and non-food goods consumed by the poor and is based on a minimum calorie intake of 2,100 kilocalories per person per day. The non-food component is based on the share of total expenditures that poor households allocate to non-food items. The extreme poverty line is set equal only to the food poverty line.

Since 2002 Kosovo has conducted a Household Budget Survey (HBS) every year. Even though the availability of data suggests it is possible to track poverty over time, this is not straightforward due to data non-comparability. According to the World Bank and KAS (2007a) during the 2002-2009 period, there were several issues in comparing the HBS resulting from two main sources: a) uncertainty concerning the sampling frame and b) changes in survey design.

Uncertainty concerning the sampling frame arises as the HBS during 2002-2005 period was based on 1981 population frame. Although this was the only frame available, it was considered problematic, not only because of the passage of time but also as a result of the upheavals in the years of conflict. To correct for sampling frame issue Word Bank (2007a) used a post-stratification procedure that calibrates the weights to allow for the comparability of demographic estimates from HBS to external sources. Moreover, aiming to overcome the

increasingly unrepresentative sampling frame, a new master sample was created in 2008, based on a new listing of dwellings in selected areas for the 2009 HBS. Hence, the results from the 2009 HBS (and subsequent surveys) also cannot be compared directly with results from the previous HBSs or Poverty Assessments (World Bank and KAS, 2011). For the purpose of the analysis in this thesis, data from HBS 2011 are used.

Changes in poverty estimates can be a result of changes in survey design rather than due to a real change. Two main changes between HBS 2002 and subsequent series are evident. The first change is how households were asked to recall expenditures on goods and services they bought. In HBS 2002 households were asked to record expenditures on a daily basis for two weeks, while in subsequent surveys the frequency of recording changed to a month. A shift from diary to recall can lead to underreporting of consumption, which in turn could result in higher estimated poverty rates. The second change that is likely to affect the comparability of data across HBS series is the level of disaggregation of the expenditure items. In 2002, households recorded expenditure items on a blank sheet, but in subsequent years, the households were provided with a list, with the same list provided to households in 2004. In 2005, the level of disaggregation increased and more items were added in the list. A substantial change was how consumption of own-produced items was reported and items were aggregated into 12 categories. Similar to the first change, this may lead to underreporting of consumption.

1.4.2 Poverty measures in Albania

An absolute monetary approach is also used in measuring poverty in Albania. Using data from the first Albanian LSMS carried out by the Albanian Institute of Statistics (INSTAT) in collaboration with the World Bank and the Department for International Development (DFID) two consumption-based poverty lines were estimated in 2002. The full poverty line was set equal to 35€ per capita per month, while the extreme poverty line was set at 22€ per capita per month[6] (World Bank, 2003).

[6] The original figures were obtained in Albanian Lek, an exchange rate on May 1st 2013 was used to make the figures comparable to those of Kosovo. Taking into consideration the current exchange rate the poverty line of 4,891 Albanian Lek or 35€ is lower than the poverty line of 1.55€ per day or 47€ per month whereas, the extreme poverty line of 3,047 Lek equals 22€, considerably lower than 37€ in Kosovo.

Similar to Kosovo, the methodology focuses on a basket of goods consumed by the poor and considers the recommendations of the Food and Agriculture Organization (FAO) on the minimum calorie requirements, adjusted for the population distribution in Albania[7]. Per capita necessary calorie intake was estimated at 2,288 calories per day, which is slightly above the one used in Kosovo (2,100 calories per day). The estimated food poverty is then adjusted to account for essential non-food items, calculated as the average non-food share of those households that spend roughly the same amount for food as indicated by the food poverty line.

Monetary poverty in Albania was estimated on the basis of a consumption-based measure mainly for the reasons that it was preferred in Kosovo. According to the World Bank (2003) the Albanian economy is considered to be largely rural and informal thus income is not precisely and readily measurable. Therefore, measures based on income may provide distorted estimates of poverty.

Following the 2002 LSMS, the INSTAT and the World Bank conducted three other surveys, respectively in 2003, 2005 and 2008. The three waves of the Albanian LSMSs show that Albania has experienced a considerable decrease in both poverty and extreme poverty levels. However, disparities across urban and rural areas and between regions - especially that of Mountain area with the rest of the country - are still evident. Chapter 3 provides a more detailed profile of poverty and its trends in Albania and Kosovo.

[7] According to 2001 population census.

1.5 Conclusions

The concept of poverty, or socio-economic disadvantage, has always been recognised as having multiple dimensions. Due to its multidimensional and broad nature many definitions have emerged and there is no single 'correct' definition of poverty. This has implications in terms of the commitments to achieve the Millennium Development Goals (MDGs) and the poverty reduction targets considering that different definitions and measures may entail different interventions and strategies.

Despite its multidimensional nature, traditionally efforts to measure poverty have primarily focused on resource-based (monetary) measures of poverty. Due to the lack of a unique definition increasing debates on the undefined goals of poverty reduction policies have followed. The various ways of conceptualizing and understanding poverty fall into categories of absolute and relative poverty. Absolute approach definition is most commonly used in developing countries, including Kosovo and Albania. It is used to define the poor from the non-poor using a quantitative measure highlighting the income generation as the solution however it neglects the importance of distributional issues. Relative poverty on the other hand, defines the poor compared to a reference group and is generally used in developed countries where basic needs are generally met. It attempts to understand inequality in terms of distributions of resources yet, is insensitive to economic growth.

The monetary approach has been widely used in measuring poverty, proxied by income or consumption data. This is also the case for developing countries such as Kosovo and Albania. This given it is considered to be compatible with the utility maximizing behaviour assumption as well as due to data availability which is not generally the case with other approaches. Due to simplicity and standard measurement practices, monetary approach is used widely for comparative purposes at the international level. This said, the absolute monetary approach is also used to measure poverty in this thesis as well.

CHAPTER 2

A REVIEW OF THEORETICAL AND EMPIRICAL STUDIES

Table of Contents

2.1 Introduction

Aiming to answer the second research question namely identify if there is an explicit theory of poverty in economics and whether the literature provides an articulated approach to investigate determinants of poverty, a review of empirical studies concerned with determinants of poverty is initially provided. The focus rests on their theoretical basis as well as the empirical findings. Given the focus of the thesis on exploring this relationship in Kosovo and Albania, this review of literature is centred on the studies in developing and transition countries.

From a preliminary review of the studies it became apparent that there is no single unified theory of poverty. The review in this chapter suggests that most studies in this literature do not make the theoretical basis clear and a long list of proxies is observed for most groups of explanatory variables; mainly because studies use the variables that they have access to. Hence in this chapter an untraditional approach in reviewing the literature is adopted. That said, the first section is concerned with the empirical review. The review concentrates on issues that are important for development of the model to be used in empirical analysis, as well as identifying issues that have not been investigated empirically and according to theory may be important. The approach taken will to be to consider the literature by these identified issues, rather than, for instance, consider the studies chronologically.

Following this discussion on those various issues, the second section focuses on the theoretical aspects which are not fully developed in this literature. More precisely, section 2.3.1 provides a discussion on the measurement of welfare using theories that help explain it. The economic theory of consumer behavior, duality theory as well as unitary approach provide the theoretical basis for measurement of household welfare in this thesis.

Section 2.3.2 reviews the theories related to structural relations that affect welfare, which provides the basis for the choice of the modelling approaches and the selection of independent variables in this thesis. In addition to this, there are many studies in the literature that discuss how each of these decisions relates to poverty and vice versa as theories seem to suggest that poverty, remittances and fertility are interrelated. Given the focus of the thesis, initially theories related to labour market decisions are reviewed namely, human capital

theory, signalling theory and literature on decisions related to informal employment. Secondly, a review of the theories of migration is provided given its importance in the context of Kosovo and Albania and their effect on income and consumption of households hence their welfare. Lastly this review considers the theory related to the household fertility decisions as well as interrelation of fertility and poverty.

To sum up, this chapter attempts to put all these theories (different approaches) together to inform the modelling approach. In other words, this thesis comes up with an eclectic theoretical framework in investigating poverty.

2.2 Empirical review

2.2.1 The dependent variable (Poverty measures)

There are two main approaches to estimating the determinants of poverty evident in this literature, that is models that have been set up to analyse: a) the level of household consumption or income expenditures and b) the probability of a household being poor.

The first approach uses a continuous representation of the poverty status of the household, such as household consumption expenditures or income and is known as a 'welfare function'. It is common among studies to use a semi-logarithmic form (Glewwe, 1991; Appleton, 1995; Okoije, 2002; Mukherje and Benson, 2003; Andersson et al., 2006; Himaz and Aturupane, 2011). An advantage of the continuous approach is that it uses all the relevant information across the whole distribution of consumption/income (Bruck et al., 2007; Andersson et al., 2006). Yet, an important drawback of this approach is that it is often assumed that there are constant relationships (either in absolute or relative terms) over the entire distribution, that is the effect of changes in the variables is assumed to be the same for poor and non-poor households (Fagernas and Wallace, 2007; Bruck et al., 2007; Rolleston, 2011; Ogundari et al., 2012). In other words, factors that increase consumption expenditure are assumed to reduce poverty (Fissuh and Harris, 2004; Geda et al., 2005). However, these studies argue that this is not always the case as for example the poverty level is not affected if consumption expenditure is increased only for those above the poverty line. This could be a major problem

due to effects of non-linearities. A possible approach that deals with the issue of non-linearity is estimation of welfare quantile regressions, which allows the effects of the determinants to differ at different parts of the distribution of household welfare. This approach is adopted only by few relatively recent studies (Bruck et al., 2007; Himaz and Aturupane, 2011; Ogundari, 2012). A more detailed discussion on merits of these approaches is provided in Chapter 4.

The alternative approach entails using a discrete representation of the poverty status of the household based on a common agreed poverty line and is known as 'poverty function'. Unlike the continuous approach, this approach provides a probabilistic statement about poverty. It arguably involves unnecessary loss of information by transforming household consumption or income into a discrete/binary indicator of poverty (Bruck et al., 2007; Geda et al., 2005; Fagernas and Wallace, 2007) and arbitrariness in setting the poverty line (Fissuh and Harris, 2004; Fagernas and Wallace, 2007). Several different poverty lines are used by different studies in literature such as: the absolute (Nestic and Vecchi, 2007; Njong, 2010; Awan et al., 2011b); the relative (Olaniyan, 2000; Okoije, 2002; Githinji, 2011; Osowole et al., 2012); the food-only (extreme) (Fiess and Verner, 2004); and the asset index at the 40^{th} percentile (Achia et al., 2010). This does imply that there is no commonly agreed poverty line. Considering the complementary understandings deriving from both approaches Appleton (1995), Okoije (2002) and Bruck et al. (2007) use and compare both approaches. The former two studies find similar results for both approaches whereas the latter found poverty estimates to be sensitive to the choice of welfare measure.

An associated drawback of this approach relates to it not being sensitive to variations within the poor (Fagernas and Wallace, 2007). Fissuh and Harris (2004) and Geda et al. (2005) use a rather different discrete representation of the poverty status of the household as they order the poverty indicator into three categories – extremely poor, poor and non-poor using a total and food (extreme) poverty lines. The former uses the Dogit Ordered Generalized Extreme Value (DOGEV) model and the latter an Ordered Logit and they argue these models allow for the effect of explanatory variables to differ across poverty categories. However, even these models are not without drawbacks and a detailed discussion of the advantages and drawbacks of these approaches is provided by Fissuh and Harris (2004).

Awan et al. (2011a and 2011b) and Njong (2010) take a different approach from that adopted by other studies. These studies set up their model to analyse an individual's rather than a household's poverty status and use an individual's earnings as the basis of the welfare indicator. However, using the individual's wage income as a measure of welfare is problematic in terms of poverty, because by doing so these studies ignore the dynamics of the household and moreover ignore the non-wage income, which may well be important in these countries (e.g Mukherje and Benson, 2003; Andersson et al., 2006; Bruck et al., 2007).

Consumption and income are both considered as suitable measures of welfare as they both reflect a household's ability to meet wants – to obtain goods and services. Nevertheless, both these measures fail to include important aspects such as leisure, several dimensions of quality of life, such as the use of public goods and services and common property resources (Appleton, 1995; Bruck, 2001; Andersson, et al., 2006). Most of the studies reviewed focus on consumption expenditures as measures of household welfare and they argue its use as opposed to income on several grounds: a) it is considered a more appropriate indicator if one is concerned with realized welfare rather than potential welfare and it fluctuates less than income due to households smoothing their consumption over time (Appleton, 1995; Bruck, 2001; Mukherje and Benson, 2003; Andersson et al., 2006; Fagernas and Wallace, 2007): b) is considered a better indicator for developing countries due to a large share of the labour force being engaged in self-employment activities (Mukherje and Benson, 2003; Andersson et al., 2006; Bruck et al., 2007) and due to a smaller measurement error in measuring consumption as households are more willing to report consumption than income (Appleton, 1995; Andersson et al., 2006; Fagernas and Wallace, 2007; Osowole et al., 2012). Different from the commonly used measures in the literature, Achia et al. (2010) uses an asset index as a measure of welfare; but the study does not justify the use of this measure as opposed to consumption or income.

Substantial price variations across regions necessitate correction of consumption to account for the price differences. Studies that account for price differences do this by using a spatial or regional price index (Okoije, 2002; Fiess and Verner, 2004; Awan et al., 2011b) or by using local prices found in the regional price survey (Fagernäs and Wallace, 2003). However, many studies do not discuss how they have accounted for price differences across regions (Canagarajah and Pörtner, 2003; Andersson et al., 2006; Bruck et al., 2007; Rolleston, 2011; Himaz and Aturupane, 2011; Ogundari, 2012).

2.2.2 Modelling the household behaviour

The issue of the household decision-making process is little/briefly discussed in this literature. However, there is a question of how to treat the interaction between the individual and the household. A fundamental aspect here is whether it is appropriate to consider the household as having a utility function or whether one should consider the individuals' utility functions and how they interact in the household. According to modern microeconomic theory individuals try to maximize their own utility whilst being a member of household, thus the focus is on modelling intra-household allocation of resources within a bargaining framework. However, most of the studies in this literature simply treat the household as the basic decision making unit, as if there is a household utility function and ignore the intra-household decision-making process.

Appleton (1995) and Bruck (2001) acknowledge that their analysis abstracts from issues of intra-household allocation given the surveys utilized by these studies measure consumption at household level thus capturing of the intra-household differences is not possible. In addition, Andersson et al. (2006) acknowledge that the model may fail to capture the significant intra-household differences given it builds on a unitary view of the household. A discussion of the economic models of household behaviour is provided in the Section 2.3.

2.2.3 The treatment of households with different composition

To take into account different household needs and therefore to be able to compare households with different composition, studies use per capita income or consumption (Mukherje and Benson, 2006; Himaz and Aturupane, 2011; Ogundari et al., 2012; Osowole et al., 2012) or adult equivalent (Geda et al., 2005; Fagernäs and Wallace, 2007; Rolleston, 2011; Awan et al., 2011b) consumption expenditures as a measure of welfare. However, neither of these is a perfect base. A discussion on merits of these approaches is generally absent among the reviewed studies. Andersson et al. (2006) and Mukherje and Benson (2003) acknowledge the drawbacks of per capita normalization and the advantages and difficulty of finding appropriate adult equivalent scales.[8] A drawback of per capita consumption is the

[8] See Section 2.3 for a more detailed discussion.

assumption that the needs of everyone in the household are the same and everyone receives an equal allocation of items consumed irrespective of age or gender. In addition, it ignores economies of scale. Alternatively, adult equivalences reflect the lower needs of children and also account for economies of scale. However, wide ranges of adult equivalence indicators exist in literature and all weights are arbitrary to a degree (Deaton, 1997). Another drawback of this approach relates to the consumption of non-food items being not closely linked with age or gender. Glewwe (1991) adopts a rather different approach; instead of using equivalence scales – given using the adult equivalent scales requires making untestable assumptions – he transforms the model and includes the household composition variables on the right-hand side of the model. The study notes that given this manipulation it is not possible to identify the effect of household composition on welfare as these variables are now accounting for two things: the effect as an independent variable (proxy for labour input) but also as equivalence weights as the left-hand side is not weighted; in other words, it accounts for differences in household composition when using expenditure levels to measure household welfare.

Most studies use per capita welfare indicator and justify its use as opposed to adult equivalences mainly by aiming to be consistent with the standard practice and due to its simplicity. Most studies however ignore the problem of interpretation of household composition variables. A more detailed discussion on these approaches is provided in Section 2.3.

2.2.4 Modelling issues: endogeneity and implications of interpreting pre-determined variables

Glewwe (1991) argues that the household level of welfare depends on the decisions the household makes in different markets hence they should not be treated independently. Therefore, there is endogeneity because the household is making the decision choices at every point in time. Thus, some of the variables that affect household welfare are going to be pre-determined (a result of past decisions), some exogenous and some endogenous (a result of its current decisions). Consequently, he argues one can investigate the determinants of household welfare as a reduced form on several variables that are assumed to be pre-determined or exogenous. This is discussed only by few studies (Bruck et al., 2007; Himaz and Aturupane, 2011; Rolleston, 2011; Ogundari, 2012) and only certain studies point out that the inclusion of explanatory variables focuses on predetermined (Rolleston, 2011) and/or exogenous variables (Bruck, 2001; Mukherje and Benson, 2003; Bruck et al., 2006; Andersson et al., 2007) aiming to avoid the risk of including variables simultaneously determined with welfare/poverty. However, using pre-determined variables is argued to affect their interpretation due to potential problem of sample selection (e.g. households who will get the most of remittances are the ones who have chosen to have a member(s) migrate). Thus interpreting them in terms of other households becomes problematic as its effect could be overstated. This issue is discussed more fully in Glewwe (1991) and is examined in more depth on Section 2.3.

2.2.5 Independent variables

This section reviews the literature on commonly used explanatory variables for poverty. A range of explanatory variables is used by studies and the variables generally differ mainly due to the availability of the data and country context. However, there are groups of variables commonly used such as education and household composition that can be grouped into few main categories. For the purpose of this review the variables are grouped according to types of production factors (human capital, labour, assets and technology), the location (environment) conditions as well as migration and social capital. Given the focus of the thesis, the education measures are initially discussed followed by the other groups of measures.

2.2.5.1 Education

Education is one of the most important components of human capital and is expected to positively affect household or individual income/poverty level in several ways. Education may increase the productivity of the household members thus their labour market prospects and earnings. In addition, it may improve the ability to set up a household business as well as improve productivity in farming. Studies aim to capture these effects by including different explicit variables as proxies for education at the household level. The education attainment can be considered as pre-determined given that past education is irreversible and fixed at the present time thus does not increase with household consumption (Glewwe, 1991; Rolleston, 2011). However, the effect of education can be overstated, as it could also be a proxy for unobserved endowments such as innate ability or motivation – i.e. individuals get education in a conscious effort to accumulate capital in which they have a comparative advantage (Glewwe, 1991).

One of the most commonly used indicators of education is the highest education attainment of the head of household (Olaniyan, 2000; Okoije, 2002; Fiess and Verner, 2004; Fissuh and Harris, 2004; Geda et al., 2005; Jamal, 2005; Nestic and Vecchi, 2007; Achia et al., 2010; Himaz and Aturupane, 2011; Osowole et al., 2012; Ogundari, 2012). Another proxy used in literature is the maximum level of education in household (Mukherje and Benson, 2003; Jamal, 2005; Andersson et al., 2006). Andersson et al. (2006) justifies the choice of this variable as according to Jolliffe (2002) it is found to be the best proxy for education in developing countries[9]. Other variables that are used in studies are years of schooling of household head (Rolleston, 2011), average years of schooling of all working age household members in working age (Bruck et al., 2007), maximum years of education in household (Bruck, 2001). Glewwe (1991) includes the education level of the most educated female and male aged 18 and older. The choice of these variables results from his discussion on the choice of household members whose characteristics will be used to compare households. He argues that it is not appropriate to compare households only on the basis of characteristics of the head as in some households the head is the oldest or a retired member whereas in some it is the main earner. Although for descriptive purposes it would be reasonable to compare the

[9] In order to answer the question of whose education matters for the determination of household income, Jolliffe (2002) tests three competing models of school attainment against each other and against the head of household model. The results reject using either the minimum level or the head's level of education to measure household school attainment, whereas show support for using the maximum level of school attainment when estimating total household income.

households based on characteristics of 'main earner' – member with the highest income – he argues there is endogeneity since who the main earner is, depends on who chooses to work and who chooses to do something else. As a result, this study chooses the potential main earner, based on educational level, age and sex more precisely the most educated male and the most educated female aged 18 and older.

In addition to any of the above-mentioned indicators of education several studies also include indicators of literacy such as: literacy of household head (Fagernas and Wallace, 2007), male and female literate adult (18 years or older) household members (Andersson et al., 2006) and the highest education level of the spouse (Githinji, 2011). To test for the potential persistence of poverty from one generation to another, Fagernas and Wallace (2007) include a variable that indicates whether the parent of the household head had no education given the expectations that the households with uneducated heads would be worse off compared to their counterparts. In addition to highest education level attained by household head, Osowole (2012) includes the education level of the mother and father, which could be included to measure the intergenerational mobility, although this has not been made fully clear in this study.

2.2.5.2 Regional variations

The local environment in which the household or individual resides influences the outcome of the production process thus, household's welfare, due to differences in industry structure, market development, infrastructure, access to public services, conditions for agriculture as well as trade and economic integration. As a result, variations could occur across regions and between rural and urban areas with certain regions being more exposed to poverty shocks. Several studies find that poverty in developing countries is more prevalent in rural areas than in urban areas (Garza-Rodriguez, 2016; Jamal, 2005; Nestic and Vecchi, 2007; Bruck et al., 2007) and poverty levels differ across regions (Appleton, 2001; Fissuh and Harris, 2004; Fagernas and Wallace, 2007; Nestic and Vecchi, 2007).

Studies account for regional variations in several ways. To capture the effects of infrastructure differences on households welfare studies include variables such as the lack of drinking water (Bruck, 2001), the average time spent in a district to collect water and the individual time an individual household takes to collect water (Githinji, 2011), village access

by motor vehicles during the dry season, or all year round, village access to electricity and health services (Andersson et al., 2006), access to sewage facilities, access to services, such as piped water, electricity, waste disposal and sanitation (Fiess and Verner, 2004), the simple average time for household members to reach each of the nearest Agricultural Development Marketing Corporation, market depot, health centre, bus stop, bank, and post office and the availability of electricity in urban/rural areas (Mukherje and Benson, 2003). To account for higher agricultural potential Bruck (2001) includes the availability of agricultural inputs as well as the price variable indicators as according to him they reflect changes in inter-seasonal price differences across households. Mukherje and Benson (2003) include the average maize yield for an area interacted with eight rural agro-ecological zones to capture the differing effects of agricultural productivity due to different climate, soils, and, in particular, market access conditions across these zones as well as diversification of production of crops and cultivation of specific crops.

Other studies include geographical controls such as region or province variables (Glewwe, 1991; Appleton, 1995; Olaniyan, 2000; Okoije, 2002; Fissuh and Harris, 2004; Jamal, 2005; Himaz and Aturupane, 2011; Rolleston, 2011; Githinji, 2011; Ogundari, 2012) in order to control for the effect of local conditions that is not possible to directly measure (Andersson et al., 2006; Fagernas and Wallace, 2003; Himaz and Aturupane, 2011) as well as border district variables to control for the effects of location close to any of the five neighbouring countries (Andersson et al., 2006). In addition, some studies perform separate regressions for different geographic areas such as regions (Mukherje and Benson, 2003; Andersson et al., 2006; Fagernas and Wallace, 2007) and rural/urban area (Olaniyan, 2000; Ogundari, 2012) to allow for the possibility that some of the effects of the determinants of welfare will vary by location (Mukherje and Benson, 2003; Andersson et al., 2006).

2.2.5.3 Migration

Remittances can be an important source of income in poor countries, thus are likely to improve household welfare. Some studies include indicators of remittances or migration such as receipt of international and domestic remittances (Jamal, 2005; Fagernas and Wallace, 2007; Himaz and Aturupane, 2011), value of remittances received (Glewwe, 1991) or if household head is a migrant (Rolleston, 2011). Given the poor households can be more likely to receive remittances, the remittance receipt variable may well be endogenous (Glewwe, 1991). However the importance of remittances and its expected effect on welfare/poverty is

not discussed by studies - except Fagernas and Wallace (2007). Controlling for migration or remittances however, would seem appropriate also for many countries covered by the studies considered in this review.

2.2.5.4 Other variables

Assets

Assets are considered to be important determinants of consumption/welfare as they may contribute to household income generation (Fissuh and Harris, 2004) as well as serve as insurance to smooth consumption in presence of shocks (Olaniyan, 2000; Fagernas and Wallace, 2007). In addition, ownership of livestock may serve as a source of nutrition (Fagernas and Wallace, 2007). To control for land studies use a range of measures such as ownership of house or land (Olaniyan, 2000; Fissuh and Harris, 2004; Fiess and Verner, 2004; Jamal, 2005; Fagernas and Wallace, 2007; Bruck et al., 2007), imputed monthly rental value of house if owned to capture the value of house (Glewwe, 1991; Himaz and Aturupane, 2011), car ownership (Bruck et al., 2007), ownership of non-agriculture land and asset score (Jamal, 2005), value of large farm equipment and the value of assets used in non-agricultural business (Glewwe, 1991), the area of land owned (Mukherje and Benson, 2003; Geda et al., 2005; Andersson et al., 2006; Githinji, 2011) and the squared area to capture non-linearities (Fagernas and Wallace, 2007), an asset index (Shehaj, 2012), the number of farms owned by a household, which could be an insurance factor, but may also signal less significant farming. Glewwe (1991) includes a wide variety of agricultural assets such as variables for the amount of land not planted in coffee or coco for household in different regions that are not part of a cooperative or land development scheme and the amount of land used by household that is part of a cooperative. In addition, the study also includes the net debt position of the household excluding savings in savings institutions and the amount of savings deposited in savings institutions.

To control for physical stock, studies include the ownership of livestock (Glewwe, 1991; Bruck, 2001; Andersson et al., 2006; Fagernas and Wallace, 2007), per capita value of livestock (Mukherje and Benson, 2003) and number of animals owned (Geda et al., 2005). Andersson et al. (2006) argues the ownership of farm animals can be assumed to be exogenously determined with consumption and this assumption can be sensible given these animals tend to be raised within household subsistence agriculture and not bought from

external sources. However, it is not clear why this could be the case.

However, many types of assets are argued to be endogenous (Glewwe, 1991; Andersson et al., 2006; Fagernas and Wallace, 2007). According to Glewwe (1991) smaller assets like tools are likely to be endogenous as households may have them due to higher level of welfare. In addition, with increase of welfare the demand for leisure increases thus tools are generally acquired to allow more time for leisure. Yet, Glewwe argues this is less likely the case with assets such as land, which are often inherited. However, tools may be pre-determined if they have been purchased in the past. Additionally, households do not acquire tools every year, poor households in particular.

Another less common group of variables includes those related to technology. Andersson et al. (2006) includes indicators if household has a tractor and if it uses chemical fertilizer to account for the farming technology used. In addition, the same study includes a dummy variable which indicates whether household owns or runs a business to capture the choice of activity (agriculture or business) of the household.

Household characteristics

A group of commonly used variables are the household composition indicators. An important reason for including such variables in the regression is to control for labour inputs (Andersson et al., 2006) and consumption (Section 2.2.3). The household composition affects the distribution of different income sources as different households have different capacity to provide income and eventually, increase the household welfare (Glewwe, 1991; Bruck et al., 2007). Household composition variables used in this literature include household size (Glewwe, 1991; Garza and Rodrigues, 2016; Olaniyan, 2000; Okoije, 2002; Fiess and Verner, 2004; Jamal, 2005; Achia et al., 2010; Himaz and Aturupane, 2011; Rolleston, 2011 Ogundari et al., 2012), the square of household size (Mukherje and Benson, 2003; Fagernas and Wallace, 2007) which is used to allow for non-linearity in the relationship between household size and living standards (Fagernas and Wallace, 2007), dependency ratio (Andersson et al., 2006), shares/number of persons in different age groups in the household (Mukherje and Benson, 2003; Jamal, 2005; Bruck et al., 2007; Ogundari et al., 2012), number of adults (Andersson et al., 2006) number of children belonging to specific age groups (Fissuh and Harris, 2004; Himaz and Aturupane, 2011), presence of members of specific age

groups (Fiess and Verner, 2004) and the presence of an adult student since being a student reduces his/her ability to provide income to the household (Fagernas and Wallace, 2007).

Gender is another factor that potentially affects income of household. It is generally observed that females and males have different earning opportunities and females have a higher poverty risk mainly due to discrimination they face in the labour market as well as disadvantages regarding their access to productive assets such as education (Okoije, 2002; Andersson et al., 2006). Studies generally include gender of household head (Okoije, 2002; Mukherje and Benson, 2003; Fiess and Verner, 2004; Andersson et al., 2006; Himaz and Aturupane, 2011; Osowole et al., 2012; Ogundari et al., 2012). Fagernas and Wallace (2007) includes a dummy variable which indicates a single parent household given households comprised of a single parent (spouse) are more likely to have a lower consumption level and to be poor compared to households with both parents.

However, according to Glewwe (1991) it is challenging to interpret these variables as they are used to control for two effects: to control for variations in household composition and also for their effect on household welfare as an independent variable (Section 2.3.1). However, this issue is acknowledged only by few studies (Bruck, 2001; Fissuh and Harris, 2004; Andersson et al., 2006), whereas other studies simply interpret the coefficients in terms of their effect on welfare.

In addition to household composition variables studies also include several characteristics of household head. A common characteristic used by studies is the age of household head (Fagernas and Wallace, 2007; Garza and Rodrigues, 2016; Okoije, 2002; Mukherje and Benson, 2003; Fissuh and Harris, 2004; Fiess and Verner, 2004; Geda et al., 2005; Rolleston, 2011; Himaz and Aturupane, 2011; Githinji, 2011; Osowole et al., 2012). Households with a younger head are less likely to be prosperous than those with a working older one (Fagernas and Wallace, 2007) given older heads are likely to have more experience and respect in the community thus enhance the welfare of household (Bruck, 2001). Some studies include also the squared age of household head (Glewwe, 1991; Okoije, 2002; Olaniyan, 2000; Fissuh and Harris, 2004; Himaz and Aturupane, 2011; Githinji, 2011) to capture experience. Okoije (2002) argues that due to retirement and decreasing productivity, income and hence welfare may fall at older ages thus one can expect a negative relationship between welfare and the square of age.

Labour market

A group of variables that captures the labour market status and occupation has been included by many studies and in some cases in addition to household composition variables. Okoije (2002) argues that the earnings are expected to differ between different sectors of the labour market, the household welfare being higher and the probability of being poor lower in households employed in non-farming activities. To control for these effects studies include variables that indicate: the sector of employment and/or employment status of household head (Olaniyan, 2000; Okoije, 2002; Mukherje and Benson, 2003; Fissuh and Harris, 2004; Fiess and Verner, 2004; Geda et al., 2005; Fagernas and Wallace, 2007; Rolleston, 2011; Ogundari et al., 2012; Osowole et al., 2012); number of employed members in household (Fissuh and Harris, 2004); regional unemployment rate (Fissuh and Harris, 2004); number of members with formal employment income (Mukherje and Benson, 2003); and presence of no economically active members (Bruck et al., 2007). However, according to Glewwe (1991) occupation is determined simultaneously with expenditure levels for many individuals hence one could question the exogeneity of household employment variables.

A group of variables not generally observed in literature includes shock-related variables that capture the exposure of household to labour market shocks. Bruck et al. (2007) includes wage arrears, in-kind payments, forced leave and unemployment as measures of transition related shock. According to this study, the impact of these shocks on income is expected to be higher during transition especially in early transition, due to undeveloped labour market institutions and low unemployment benefits.

Given that the labour market returns (income earning possibilities) of minority (ethnic) groups of the population may vary for reasons other rather than their access to production factors, such as discrimination, it is important to also control for this characteristic. To explore the potential role of ethnic discrimination in the income generating process Bruck et al. (2007) decomposes the gap in household income between Ukrainian and non-Ukrainian speaking households with a Blinder-Oaxaca type decomposition. Other studies explore this issue by including ethnicity dummy variables (Glewwe, 1991; Fissuh and Harris, 2004; Fiess and Verner, 2004; Andersson et al., 2006; Achia et al., 2010).

Social capital

The role of social capital has gained a lot of attention in the development literature however, only few studies pay attention to this issue in literature on poverty. Social capital may help household to increase income and consumption through productive effects - such as improved land and market access and thus an increase in agricultural production due to higher social position - as well as by providing consumption safety nets (Bruck, 2001). Fagernas and Wallace (2007) include an indicator of participation of any household member in community programs. Bruck (2001) includes indicators such as relation of any household member to authority, if head is local authority and if ancestors were buried there. Githinji (2011) includes six measures of social capital. Four district averages are used as proxies for the availability of social capital: a) the percentage of residents who are recent migrant, as communities with a higher proportion of recent migrants are expected to be more fractured and therefore have less social capital; b) the literacy rate for all individuals over fifteen years of age as the study expects that social capital is an increasing function of the human capital of the population; c) the average time in hours per week spent by each household on communal activities and d) the number of households that have individuals who are non-nuclear family members living in the household which is intended to control for the willingness of households in a community to support individuals beyond their immediate family. To measure each household connectedness to the social capital the study uses two variables: a) a measure of how long the head of household has lived in the district and b) a measure of the time that the household spends on social activities. Shehaj (2012) constructs a social capital index.

For most of the groups of variables a large number of measures included is listed (e.g household composition, regional variations, assets and social capital). Some of the measures the studies use seem to be specific to the situation of the country. However, there is very little discussion of why particular variables are chosen throughout these studies.

2.2.5.5 Results

Education variables are generally found to be significant and have the expected sign. A good number of studies find primary level of education to be important however, this may reflect the country setting, given primary education is more important in (poor) developing countries. However, in some studies it is reported to have the opposite effect on welfare/poverty (Jamal, 2005; Fissuh and Harris, 2004; Fagernas and Wallace, 2006). Education of both genders is also generally found to be important and female education is in particular highlighted to be an important factor in increasing welfare and reducing poverty (Geda et al., 2005; Jamal, 2005; Fagernas and Wallace, 2006; Githinji, 2011). The effects of education in most cases are found to be similar in both rural and urban areas and across regions, although some studies suggest that education is mostly not important in rural areas (Glewwe, 1991; Fagernas and Wallace, 2006). The results concerning the effect of education across different levels of quantiles are inconclusive as some studies find a similar effect across households in different levels of welfare (Bruck et al., 2007; Ogundari, 2012) whereas others a non-linear effect (Himaz and Aturupane, 2011). In addition, the effects of education on poverty are found to be non-uniform across the different poverty outcomes and education is reported to be more important for the hard-core poor than for the moderately poor (Fissuh and Harris, 2004; Geda et al., 2005).

Regional dummy variables are in general found to significantly affect welfare and poverty although in some cases some of the region dummies are reported to be unimportant (insignificant) (Jamal, 2005; Geda et al., 2006; Bruck et al., 2007; Ogundari et al., 2012). However, the effect of location on household welfare/poverty is found to differ across regions, as some regions/areas are found to have a positive (Rolleston, 2011) whereas others a negative (Olaniyan, 2000; Jamal, 2005) or mixed effect (Geda et al., 2006; Bruck et al., 2007; Ogundari et al., 2012).

Studies generally find assets to significantly affect welfare/poverty and mostly in a positive direction. However, in some cases the significance and direction of the effects are found to differ across regions (Glewwe, 1991; Andersson et al., 2006) and in rural and urban areas (Fagernas and Wallace, 2007).

Age is mostly found to be a significant determinant of welfare and poverty with only few studies reporting it to be unimportant. However, the empirical results about the direction of its effects are inconclusive as some studies report a significant U-shaped (Garza-Rodrigues, 2016; Sakuhuni et al., 2011; Githinji, 2011) whereas others an inverted U-shaped relationship (Olaniyan, 2000). Female-headed household are generally found to have a lower welfare or higher likelihood of being poor. However, the results regarding the significance of gender variable and evidence of gender effect are not uniform across regions – both the significance and the sign (Andersson et al., 2006; Mukherje and Benson, 2006; Fagernas and Wallace, 2007).

In addition, remittances and migration are also found to be important determinants of welfare and poverty status and have the expected sign. However, the results concerning the effect of remittances on rural areas are inconclusive as one study reports they are important (in both areas) (Jamal, 2005) whereas one that they are not (only in urban areas) (Fagernas and Wallace, 2007).

Determinants of poverty in Kosovo and Albania

Although there is a growing interest on research related to correlates of poverty, in the SEE countries context, to our best knowledge to date there is no study concerned with the effect of education on poverty in Kosovo and Albania. The World Bank and KAS Poverty Assessment for Kosovo (2011) provides an update to poverty trends and intends to highlight the key aspects of poverty in Kosovo but does not provide comprehensive analysis of poverty and its determinants. The study estimates both consumption and poverty regression and the findings indicate that there is a clear relationship between poverty and education measured by the share of adult members with respective levels of education. Household size, share of males 17-64 years old, main source of income from public wages and per diem work and share of unemployed are also found to affect poverty in urban areas at convenient significance levels. Whereas education, age of the head, share of males 17-64 years old, main source of income from self-employment, remittances and social assistance are found to be important in terms of poverty of rural households. In consumption regression, most indicators appear insignificant or significant at 10% level only.

Bhaumik et al. (2005) analyse the ethnicity component of poverty incidence and depth in Kosovo. The study finds that the share of members with secondary, vocational or tertiary education negatively affects poverty for both Serbs and Albanians when compared to those with less than primary education. In addition, for Albanian households the employment status of the household head and the labour supply of working-age household members decreases poverty risk. Findings also suggest that only proportion of members aged 15 or below and 16-24 years old have a significant and positive effect on poverty yet only for Albanians. An indicator of migration experience of the household is also included. More precisely, whether the household had to migrate during the 1990s however, it is not found to be important. The importance of migration during earlier and later waves yet is rather neglected in this study, despite findings of many studies confirming it.

Shaorshadze and Miyata (2010) analyse the impact of migrants and remittances on household welfare/poverty for Kosovo using treatment effect Full Information Maximum Likelihood Model. Similar to Albania, the study finds that migration and remittances decrease poverty in Kosovo. In addition, an increase in the years of education of the head is found to have a decreasing effect on poverty risk. The findings also suggest that share of adults and elderly, urban location, residence in regions other than Prishtina and presence of migrants and remittance receipt (included separately) decrease poverty risk. Möllers and Meyer (2014) focus on the effects of migration on poverty and inequality in rural Kosovo using Propensity Score Matching technique. The study finds that remittances have no effect on the extremely poor, but lift around 40 percent of migrant households above the vulnerability threshold.

Audet et al. (2006) analyze the effect of region on poverty in Albania using data from Living Standard Measurement Survey (LSMS) 2002. Their findings suggest that the education level of household's head is an important determinant of poverty in Albania, where lower education levels are associated with higher poverty levels. The results also confirm the importance of regional dimension and residence in regions other than Tirana decreases consumption. In addition, principal income from either the agricultural or secondary sector, household size, access to health care and rural residence (compared to Tirana) are also found to negatively affect consumption. On the other hand, secondary incomes coming from the public sector, land ownership as well cattle urban residence are found to have a positive effect on consumption.

The World Bank Poverty Assessment for Albania (2007b) estimates correlates of consumption and the likelihood of being poor in Albania using data from LSMS 2002 and 2005 and the results of both models are similar. Poverty in particular is found to be positively correlated with household size whereas negatively correlated with age, better labour market outcomes and education. In addition, rural households with access to better services such as tap water and toilet inside dwellings are found to have a lower likelihood of being poor. The findings also suggest a lower poverty risk for households with asset holdings and those with more land devoted to vegetables. Regarding consumption, findings particularly highlight the importance of participation in specific agricultural activities, livestock or hectares of irrigated land owned. The study also estimates the impact of migration on poverty using both an OLS and Instrumental Variable approach. Both temporary and permanent migrations are found to have a positive impact on consumption, but the impact is found to be larger for permanent migration**.**

Shehaj (2012) analyses the impact of migration and remittances on poverty in the Mountain region in Albania utilizing data from LSMS 2008. The study develops a counterfactual scenario of no migration and remittances and finds that migration and remittances have a poverty reducing effect. The effect of highest level of education of the head however, is found to be insignificant. The results also indicate that marital status, asset index, and shock suffered in the last 10 years have a positive significant effect whereas gender of the head, household size, migration experience and the squared term of social capital negatively affect consumption of the household.

Zezza et al. (2005) analyse the spatial patterns of migration and poverty in Albania. First, the findings of the study indicate that the high levels of internal migration during transition are positively related to poverty. Second, bordering Greece of some southern districts hence their high international migration may be a factor explaining their relatively low poverty rates. However, the study argues that these districts have been historically better-off hence it is not clear whether it is migration that is causing poverty reduction or poverty is motivating migration.

2.3 Theoretical review

The review of studies in Section 2.2 suggests that there is no single unified theory of poverty. Moreover, there is no underpinning study that fully informs the modelling approaches in this thesis. An exception is Glewwe (1991) which more comprehensively discusses the implications of economic theory to identify an appropriate model to investigate the determinants of household welfare.

The economic theory of consumer behaviour, duality theory as well as unitary approach provide the theoretical basis for measurement of household welfare. On the other hand, several theories and studies have been concerned with households' decisions which affect their poverty status. More precisely, theories that explain household's decisions regarding education and labour market, migration and remittances as well as fertility. There is a large literature examining how each of these decisions relates to poverty and vice versa.

This section attempts to put all these theories (different approaches) together to inform the models to be estimated in the following chapters. The theories are grouped in Figure 2.3.1 according to the relationships they help to explain. More precisely, theories related to measurement of welfare as well as structural relations that affect poverty. The figure also portrays the interrelations between poverty, education, remittances and fertility.

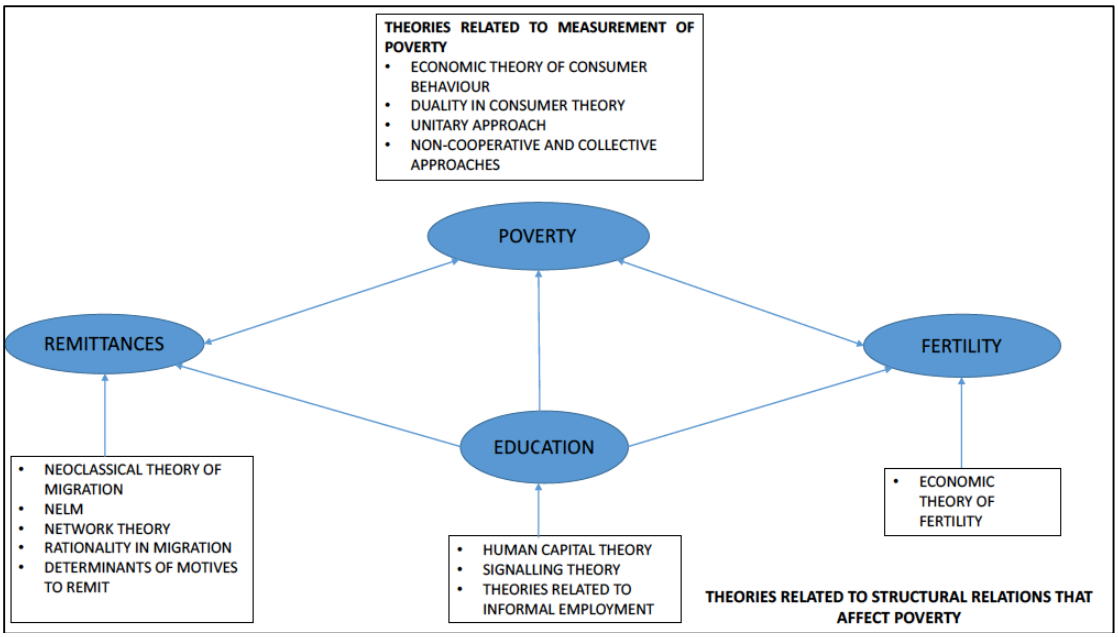

Figure 2.3.1. Theories that help to explain welfare/poverty measurement and that related to structural relations that affect poverty.

2.3.1 Measurement of welfare

One of the foundations of traditional microeconomic theory is the assumption that the desires and tastes of an individual are represented by her/his own rational preferences which then determine her/his behaviour. Consumer preferences over goods are thought of as a system of indifference curves, each linking bundles that are equally good, and with higher indifference curves representing a higher utility (Deaton, 2003). A given indifference curve corresponds to a given level of welfare, therefore measuring welfare requires labelling the indifference curves, and then locating each household on an indifference curve. There are many ways of labelling indifference curves. One possibility would be to take some reference commodity bundle and to label indifference curves by the distance from the origin of their point of intersection with the bundle. Another possibility is to select a reference set of prices, and calculate the amount of money needed to reach the desired level of utility which is known as Samuelson's money-metric measurement of utility (Deaton, 2003).

According to traditional economic consumer theory, the objective of the individual is to maximize utility. In other words, the consumer's choice problem may be reduced to the maximization of the utility subject to certain constraints such as income, time and production function. The basic axiom of the utility maximization process is that a rational consumer will always choose the most preferred bundle of goods, from the feasible set of consumption bundles allowed by his/her budget.

Consumer behaviour theory covers the individual and household preferences, the axioms of choice and how they lead to utility functions and system of choice described by utility maximization and a detailed discussion is presented in Deaton and Muellbauer (1980). The approach in Glewwe (1991) also largely builds on their seminal work.

The theory of consumer behaviour is formulated at individual level whereas consumption data on the other hand are available at household level. The traditional approach known as unitary approach assumes that a household, even if it consists of different individuals, acts as a single decision-making unit. Namely, household is treated as the basic decision making unit and it is assumed that the household utility function exists. Consequently, household consumption and labour supply are considered to be the observable result of the

maximization of (fixed) household preferences, constrained by a household budget restriction. This is referred to in the literature as the unitary model. This is what Glewwe (1991) and other researchers in empirical literature on poverty predominantly assume, although this is not made explicit in most studies.

However, it is arguable whether the household should be treated as a unit that has a utility function or whether it is something that derives from individual preferences. There are two alternative approaches in the literature that explicitly take into account several decision-makers in a household, making use of game theory elements, the non-cooperative and cooperative approaches.

In non-cooperative models, it is assumed that household members maximize their utility, taking the behaviour of other individuals as given. A drawback of these models, however, is that they do not necessarily result in Pareto efficient intra-household allocations; in many cases it is possible to make an individual better off, without making the other household members worse off.

The collective or co-operative approach is an approach that takes into consideration the bargaining process of individuals in the household with each other over resources. Namely, according to modern microeconomic theory individuals try to maximize their own utility while being a member of the household, therefore, household can be thought of as a group of individuals who bargain with each other over resources. This is known in literature as the collective household behaviour approach (Chiappori, 1992; Bourguignon and Chiappori, 1992; Chiappori, 1997).[10] Under this framework each household member is characterized by his or her own utility function and the assumption is made that the household decision making process results in Pareto efficient outcomes. This means that the individual's welfare cannot be made better off without making the welfare of other household members worse off. More precisely, the efficient decision process means that household members maximize their utility, subject to a given level of total expenditures and the distribution of expenditures across household members is based on a sharing rule. However, generally the Living Standard Measurement Surveys measure consumption at household level, which makes

[10] There have been some earlier attempts by Samuelson, (1956) and Becker, (1974a; 1974b) to account for the notion that households may consist of several individuals with different preferences have emerged in literature known as collective approaches. However, these approaches are not without drawback. For a more detailed review of these approaches see Vermeulen (2002).

capturing of the intra-household allocation impossible.

Utility is a construct that represents nothing other than household welfare. Since utility is unobservable, for the purpose of empirical analysis an indirect indicator is used instead. Household consumption is a good candidate as it is both measurable and a good indicator of household welfare. Making use of duality in consumer theory, cost/expenditure function can be used as a representation of preferences instead of utility function. The dual approach in consumer theory is based on the fact that consumer choices can be represented in form of utility maximization (the indirect utility function) and cost minimization (the expenditure function) (Deaton and Muellbauer, 1980). In the dual problem, the original problem is reformulated as one of selecting goods as to minimize the costs required to attain a specific level of utility and the solution of the problem are cost-minimizing demand functions known as Hicksian demand functions (Ibid).[11]

The expenditure level needed (X) depends on the prices of goods and services ($p_1 \ldots p_n$), characteristics of household members ($a_1 \ldots a_m$), and the utility level (U). The expenditure function can thus be defined as being dependent on general (sub) expenditure function *f(.)* and a set of multiplicative factors *m(.)* that define characteristics of household members.

$$X_h = C(U_h, p, a_h) = m(a_{h,} p) f(U_h, p) \qquad (1)$$

Given the consumption data are at the household level it is necessary to make adjustments for household composition. To accommodate the differences in household composition one should weight the expenditure level depending on household composition (m), thus divide both sides of equation (1) by *m(.)*. However, different from Deaton and Muellbauer (1980) where *m(.)* is a function of household composition variables, in equation (2) Glewwe (1991) includes price variables as well. Therefore equation (2) allows comparison of utility levels across households of different composition.

$$\frac{X_h}{m(a_h, p)} = f(U_h, p) \qquad (2)$$

[11] The original consumer problem is formulated as maximizing utility given a certain budget and prices thus the solution of this problem is a set of Marshallian demands.

The expression on the left-hand side is a money-metric measure of utility as the expenditure functions are monotonic to utility. Given households do not face the same prices, for example due to regional differences, in equation 3 the money-metric measure of utility is adjusted to account for different prices using a regional price index (s_j).

Household welfare is determined by several types of decisions/choices that household makes subject to constraints they face and thus should be treated jointly (Glewwe, 1991). The household faces two types of constraints: a full-income constraint - as total expenditures of household on goods and services should be less than or equal to the value of total resources available to the household - and production functions constraints (e.g. earnings function, agricultural and non-agricultural production functions). Because household makes these decision choices at different points in time, the problem of endogeneity could arise since some of the explanatory variables are going to be endogenously determined with expenditure levels (as a result of its current decisions) whereas some are going to be pre-determined (a result of past decisions) and some exogenous (Glewwe, 1991). Glewwe (1991) investigates the determinants of household welfare by regressing the welfare measure on various explanatory variables that are predetermined or exogenous. In other words, the approach considers the household decisions that are subject to certain constraints and are controlled by variables that are not currently determined by household. Such relations are referred to as the reduced form of estimates derived from the various structural relationships that affect welfare. In equation 3 the welfare is related to the above-mentioned factors and introduces five sets of factors: a) household composition; b) regional dummy variables *(R)*; c) physical assets *(K)*; d) human capital *(E)* and e) community characteristics *(C)*. However, Glewwe does not fully make clear how these factors relate to the structural markets in which the households operate.

$$\frac{X_h}{m(a_h\, p)s_j} = F\,(a_h, R_h K_h, E_h, C_h)\,\varepsilon \qquad (3)$$

The study also argues that according to Deaton and Muellbauer (1986) using equivalence scales to weight households by composition (on the left hand side) requires making untestable assumptions. Therefore, instead of using equivalence scales the study transforms the model in equation (2) and includes the household composition variables on the right-hand

side of the model by multiplying both sides of (2) by *m(.)* and taking the logarithm of both sides, assuming a convenient linear form of both *F (.)* and *m(.)* and obtains:

$$log \frac{X_h}{s_j} = \alpha + \beta a_h + \gamma R_h + \delta K_h + \omega E_h + \varphi C_h + \varepsilon \quad (4)$$

The study notes that given this manipulation it is not possible to identify the effect of household composition on welfare as these variables are now accounting for two things: the effect as an independent variable (a proxy related to labour input) but also as equivalence weights, as the left-hand side is not weighted. In other words, it also accounts for differences in household composition when using expenditure levels to measure household welfare. This problem, in our view, relates to other normalizations as well, unless the studies use an accurate weighting. Glewwe (1991) makes clear that using predetermined variables can affect their interpretation due to potential problem of sample selection. For instance, the effect of education may be overstated if the household accumulates assets for which they have an unobservable comparative advantage, thus, for example, education variables may include returns to motivation and innate ability in addition to the effect of education. Thus interpreting the estimated parameters in terms of the effects on other households becomes challenging as the effect could be overstated.

Another issue that has been neglected in this literature are the regional differences due to wages in addition to prices. Thus differences between households in certain regions may arise because the prices are higher but not the wages, which consequently deteriorates the poverty state of the households in such regions.

2.3.2 A review of theories related to structural relationships that affect welfare/poverty

2.3.2.1 Theories related to labour market decisions

Human capital theory

Human capital theory informs the modelling approaches in this thesis by explaining the effect of education on employment and earnings, hence the effect of education on welfare/poverty. Moreover, it provides implications on how education variable should be modelled in poverty equations.

The human capital notion refers to the knowledge and skills embodied in individuals that enhance the productivity of individual thus his/her earning opportunities in the labour market (Schultz, 1961; Becker, 1964). According to human capital theory the accumulation of human capital is an investment decision as individuals forgo some proportion of their income during the period of schooling due to expectations for increased future earnings (Becker, 1964). However, it is important to note that labour market theory is on the basis of the individual rather than household and this is not discussed in poverty literature although it may have implications for modelling the education variable.

Given decisions to invest in education are usually made in the household[12], household can be considered as the main decision making unit and the assumptions of human capital theory can be applied to explain household educational investment decisions. The investment process involves important costs which are usually considered as direct and indirect costs. Direct costs include spending on the resources for schooling whereas indirect costs are forgone earnings invested in schooling instead of somewhere else. Therefore, household will decide to invest in human capital if the higher future earnings outweigh the costs (Blundell et al., 1999). Investment in education is considered to be one of the most important investments in human capital, yet easiest to measure.

Investment in education is expected to positively affect labour market earnings however, the

[12] Decisions to invest in education are generally taken by the parents, who usually make the education decision hence pay for the education costs; as a result it is them that forgo some consumption/income and not the individual that is being educated.

returns are argued to be diminishing for several reasons (Behrman, 1995). The period over which the earnings have to be discounted back to present will be longer, the longer the period that individual spends in school thus as a result the post-schooling period over which the individual reaps the benefits of schooling will be shorter. Additionally, due to fixed endowments – such as abilities, pre-school education – individual is likely to experience diminishing returns to long (prolonged) schooling even in terms of expected wage.

Investments in education, alike other investments, can be judged in terms of their rates of return (Becker, 1993). Human capital theory provides a methodology for estimating rates of return to investments in education (Mincer, 1974; Becker, 1975). A commonly adopted approach to measure the benefits of education is the estimation of Mincerian rates of return, both the basic and the extended models. These models examine how the labour market rewards productive attributes like schooling and work experience. In the basic Mincer model, an individual chooses between alternative schooling levels by choosing the level that maximizes the present discounted value of earnings given the opportunity costs of time in schooling (Psacharopoulos, 1994). Therefore, under the Mincer assumptions the coefficient of schooling is the private rate of return to the additional year that an individual spends in schooling, regardless of the level of schooling this year refers to (Psacharopoulos, 1994; Onphanhdala and Suruga, 2006). In other words, the basic Mincer model does not distinguish between different levels of schooling. In order to estimate the average rate of returns to different levels of education an extended earnings function was developed, so the variable of years of schooling has been transformed to dummy variables for each level of schooling (Ibid).

The rates of returns for education from the Mincerian wage equation have been estimated for a number of countries since the late 1950s. The link between education and earnings has been established and many empirical studies have confirmed positive returns to education (Psacharopoulos, 1994; Psacharopoulos and Patrinos, 2004). The findings of these studies suggest that returns from investment in education decline with the level of schooling and the rates of returns are generally higher for women than for their male counterparts. Considering the context of Kosovo and Albania other factors may need consideration. The human capital and experience gained at certain points in time may differ in terms of its relevance to market economy. For instance, education and experience gained under the system of communism may be found less important compared to that gained over recent years. In addition, given the

high unemployment rates in Kosovo the return to education partly can take the form of employment premia rather than higher earnings (Section 3.2.3).

Therefore, the theory suggests that the returns to education are not linear and thus it has implications for modelling the education variable. Some studies use the years of education of the head of the household or in the household as measure of education however, this would not seem to be the most appropriate measure given the potential non-linearities. In addition, it suggests that it is not the most appropriate to use the education of the head as the eldest person may be assigned as the head out of respect although he/she may not necessarily be an income earner or decision maker and this could well be the case for Kosovo and Albania.

Signalling theory

Although the link between education and earnings has been established and many empirical studies have confirmed positive returns to education (Psacharopoulos 1994; Psacharopoulos and Patrinos, 2004); the causal relationship can be explained differently. An alternative theory, known as signalling theory, suggests that education only signals ability or inherent human capital but it does not add to individuals' human capital (Spence, 1973; Stiglitz, 1975; Blaug, 1985). According to Spence (1973) education is used as a market signal to reflect the potential productivity of individuals. Moreover, he further asserts that education serves no more than a screening device for employers which allows them to identify the ablest employees (Spence, 1973). Thus, according to this theory, having more education signals a higher quality in the labour market. From the individuals' perspective, whether it equips individuals with human capital or only signals the innate ability, it is important that the established positive correlation between earnings and education remains (Kjelland, 2008). Whether it is education that increases productivity or only signals it, ultimately it is expected to have to same effect on poverty.

Education and poverty

The relationship between education and household welfare/poverty is considered to be a co-determining relationship as poverty can be considered both a cause and consequence of low levels of education (Rolleston, 2011). On one hand, household welfare is linked to the human capital endowments of household members and in particular their educational level. On the

other hand, the household level of welfare –among other factors - strongly determines the amount of human capital acquired.

Education affects an individual's welfare by imparting knowledge and skills that are associated with improved employment and earnings opportunities (Chaudhry et al., 2010; Keeley, 2007; Mercan, 2013; Van der Berg, 2008; Njong, 2012). For individuals in the external markets, education is expected to increase job-seeking and employment opportunities (OECD, 2001; 2012; Kwon, 2009; Song, 2012). Education positively influences labour market search of the individuals as they have better skills in utilizing networks, accessing information and creating important connections which allows them to easily find employment opportunities compared to their counterparts (OECD, 2001; Kwon, 2009). For individuals already in the labour market, education is expected to improve earnings and career prospects through productivity (Becker, 1993; Schultz, 1961; Schultz, 1971; Kwon, 2009; OECD, 2001). Given the profit maximizing goal of organizations, most of them favour employing productive individuals. In addition, the increased productivity of individual in the workplace results in the individual being recognized as a high-productive worker that consequently augments his/her opportunities to advance in the internal labour market (Kwon, 2009). That said, since poverty to a large extent is a problem of lack of income, by increasing employment prospects and probability of higher earnings, education can help individuals lower the level and risk of poverty.

Indirectly education can improve the welfare of individuals by positively affecting their capability to make more convenient decisions, which allows them to avoid or escape from poverty (Zuluaga, 2007). The indirect effects, also often referred to as non-market benefits, include benefits gained by individual in terms of multidimensional concepts embraced on poverty; education can increase individuals' probability of success in fulfilment of basic needs, better utilization of health facilities, shelter, water and sanitation and raise their living standard (Chaudry et al., 2010; Tilak, 1999; Zuluaga, 2007).

The individual's investment decision to accumulate human capital highlights the hypothesized link between education and household welfare/poverty and the importance of labour market conditions that the individual will face after schooling. In case of labour market discrimination or due to poor prospects of the economy, individual incentives to invest in education may be lower. In addition, it indicates that transgenerational poverty links

could be reinforced for two reasons. Firstly, given years of schooling (education) is also influenced by other factors – such as ability, motivation and health related factors - besides time spent in school, individuals from poor households (with low welfare) are likely to be less endowed with these factors, as a result his/her incentives to stay longer in school will be lower. This suggests that these factors have to be controlled in order to obtain an unbiased estimate of the impact of education. Secondly, if schooling investment decisions are made by parents, investment in education will be limited in poor households as parents in such households tend to heavily discount the future earnings. Finally, poverty may negatively affect education given the poor are less likely to afford schooling due to lower access to capital markets or high interest rates if they manage to borrow, and/or higher transportation costs to schools of better quality. That said, interpreting the estimated impact of education in terms of other households becomes problematic as its effects could be overstated.

Informal market

Widespread informality is a characteristic of developing countries. Kosovo and Albania, where informal employment is considered to make a considerable contribution to total employment, are no exception to this (Section 3.2.3). Literature points to at least three main views on the nature of informal employment: The traditional schools that views informal employment as a predominantly involuntary participation of workers in a segmented labour market given they have failed to join the formal one due to access restrictions (Lehmann and Pignati, 2007). This view maintains that the labour markets are segmented and the wages for identical/similar individuals are different in formal and informal market, being higher in the former one. In transition countries in particular, it is assumed that generally lack of formal opportunities hence the need to survive are the main pushes for informal employment (Riinvest, 2013).

According to the 'alternate' view, informal employment is rather of a voluntary nature given individual's view on working in the informal sector is potentially as attractive as formal sector employment (Lehmann and Pignati, 2007; Karpestam, 2011). Similar to formal sector, employment in the informal sector is expected to be strongly associated with education. However once employed, their earnings may be lower than those in the former sector (Arvil et al., 2013).

According to Agarwal and Dhakal (2009) the most important reason for joining the informal

sector for the poor and the marginalized groups is to escape from unemployment and poverty. In Kosovo and Albania informal employment might be considered as a survival sector due to persistently high unemployment rates in addition to low income. An informal job may also become the second-best choice for poor households/individuals that generally cannot afford the entry costs in the formal sector and/or wait until a formal job opportunity is made available (Agarwal and Dhakal, 2009). Thus, although informal workers do not enjoy many of the positive aspects of formal work (UNIFEM, 2005), the informal sector may help a large portion of unemployed, unskilled labour and vulnerable groups of the society to solve the problem of being unemployed. Without the employment in informal sector the magnitude/severity of poverty would be much higher. That said, although employment in informal sector may benefit the poor, the effect of being employed in formal sector may be larger as such employees may benefit from social security, higher earnings, better working conditions and opportunities for productivity enhancing. This said, informal employment is another channel via which education may affect poverty.

According to Yamasaki (2012) most studies found education to be positively associated with formal employment and the opposite for the informal employment. In other words, findings suggest that the more educated an individual becomes, the less likely he/she will join the informal sector. However, the study points to potential bias as these studies have ignored the endogeneity of education. Sookram et al. (2008, p.15) find that individuals with secondary, vocational and tertiary level education simultaneously work in both the formal and informal sector, rather than in only one of the sectors. Moreover, according to the same study "*this is not a surprising result since, in many instances, a person with more skills would find it easy and profitable to operate both in the formal and informal sector, especially when there is a high demand for their particular skill or area of expertise*".

Education is found to also have a positive significant impact on individual earnings of informal workers (Kuepie et al., 2009; Tegoum, 2009). In terms of differences in returns to education between formal and informal sector the evidence is inconclusive. More than half of the studies found returns to be greater in formal sector however greater returns are found in informal sector as compared to formal one especially for vocational and secondary education. The mixed results can be attributed to different labour market characteristics of each country (Yamasaki, 2012). Overall, returns to human capital in informal jobs are estimated to be substantial and tend to suggest that informal employment is not necessarily a subsistence

activity but may be of a more dynamic nature (Ibid).

According to Nguyen et al. (2013), there are two main views in literature as to how the employment in informal sector is expected to affect poverty. According to the pessimistic view, the informal sector preserves poverty for several reasons (ESCAP, 2006; Agarwal and Dhakal, 2009). Firstly, due to poor working conditions the productivity and earnings of informal workers are generally low. Secondly, workers in informal sector lack or have little social protection and thirdly, they have poor institutional support as in the formal sector wages are periodically adjusted for inflation, such benefits do not accrue to the large proportion of informal workers. As a result, informality is seen as a barrier to poverty reduction (Agarwal and Dhakal, 2009; Nguyen et al., 2013). In the optimistic view it is argued that informality decreases poverty risk and this has been also supported by many empirical studies (Ibid).

Although informality may be argued to help with the fight against poverty, it might also be the origin of poverty, especially for the working poor. Informality could be one of the causes of poverty if jobs in this sector are associated with low incomes (Devicienti et al., 2009). In other words, although employment in informal sector would solve the problem of being unemployed, the income earned may be insufficient for the household to meet the basic needs. Therefore, formal employment is expected to have a larger effect on poverty compared to informal one.

2.3.2.2 Migration theory

Migration theories inform the modelling approaches in this thesis about the effect of migration on welfare as well as the implications that household welfare has on migration and remitting decisions.

Migration is generally defined as a temporary or permanent move of individuals or groups generally from low-income to high-income countries as well as internally, e.g. rural to urban areas. However, besides the economic factors, migration is also believed to be stimulated by political ones. The importance of the political factors may indicate a gap in considering only economic theory. In both countries investigated in this thesis migration has been of considerable importance and has been motivated by both economic and political factors

(Section 3.2.4). The importance of political factors indicates that the economic theory can explain migration only to a limited extent in these countries, particularly in Kosovo. One aspect of political migration in Kosovo –i.e that during the conflict - can be argued as exogenous to poverty.

In economic theory the migration decision is motivated from wage differentials in the host and home countries as well as employment possibilities or security (Litchfield and Waddington, 2003). In standard economic models of migration, the cost of migration is considered as a one off investment decision. There are two main approaches in defining the decision-making unit. According to neoclassical migration theory the individual is more likely to migrate if the discounted values of the monetary and psychic expected benefits exceed the discounted costs of migration (such as cost of moving, forgone earnings, adaption to a new labour market, host countries' various legal constraints in terms of immigration and psychic costs of leaving familiar surroundings and family) (Sjaastad, 1962).

However, The New Economics of Migration (NELM) Theory has shifted the focus to the household where the decision to migrate is a joint decision of the household members. Thus, migrant and the household members share the costs of and returns to migration (Stark, 1991). Within this framework it is the household as an entity that weighs the costs and the expected benefits of migration and decides to have a member migrating if the net present value of migration is positive. This is the only migration theory that explicitly links the migration decision to its impacts, via remittances (Hagen-Zanker, 2008). Migration is considered not only as a maximization of earnings strategy but also as risk diversification strategy of the household (Massey, 1990). As a result, both the migrant and household members benefit from coinsurance. The migrant is supported by the family until they find employment in destination country. In countries – especially developing countries - where credit and insurance markets do not function properly and there is no support from a state-financed system, households are largely exposed to natural and economic shocks[13]. Hence, migration may serve as income insurance for the household as it helps better dealing with such shocks given migrants send back remittances (McKenzie, 2007). In addition, it may reduce credit constraints for the non-migrant members of the household thus help them engage in self-employment activities by financing their investment activities (Hagen-Zanker, 2008).

[13] Such as uncertainty arising from weather conditions, job loss or declining prices for goods produced by the household due to deteriorated economic conditions or a disabling illness that affects the breadwinner.

However, remittances may create dependency and subsequently increase reservation wages, thus, negatively affect the labour supply of recipients (UNDP, 2012b; Acosta et al., 2007) which is reported to be the case for Kosovo (World Bank, 2011a).

Rationality implies that the migrants from a given sending locality are not randomly selected (Waddington and Sabates-Wheeler, 2003**;** Litchfield and Waddington, 2003). Utility maximizing highly skilled individuals or households are more likely to migrate as they are more likely to benefit from migration given better skills, education and experience. Similarly, non-migrants are more likely to stay in home country because their comparative advantage lies in staying. Consequently, migration is considered as a selective rather than a random process. Therefore, although migration can be treated as a pre-determined variable - if migration decision is considered to be taken in the past – interpreting its effect in terms of the effect on other households could be challenging as the effect could be overstated. For the case of Kosovo and Albania migration does not seem to have been selective as both educated and less educated have migrated during several migration waves (Section 3.2.4).

Poorer household may have higher incentives to migrate – as a strategy to improve their economic situation and risk diversification. Poorer household may decide to migrate due to lack of job opportunities in their home country especially in countries with high unemployment rates, and this could be the case for both Kosovo and Albania (Section 3.2.3). The household members however need financial support from the household to overcome the liquidity constraints. Poverty may discourage movement as poor households may be too poor to fund migration therefore, may be unable to send someone abroad or costs of migration may limit the set of potential destination choices, and consequently the potential benefits (Waddington and Sabates-Wheeler, 2003). They also may lack social capital that facilitates migration (Palloni et al., 2001). As a result, poor households may be selected out of migration. Liquidity constraints may have been an important factor in Albanian migration yet may have varied regionally given the migration networks have been more present in some regions (Section 3.2.4). In addition to cost constraints, poor are assumed to be selected out of migration due to their lower human capital hence lower anticipated rewards (Shehaj, 2012).

An additional factor associated to migration can be knowledge of the language of the host country. Individuals in certain regions/areas can have language advantages[14], which induces them to migrate and this could be the case for both Albania and Kosovo. On the other hand, higher income households can afford migration but may have less incentives to migrate given they may be able to provide income generation activities in home country – such as a household business (Waddington and Sabates-Wheeler 2003). This suggests that there may be a non-linear relationship between migration and household income. It also implies that better-off households are likely to be disproportionately represented in migration, therefore, the remittances may not flow towards the poorest, consequently would fail to reduce poverty and constitute a source of inequality for developing countries.

Countries that experience a high rate of migration of highly skilled workers face a 'brain drain' which is likely to affect countries' economic prospect and the demand for labour (Massey, 1990) that could result in an increase of poverty in home country. However, the literature points to the possibility of a 'brain gain' of the home country from skilled individuals via increased incentives to acquire human capital and remittances sent home as well as benefits from returned migration (Hunger, 2002). In general migration in Kosovo is not considered to have been a brain drain given the literature on phases of migration on Kosovo suggests that only migration in the second wave and partially current migration can be considered to be associated with a brain drain (Riinvest, 2007; UNDP, 2012a). However, it may become a problem in the future given the very high youth unemployment rate - above 50% (Section 3.2.3).

Migration of high skilled workers has been a phenomenon amongst Albanians during the transition period and it is considered to still go on (Germenji and Gedeshi, 2008). According to the CESS survey, more than half of the lecturers and research workers of the universities and research institutions of Albania migrated during the period 1991–2005 and around 50 percent belonged to the 25 to 34 age group at the time of migration (UNDP, 2006).

Although there is common understanding that migrants tend to remit to their families in the home country it is not clear whether more educated remit more than less educated ones (Nimi et al., 2008; Docquier et al., 2011). The literature points to several reasons to expect both a

[14] The knowledge of a particular foreign language if it has not been acquired purely with migration in mind it can be treated as endogenous. In Albania it is largely because they have mainly watched Italian TVs during the 90s and during these days as well.

positive and negative relationship between remittances and migrant's education. Migration of educated members may have a higher impact on a household's income as they may be in a position to earn more thus send more remittances and are less likely to be illegal (Docquier et al., 2011). However, whether the more educated migrant will earn more depends whether there is a match between education and employment position in the host country, as well as if the pay differentials are larger if they were employed in the home country. Educated migrants however, may not come from the lower income distribution thus remittances may not flow to the poorest. This could lead to an increase in inequality and consequently remittances may not reduce poverty. More educated migrants are also more likely to migrate with the whole household or they may originate from a richer household whose demand for remittances – in order to alleviate liquidity constraints – may be lower than that of the poorer ones (Niimi et al., 2008; Bollard et al., 2009). That said, it is ambiguous apriori which of the above effects dominates.

The less educated migrants tend to earn less thus may have a lower sending potential of remittances compared to their more educated counterparts. If the migrants however, come from poor households and migrated due to imperfections of the home labour market[15], remittances may reduce poverty - provided the migrants find employment in the host country or earn a higher wage as compared to that in home country. However, even if remittances do not flow directly to the poor, their investment could affect poverty by possibly stimulating economic growth and helping the poor through the trickle-down effects.

The network theory of international migration is a line of the migration economics which complements the abovementioned approaches and focuses on the importance of migration networks in the decision to migrate (Winters et al., 2001). Migration networks are defined as a set of personal ties – such as kin, friendship and shared community origin – that connects potential with former migrants in the home and host country (Massey et al., 1993) thus provide non-financial support in addition to financial one (Hatton and Williamson, 2002). Current migrants may provide the potential migrants with information about modes and potential destinations of migration, assistance in job opportunities and housing as well as financial means to help them overcome constraints to migration (Hatton and Williamson, 2002). Having access to such networks is expected to increase the possibility of migration by

[15] High unemployment rates especially for youth, or relatively low earnings as in the case of Kosovo and Albania.

reducing costs of migration and increasing the expected returns as well as reducing the degree of uncertainty associated with migration process (Massey et al., 1993; Winters et al., 2001). Cumulative and circular migration refers to the fact that as migration develops and networks expand the costs of migration and uncertainty associated with it reduces thus in the long term it extents outwards to become more available to all segments of society (Massey, 1990), in turn providing means even for the poorest to migrate.

Given the mutually beneficial contractual agreement, the migrant will send back remittances therefore, also to the poorest households, which contributes to household's poverty alleviation. Since the poor households are more likely to receive remittances, the remittance receipts variable may be endogenous but it is likely to be pre-determined if the decision to migrate was taken in the past. However, migration networks may be more prevalent in some regions than in others, thus facilitate migration of poorer households in certain regions. As a result, the effect of migration on poverty may be greater on certain regions. This seems to have been the case for both Kosovo and Albania suggesting that the migration networks contributed to high concentration of migrants mainly in two countries (Section 3.2.4). This implies that in the case of Kosovo and Albania selectivity in migration because of costs may be limited - as migration networks seem to have reduced the costs of migration as well as barriers to migrate by providing means for illegal migration. However, it should be pointed out that the presence of migration networks may differ between the regions. For example, in Albania migration networks may be stronger in the Coastal and regions closer to Grecce but less in the Mountain regions.

Theory has discussed several motives to remit and thus the impact of migration on poverty depends upon such motives. According to altruistic model, the amount remitted is affected by the income and size of the household whereby, the amount remitted should increase in cases when the household income decreases – due to adverse economic shocks – and decrease otherwise. An increase in migrants' income on the other hand is expected to increase remittances (Nilsson, 2005; Hagen-Zanker and Siegel, 2008). The remittances sent for altruism are more likely to influence poverty directly, as they help households smooth their consumption patterns and reduce the household expenditure burden. However, the amount of remittances may decrease as the attachment of the migrant to the household diminishes. This does not seem to be the case for Kosovo as around 72 percent of migrants report to send remittances to their family members (not close) several times during the year (UNDP,

2012a). This also suggests that remittances flow to households that do not have a migrant, and in Albania such households are generally very poor, highlighting the importance of remittances from non-household members on poverty.

The self-interest motives to remit are driven by the aspiration to inherit and/or future possibility of returning home (Nilsson, 2005). Therefore, remittances sent for self-interest purposes increase with an increase in household income or possibility to return (Hagen-Zanker and Siegel, 2008) as a result, such remittances are not expected to decrease poverty given they are more likely to be directed towards wealthier households. In addition, the motives to remit may be a mix of both altruism and self-interest known as the 'tempered altruism' (Nilsson, 2005). According to this theory the motives for remitting are seen as an agreement between the migrant and the household aiming to be beneficial for both parties as explained earlier within the family framework of decision making and NELM (Lucas and Stark, 1985). Remittances sent under this agreement are expected to decrease household poverty as it is expected to help them smooth consumption and also invest in projects with higher risk thus improve household utility if altruism motives remitting. If self-interest motive prevails then remittances are expected to flow towards wealthier households hence are not expected to affect poverty.

In addition to the above, the education of the migrant could have been founded by the household in the home country thus remittances may be sent as a repayment for the household investment (Docquier et al., 2011).

It is of note however, that decisions to remit are complex and may be result from multiple rather than single motives at certain points in time and the motives may change during time. Moreover, studies suggest that remittances in Kosovo and Albania are mainly used for fulfilment of consumption needs and migrants generally migrate to remit. This implies that altruism motives seem to be prevalent amongst migrants in these two countries.

2.3.2.3 Theory of household fertility decisions

Among many decisions that the household makes in order to maximize welfare are also those related to fertility. This is known as the economic theory of fertility and is largely based on the work of Gary S. Becker introduced in 1960, which has applied the consumer theory to

fertility analysis. This theory informs the models in this thesis about the effect of the number of children on household welfare as well as the implications that welfare has on household decisions related to fertility.

According to Becker's central argument, "*fertility decisions are economic that they involve search for an optimum number of children in face of economic limitations*" (cited in Kokolj, 2003, p.85). Therefore, among other commodities produced within the household - that yields services in order to maximize utility - children are also modelled as a special type of commodity (capital good) from which parents derive utility (Robinson, 1997). The demand thus depends on household income, on the cost (price) of children, and the tastes of parents or their preferences for children relative to other goods and services that provide satisfaction (utility) to them. Other things equal, higher income is expected to increase the demand for children (i.e., children are assumed to be a normal good). A higher demand for children may also refer to a higher amount spent on children known as demand for quality rather than simply an increase in the quantity of children.

According to Becker the interaction between quantity and quality of children is the reason behind the fertility rate decline in the developed world (Robinson, 1997; Kokolj, 2003). In other words, the preferences have moved towards high quality children that require more purchases of external inputs such as education or health that are more time-consuming/intensive within the household. This leads to an increase in cost of children. Thus, if the relative prices of children increase and as a result the opportunity costs of household having children, the demand for children is effectively expected to decrease - should the cost of quality be large enough to dominate the income effect - (Becker, 1992).

However, how income effects fertility may depend on sources of family income, as some sources may encourage fertility and others discourage it. Some sources affect/adjust the economic opportunities parents must forgo so as to have an additional child, or the price of children in terms of parental time and market goods (Schultz, 2005).[16] Important costs that can significantly affect the demand for children are those associated with time involved in raising children (Kokolj, 2003). If an increase in income results from an increase in the wage,

[16] An increase in real income of a household generally is expected to increase the demand for normal commodities.

the relationship is expected to be strong and negative, due to the increased opportunity costs of childrearing (Sax, 2011). On the other hand, changes in income due to variation in the returns to physical assets —business assets, land— are expected to be positively related to fertility aspirations, given this source of variation in income is not associated with the opportunity cost of children (Schultz, 2005) or the negative relationship is expected to be less pronounced (Sax, 2011). Moreover, in households with higher possessions of physical assets the value of children's labour may be valued more by parents (Amin et al., 2007). Among other factors that affect the household fertility decisions is also the high infant mortality rates among the poor, which will induce higher fertility rates among them (Schultz, 1981). This does not seem to be the case for Kosovo and Albania as child mortality rate is very low (Section 3.2.5).

Another factor that affects the number of children is also the role of parental education, and women's education in particular (Becker et al., 2012). Education is considered as one of the most important factors in women's decision regarding the number of children. In addition to direct costs of goods and services that are complementary to children, the cost of children includes the indirect or opportunity cost of the mother's time spent in childbearing. Theoretically, an increase in income/wage can have two effects. Individual (in this case mother) can reduce hours worked given she can earn the same amount of money while working fewer hours –known as income effect; or she can increase hours to wage-labour, replacing away from leisure as it has become relatively more expensive. Due to positive association between income and women's time, an increase of the labour market participation and real wage of women can lead to an increase in the cost of having high quality children[17] thus a reduction in fertility; irrespective of the offsetting effect coming from an increase in income (Mincer, 1963; Schultz, 1997; Galor and Weil, 1996). Although with increased wage the demand for all goods increases, higher income can lead to fewer children if the price of quality is sufficiently high.

The impact of education in reducing fertility may also work through improved knowledge about contraceptives and the effective use of contraceptive methods (Omariba, 2006) and better use of health system (Al-Riyami et al., 2004). Also, education may increase women's participation in fertility decision-making thus increasing her bargaining power and independence in the household (Gunes, 2013) namely women's empowerment. In other

[17] Especially if childrearing is done mostly by women.

words, it may have an impact on determining the age at marriage and number of children (Breierva and Duflo, 2004). Becker et al. (2012) find women's education to have a residual negative effect on fertility. More educated women may also have higher preferences for high quality children and the estimates of the same study suggest that mothers with a formal education have higher preferences for the education of their children. Breierova and Duflo (2004) also find that education has a strong effect, suggesting that compared to the husband, the education of wife has a stronger effect on fertility. Abadian (1996) also finds that women's mean age at marriage and secondary education were negatively associated with total fertility rates after controlling for family planning effort scores and infant mortality rates.

Finally, the demand for children may also depend on culture or religion (Sax, 2011). If having small families becomes more popular/culturally accepted, individual preferences will shift towards having lower number of children (McQuillan, 2004; Fernandez and Fogli, 2006 in Sax, 2011).

Another important determinant of fertility that has not received enough attention in the literature is social capital. Personal networks receive increasing recognition as explanatory factors of demographic events. Social capital is expected to affect fertility decisions mainly via two main channels. First, interpersonal relationships affect reproductive behaviour by helping individuals learn about new evaluations of fertility and the use of modern contraceptives mainly by transfer of fertility-related information, experiences, creation of structures of interpersonal influence (Bühler and Philipov, 2005).[18] This may as a result have a decreasing effect on fertility. Second, personal networks may also provide/involve exchanges of material and non-material resources such as money, goods, services, power etc. More precisely, involvement of households in structures of social exchange such as supportive personal relationships may ease their constraints related to time and money.[19] Therefore, households may be able to produce more commodities or commodities of higher quality –in this case have more children- without having to increase time spent at work or investing more money (Di Giulio et al., 2012).

[18] also (Bühler and Kohler, 2004; Kohler, 2001; Casterline 2001; Kohler et al., 2002; Carley, 2001; Montgomery et al., 2001; Valente et al., 1997; Entwisle et al., 1996; Burt, 1982; Rogers and Kincaid, 1981 in Bühler and Philipov, 2005).

[19] If for instance, the couple receives help in taking care of the first child by someone outside the family they have higher chances of having another child given they expect similar kind of support for the next child as well (Di Giulio et al., 2012).

Balbo and Mills (2011) on one hand find that those who experience a lower level of family social capital have a higher likelihood to realize their intention to have another child within three years. This supports the theoretical expectations that higher-order children are likely to be seen as a social investment by couple with no strong family ties. On the other hand, the study finds that for couples with children, a low level of social capital might instead lead to a higher probability to forgo positive fertility intentions, due to lack of support.

Household size and poverty

Household size can be a cause of but also an effect of poverty (Dupta and Dubey, 2011). Due to a high number of children, large households are more likely to have a low per capita income hence be poorer and although the child labour may to some extent attenuate it, the compensation is generally low. Higher fertility may in turn be associated with less educational investment in poorer households, resulting in lower earning potential for children thus fostering intergenerational transmission of poverty (Jungho et al., 2005). Yet, fertility seems to affect the education of future generation and not the current one. Poverty may increase poor household incentives to have a large number of children for several reasons (Dupta and Dubey, 2011): as a source of support in old age, particularly in developing countries where old age insurance and social security are almost absent; as a means to counterbalance the expected higher infant mortality rates or due to being located in poorer regions with lower earning opportunities therefore, have a greater likelihood that only one child may not be able to earn sufficient income in maturity to support the parents. Poor families may also have higher labour force participation of their female members because they are more dependent on their income, which may raise the opportunity costs of having children (Dupta and Dubey, 2011). The above discussion suggests that poverty and fertility (family size) are jointly determined, as a result fertility cannot be treated as exogenous to the household's poverty status.

2.4 Conclusions

In pursuing the second research question, the review in this chapter suggests that most studies in this literature do not make the theoretical basis clear. Two studies for which this is not the case are Glewwe (1991) as it comprehensively discusses the implications of economic theory to identify an appropriate model to investigate the determinants of household welfare; and Andersson et al. (2006) because it focuses on the theoretical motivations for the choice of explanatory variables. The review showed that this literature introduces a lot of variables but largely the theoretical basis of many studies is not made explicit. However, a lot of studies include variables that can be grouped into certain areas although they differ in their detailed application.

Most empirical studies investigate the determinants of poverty at household level and this is the approach adopted in this thesis as well. Also in general the consumption and poverty approach are most commonly used by studies whereas only few studies have adopted the quantile approach; although none of these studies focus on Kosovo and Albania. Hence in addition to addressing a limitation of continuous and poverty approach it is also important to estimate determinants of poverty across the entire distribution for Kosovo and Albania to assess whether the effect of independent variables is different for those at lower and upper parts of the distribution.

In Glewwe (1991) the determinants of welfare are modelled based on the household utility maximization and the household is treated as the basic decision making unit. This also will be the case in this thesis due to the nature of the data available. In addition, when reviewing the studies evident in this literature it became apparent that there is no single unified theory of poverty.

The economic theory of consumer behaviour provides the basis for welfare measurement and its uses in economic analysis and is thoroughly discussed by Deaton and Muellbauer (1980). Using duality in consumer theory, cost/expenditure function can be used as a representation of preferences instead of utility function. Also given the nature of the data hence the need to measure welfare at household level, there are different theoretical approaches as how to treat household decision making process. Consumer theory is formulated at individual level

however given living standard measurement datasets provide consumption at household level, the utility of the household members is represented by a single household utility function; this is known in the literature as the unitary approach. The unitary approach assumes that a household, even if it consists of different individuals, acts as a single decision-making unit. However, it is arguable whether household should be treated as a unit that has a utility function or whether it is something that derives from individual preferences. There are two alternative approaches in the literature that explicitly take into account several decision-makers in a household, making use of game theoretic elements, the non-cooperative and collective approach; nevertheless, due to the nature of the datasets utilized in this thesis they cannot be adopted.

Additionally, in the literature there are different theories and studies concerned with structural relationships that affect welfare/poverty. More precisely, theories that explain household's decisions regarding education and labour market, migration and remittances as well as fertility. In addition, this chapter reviews many studies in the literature that discuss how each of these decisions relates to poverty and vice versa. The review in this chapter suggests that poverty, remittances and fertility are interrelated. In other words, estimating determinants of poverty by using direct measures of remittances and fertility may produce biased and inconsistent estimates. The initial approach in this thesis is to estimate the determinants of poverty/household welfare (Chapter 4) given it is the most common approach in the literature; however, different from most studies, the effect of endogenous variables is controlled using only pre-determined and exogenous variables/proxies in order to minimize the endogeneity bias as much as possible. Another important contribution of this thesis to the literature is that it estimates the simultaneous determination of poverty, remittances and fertility in Albania (Chapter 6).

CHAPTER 3

POVERTY, EDUCATION, MIGRATION AND FERTILITY IN KOSOVO AND ALBANIA

Table of contents

3.1 Introduction

The previous chapter reviews the empirical determinants of poverty and the theory behind different markets that household makes decisions which in turn, determine their welfare or poverty state. In addition, it provides a discussion on the mechanism via which education affects poverty. The aim of this chapter is to provide two levels of descriptive analysis starting with contextual setting by providing trends in poverty, education, migration, and fertility in Kosovo and Albania followed by analysis of interrelations between poverty and its determinants using household level data to find out whether the data support theoretical expectations.

Albania was one of the first countries to adopt the UNDP's Millennium Development Goals (MDGs) targets and indicators at the sub-national level, and to prepare MDGs Regional Development Strategies for all 12 districts of the country. Among others, one of the most important goals of the MDGs was halving poverty rates by 2015 and providing universal primary education. The Government of Kosovo on the other hand, had no formal commitment to work towards reaching the MDGs by 2015 as Kosovo had no seat at the 2000 Millennium Summit due to United Nations Interim Administration Mission in Kosovo (UNMIK) being responsible for its governance at that time. However, given their relevance for the future development of Kosovo, government has pursued efforts to reach these goals. Despite considerable reduction in poverty rates over the last years both Kosovo and Albania remain amongst the poorest countries in Europe.

On the course of fulfilling commitment to achieve the Millennium Development Goals by 2015, Albania and Kosovo have pursued several reforms of the education system, aiming to ease access to higher education as well as eradicating poverty. In addition, both countries adopted the Bolognia system for university education, although Kosovo on voluntary basis given its ineligibility to become a member. Primary and lower secondary education is mandatory and free of charge in both countries. The education system in both countries operates through public universities and private higher and pre-university education institutions. The number of public institutions has increased over the last decade in both countries expanding in this way the education opportunities in the country.

Kosovo and Albania have faced large international migration outflows driven from both political and economic factors. Both countries have a sizeable Diaspora and remittances have been an effective mechanism for mitigating poverty as well as a coping mechanism for disadvantaged households with no or little employment and earning opportunities. Moreover, the economy of both countries is heavily reliant on international remittances. Even to date, migration continues to be a phenomenon amongst Kosovars. During the period 2010-2014, between 35-43 percent of the population in Kosovo was willing to migrate. [20] Demographic changes on the other hand are evident in both countries. However, despite many similarities between Kosovo and Albania, demographic trends seem to be different in many regards.

With the above said, this chapter is organized as following: Section 3.2 provides descriptive analysis of the main indicators emphasised in the thesis for both Kosovo and Albania. Given the focus of the thesis, a descriptive analysis on the main trends of poverty according to urban and rural division as well as regions is provided in Section 3.2.1. Following this, Section 3.2.2 provides brief background on the education system and the main trends and developments whereas Section 3.2.3 briefly analyses main trends in the labour market in both Kosovo and Albania. A discussion of main migration waves and nature of migration, importance of migration networks and use of remittances and their importance in terms of poverty is provided in Section 3.2.4. Finally, the last part of the section provides an analysis of main demographic trends and developments in both countries.

The empirical analysis developed in this thesis utilizes data from Kosovar Household Budget Survey (HBS) 2011 and Albanian Living Standards Survey (LSMS) 2012 conducted by the respective statistical institutes of both countries and the World Bank. A presentation of the datasets is provided in Section 3.3. Following this, Section 3.4 provides descriptive analysis of the theoretical relationships using data from the Kosovar HBS 2011 and the Albanian LSMS 2012. The last section concludes.

[20] The data from the 'Survey of Awareness of the EU and European Integration in Kosovo' 2012 and 2014 and 'Survey on the views of Kosovo citizens on different social, economic and political issues 2015'.

3.2 Trends of poverty, migration and fertility in Kosovo and Albania

3.2.1 Poverty in Kosovo and Albania

Poverty in Kosovo

Table 3.1[21] presents poverty figures in Kosovo according to Foster-Greer-Thorbecke (FGT) poverty measures by rural-urban division according to the five available poverty assessments. The discussion in Chapter 1 suggests that the poverty figures are not directly comparable but are utilized for the purpose of providing a poverty profile. Comparisons over these periods should be considered with caution and considered indicative at best. The data suggest that from over 40 percent of the population that were reported to live below the absolute poverty line in 2003, the rate is reduced to almost one third in 2010 and 2011. Nevertheless, the rate remains high by any standard and one of the highest in the region.[22]

Similarly, lower rural and urban poverty rates are reported in the subsequent assessments after 2003, although as noted above figures are not directly comparable. However, the differences are evident between the two areas and except 2005 and 2011 poverty is reported to be higher in urban areas. This suggests that while the majority of the population is concentrated in rural areas, and thus the poor are predominantly located in such areas, poverty in Kosovo is also an urban phenomenon (World Bank and KAS, 2011). Although it is not possible to precisely identify the causes of high poverty rates amongst urban areas, shift of population in urban areas could be one of the reasons.

[21] As described in more detail in Chapter 1, the headcount index, poverty gap, and squared poverty gap known also known as the Foster-Greer-Thorbecke (FGT) measures are the most common monetary measures of poverty.

[22] According to World Bank data in 2011, Albania recorded a poverty headcount rate of 14.3%, Bosnia and Herzegovina 17.9%, Macedonia 26.8%, Montenegro 9.3% whereas Serbia 24.5% in 2012.

Table 3. 1. Poverty figures in Kosovo by urban and rural division, in percentages

Poverty Measure➔		**Poverty Headcount[23]**	**Poverty Gap[24]**	**Poverty Severity[25]**
2003	Rural	44.2	n/a	n/a
	Urban	49.2	n/a	n/a
	Total	**43.5**	**11.8**	**4.6**
2005	Rural	49.2	n/a	n/a
	Urban	37.4	n/a	n/a
	Total	**45.1**	**13.3**	**5.7**
2009	Rural	31.1	9.8	2.7
	Urban	35.3	9.5	3.0
	Total	**34.5**	**9.6**	**2.8**
2010	Rural	26.7	6.9	1.8
	Urban	30.7	7.5	1.9
	Total	**29.2**	**7.3**	**1.9**
2011	Rural	31.5	7.8	2.1
	Urban	26.7	7.1	2.1
	Total	**29.7**	**7.5**	**2.1**

Source: Kosovo Poverty Assessment, World Bank (2005; 2007) and World Bank and KAS (2011; 2013)

Similarly, lower rural and urban poverty rates are reported in the subsequent assessments after 2003, although as noted above figures are not directly comparable. However, the differences are evident between the two areas and except 2005 and 2011 poverty is reported to be higher in urban areas. This suggests that while the majority of the population is concentrated in rural areas, and thus the poor are predominantly located in such areas, poverty in Kosovo is also an urban phenomenon (World Bank and KAS, 2011). Although it is not possible to precisely identify the causes of high poverty rates amongst urban areas, shift of population in urban areas could be one of the reasons.

Rates of poverty gap and severity fluctuated during the 2003-2011 period nevertheless; compared to 2003 the rates are considerably lower in 2011 (Table 3.1). Poverty gap is 4.3 percentage points whereas severity of poverty is 2.5 percentage points lower in 2011

[23] The poverty headcount ratio (HC) measures the proportion of people that are poor, and is simply the percentage of the population whose consumption (or other measures of living standard) falls below the applicable poverty line.
[24] The poverty gap (PG) (also known as depth) measures the total shortfall of the poor from the poverty line. It is also considered as a measure of the total amount of income/consumption necessary for those classified as poor to go out of poverty. Thus, can detect changes in welfare that occur below the poverty line, such as households becoming less poor, but not enough to cross the poverty line.
[25] The squared poverty gap index (also known as severity) is a weighted sum of poverty gaps (as a proportion of the poverty line), where the weights are the proportionate poverty gaps themselves. The squared poverty gap index takes inequality among the poor into account. However, both HC and PG do not consider possible inequalities among the poor therefore, fail to capture differences in the severity of poverty amongst the poor.

compared to 2003, respectively. The poverty gap and severity in urban and rural areas largely converged during this period and for the latter the rates are identical in 2011.

Table 3. 2. Absolute poverty by region in 2003, 2005 and 2009, in percentages

	Poverty Headcount			
Region	**2003/2004**	**2005/2006**	**2009**	**2011**
Gjakova	48.9	45.3	54.0	21.9
Gjilan	32.5	23.5	18.0	44.2
Mitrovica	59.0	69.7	38.0	29.8
Peja	37.8	40.1	37.2	25.9
Prizren	48.3	40.5	33.9	50.5
Prishtina	34.3	40.6	21.8	15.6
Ferizaj	49.8	54.4	53.8	37.9
Total	**43.7**	**45.0**	**34.5**	**29.7**

Source: World Bank (2005; 2007a) and World Bank and KAS (2011)

Table 3.2 presents the poverty headcount according to region for the last five available poverty assessments.[26] Disparities in poverty levels across regions are evident over the whole period. The trends in poverty reduction at the regional level are not uniform and as such, suggest disparities in the regional development. The data indicate that Mitrovica, Gjakova and Ferizaj have been the poorest regions during the 2003-2009 period. However, the data for 2011 suggests a different trend in poverty rates. Of note is the fact that poverty rates declined in 2011 for every region except for Gjilan and Prizren. On the contrary the two regions recorded an increase of 26.2 and 16.9 percentage points, respectively despite previously recording some of the lowest poverty rates. While according to three previous assessments Mitrovica and Gjakova recorded some of the highest poverty rates, in 2011 they experienced the largest poverty reduction. Similarly, Ferizaj recorded one of the largest poverty decline in 2011 nevertheless it remains one of the poorest regions. Prishtina on the other hand, continued to have the lowest proportion of the poor even in 2011, nevertheless the rate still remains high.

[26] Although poverty assessment has been published for 2010, regional poverty figures are not reported.

Trends in poverty gap and severity across regions are not reported except for poverty gap in 2009. According to World Bank and KAS (2011) Kosovo had a poverty gap of 6.9 percent in 2009 and the rate is disproportionally high in Gjakova and Ferizaj, 16.3 and 14.6 percent respectively.

Poverty in Albania

Similar to Kosovo, poverty figures are not reported annually for Albania. More precisely, following the Albanian LSMS of 2002, the Institute of Statistics and the World Bank for the measurement of living standards conducted only three other surveys in Albania, in 2005, 2008 and 2012. Table 3.3 presents poverty figures according to rural and urban division for the abovementioned years. The figures indicate that poverty headcount substantially decreased over this period. In 2002, a quarter of the population lived below the poverty line whereas the proportion decreased to 14.3 percent by 2012. The positive GDP growth rates, remittances, wage and pension increases are considered to be the main sources of poverty reduction in Albania (INSTAT et al., 2009). Significant reductions have been recorded in depth and severity of poverty since 2002 as well.

Data in Table 3.3 suggest that similar to Kosovo poverty is becoming an urban phenomenon in Albania. Rural areas recorded higher poverty rates compared to urban ones over the first three assessments but the rates largely converged in 2012. This is due to considerable decrease in rural poverty rate over this period from around 29.6 percent in 2002 to 15.5 percent in 2012. The significant decreases in rural poverty rates yet increases in urban areas in 2012 could be a result of increased efforts towards rural development and the phenomenon of population shifts from rural to urban areas; in addition, the aftermath of the crises is considered to have mainly impacted the urban areas (INSTAT and World Bank, 2015).

Decreases in poverty rates are evident also at the regional level although the reduction is not uniform and disparities across regions remain evident (Table 3.4). The increase in overall poverty rate is followed by increases in regional poverty rates in 2012 compared to 2008 except for the Mountain region, which is the only region to record a decrease. Although Mountain region recorded the highest poverty rates, during this period poverty measures substantially improved except for 2008.

Table 3. 3. Poverty figures in Albania according to urban/rural division, in percentages

Location	Year ➔	2002	2005	2008	2012
Rural	Headcount	29.6	23.8	15.0	15.5
	Gap	6.6	5.2	2.7	3.1
	Severity	2.1	1.7	0.7	1.0
Urban	Headcount	19.5	11.1	10.2	13.3
	Gap	4.5	2.3	2.1	2.8
	Severity	1.6	0.8	0.6	0.9
Total	Headcount	25.4	17.9	12.5	14.3
	Gap	5.7	3.9	2.4	3.0
	Severity	1.9	1.3	0.7	1.0

Source: Albania Poverty trends 2002-2005-2008-2012, INSTAT and World Bank (2015)

Poverty reduction however could be a result of international migration as well as internal migration from Mountain areas to the rest of the regions. This on the other hand may be the reason for increases in poverty rates among other regions as they may share the burden of these movements (INSTAT and World Bank, 2015). The same explanation could be applied for the narrowed gap in poverty rates among rural and urban areas discussed below.

The Coastal region (Table 3.4) recorded increased poverty rates in the last two years and is the poorest region in 2012. Tirana as expected recorded the lowest poverty rate over the whole period although the rate considerably increased in 2012 and is similar to that in the Central region. Overall, poverty gap and severity have followed a decreasing trend until 2012 when the rates increased except for the Mountain region; and almost halved in 2012 compared to 2002. The decline however varied across regions, the extent being the highest in the Mountain and Central regions. The highest decline is recorded in the Mountain region whereas the rate in the Coastal region only slightly improved. In terms of location, the decrease in poverty gap and severity is evident in both urban and rural areas as both rates halved.

Table 3. 4. Poverty figures in Albania according to region for 2002, 2005, 2008 and 2012, in percentages

Region	Year	2002	2005	2008	2012
Mountain	Headcount	44.5	25.2	25.9	15.1
	Gap	11.1	5.0	5.6	2.4
	Severity	4.1	1.5	1.7	0.6
Coastal	Headcount	20.6	16.8	12.7	17.7
	Gap	4.4	3.3	2.6	3.8
	Severity	1.5	1.0	0.8	1.3
Central	Headcount	25.6	20.8	10.7	12.6
	Gap	5.7	4.8	1.9	2.7
	Severity	1.8	1.7	0.5	0.9
Tirana	Headcount	17.8	8.1	8.8	12.1
	Gap	3.8	1.6	1.2	2.4
	Severity	1.3	0.5	0.2	0.7
Total	Headcount	25.4	17.9	12.5	14.3
	Gap	5.7	3.9	2.4	3.0
	Severity	1.9	1.3	0.7	1.0

Source: Albania Poverty trends 2002-2005-2008-2012, INSTAT and World Bank (2015)

3.2.2 Education in Kosovo and Albania

On the course of fulfilling commitment to achieve the Millennium Development Goals by 2015, Albania and Kosovo have been engaged in reforming the education sectors and especially in easing access to higher education as well as eradicating poverty. Box 1 and 2 present the organization of education systems in Kosovo and Albania, respectively. Education system in Kosovo and Albania is composed of both public and private institutions. Primary and lower secondary education are compulsory and free of charge in both countries. Educational reforms in Kosovo were initiated in 2002 when the Assembly of Kosovo adopted the laws on pre-university and university education. More specifically, the previous pre-university educational structure namely primary, lower and upper secondary education included an instructional framework consisting of twelve grades in a 4+4+4 arrangement whereas with the new framework includes a 5+4+3 arrangement. Hence, currently primary education consists of 5, lower secondary of 4 and upper secondary of 3 years.

Following the end of communism in 1990, education system in Albania also went under major reform aiming to eliminate illiteracy, achieve universal education and gender equality in access to education (INSTAT and SFSO, 2010). In 2004/2005 academic year the structure

of compulsory education changed in Albania as well namely, the duration of the first cycle increased from 4 to 5 years, changing the duration of compulsory education (primary and lower secondary) from 8 to 9 years of schooling (UNESCO, 2011).

Box 1: The education system in Kosovo[27]
Education system in Kosovo is organized in pre-university and university education:

a) Pre-university education
Level 0: Pre-primary education normally attended by children aged zero to six;
Level 1: Primary education consists of five years 1-5 (normally attended by children from age six);
Level 2: Lower secondary education consists of four years 6-9 (normally attended by children from age twelve);
Level 3: Upper secondary education consists of three years, depending on curriculum determined by the Ministry, including gymnasium, high vocational school, schools of music and art;
Level 4: Post-secondary vocational institution consists of one to two years, depending on the curriculum determined by the Ministry (normally from age eighteen), KCF post-secondary specialisation); Lifelong learning programmes for adults which may be at ISCED Levels 3 or 4;

b) University education
Level 5: Tertiary education consists of bachelor, master or doctoral studies.

Following other countries in the region and beyond, Albania adopted the Bologna system in 2003 when university education officially entered a process of structural reform, on the basis of the Bologna Declaration (Box 2). Over this transition, the number of private institutions in Albania has rapidly increased, widening the educational opportunities. Despite ineligibility of Kosovo to become a member of the Bolognia process, University of Pristina voluntarily adopted the Bologna Declaration in 2001, making it one of the first universities in Europe to start with the reforms for entering the European Higher Education Area (EHEA). As a result, the higher education system in Kosovo is also regulated according to Bolognia Declaration.

[27] Law No.04/L –032 on Pre-University Education in the Republic of Kosovo, p.14.

Box 2: The education system in Albania[28]

Education system in Albania is organized in two main parts: a) pre-university which includes:

a) Pre-university education

Pre-schooling education: normally attended by children three through six years old;
Primary (Elementary) education: which consists of six years (1-6) normally attended by children from age six;
Lower secondary education: which consists of three years from 7-9 and normally attended by children from age 12;
High (upper) secondary education: which consist of gymnasium or secondary vocational education or oriented secondary education which last 3 to 4 years.

b) University education and includes:

Tertiary education: which consists of bachelor, master, doctoral and post doctoral studies

Trends in education attainment in Kosovo

According to MDG report in 2010 the enrolment rates in primary and lower secondary levels of education in Kosovo are considered almost universal, and the rate is similar in both rural and urban areas (Table 3.5). The rate is particularly low however, amongst children with special needs. The free of charge basic education in Kosovo could be a reason for the very high access levels and participation rates.

Table 3. 5. Enrolment rates in Kosovo in 2004/2005 and 2010, in percentages

Enrolment rate	2004/2005	2010
Primary education	**95.4**	**99.0**
-urban	94.9	99.0
-rural	95.8	98.0
-children with special needs	12.1	17.0
Secondary education	**75.2**	**90.0**
% of pupils that start grade 1 and reach grade 9	95.3	99.0
% of pupils that start grade 10 and reach grade 12	73.5	90.0

Source: Second Millennium Development Goals (MDG) Report for Kosovo, UNDP (2007)

[28] Law Nr.69/2012 on Pre-University Education System in the Republic of Albania.

Table 3.6 shows that during the period spanning 2003-2009, the majority of the population over 15 years attained only less than upper secondary education attainment. On average only 9.2 percent of population attained tertiary education however, the proportion has considerably increased in 2009 compared to 2002. Differences are evident also across genders, the education attainment being particularly lower amongst females. During this period, on average, 70 percent of females attained less than upper secondary education and on average, only 5 percent attained tertiary education. Since Kosovo has a very high percentage of youth population and considering they are attaining higher levels of education, one could expect the share of population with tertiary education attainment to increase in the future.

Table 3. 6. Education level of population aged 15 years and older in Kosovo spanning 2002-2009, in percentages

Education Level	Year ➔	2002	2003	2004	2005	2006	2007	2008	2009
Less than upper secondary	Male	43.3	47.2	62.8	42.1	74.5	40.2	42.3	40.6
	Female	74.2	75.8	82.0	68.5	62.3	66.6	69.1	65.4
	Total	**59.2**	**61.7**	**72.4**	**55.5**	**68.5**	**53.6**	**55.8**	**53.0**
Upper secondary	Male	47.6	43.3	31.5	48.3	21.6	48.9	47.2	47.3
	Female	22.4	20.6	15.8	27.3	31.4	28.0	25.5	28.3
	Total	**34.6**	**31.8**	**23.6**	**37.6**	**26.4**	**38.4**	**36.3**	**37.8**
Tertiary	Male	9.1	9.5	5.8	9.6	9.4	10.8	10.5	12.1
	Female	3.4	3.6	2.2	4.3	6.3	5.3	5.3	6.3
	Total	**6.2**	**6.5**	**4.0**	**6.9**	**7.3**	**8.1**	**7.9**	**9.2**

Source: Labour Force Survey 2002-2009, KAS

Similarly, 2011 Census data suggest that population aged 25 years or over on average has 9.2 years of education and the average is highest in municipality of Prishtina and Gracanica (KAS, 2013a). The share of illiterate population is 3.8 percent and the overall rate seems to be affected by higher rates in Fushe-Kosove and Lipjan (above 5%). Regarding highest level of education attained, 2011 Census data also suggest that population in general attained secondary education whereas the share of highly educated population remains relatively low. Moreover, males in general have higher secondary education attainment and the share with tertiary attainment is higher than that of females; most females, on the other hand, have primary or lower secondary attainment (Ibid).

In terms of municipalities, Prishtina has the highest number of tertiary educated individuals followed by Peja, Prizren and Gjilan however, the number is still considerably lower than in

Prishtina; suggesting that educated individuals are mainly located in the capital city (KAS, 2013a). Gender differences in education attainment are evident across municipalities and males in general have higher education attainment than females.

2011 Census data suggest that education attainment of population over 20 years[29] has increased and this is evident if education attainment of younger and eldest age cohorts is compared (Table 3.7). The eldest age cohort in general has attained less than primary and primary education whereas younger cohorts mostly attained secondary education. In particular, increased education attainment is pronounced amongst females.

Table 3. 7. Education attainment of population aged 20 and over in 2011 according to four main age cohorts in Kosovo, in percentages

Age group	**20-24**		**25-34**		**40-64**		**65 +**	
Education level	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
Less than primary	1.8	3.0	2.5	6.2	4.5	21.5	35.9	69.0
Primary	21.6	29.7	30.4	51.8	27.2	50.5	33.9	22.2
Secondary	69.9	58.7	54.6	31.1	48.9	20.2	16.0	5.7
Tertiary	6.7	8.6	12.5	10.9	19.6	7.8	14.7	3.1
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Kosovo Census 2011 Main Findings, KAS

The number of graduates from the University of Prishtina has increased considerably from 1,951 in 2005/2006 to 5,739 in 2013/2014 academic year (KAS, 2006; 2014). Over the last years the number of private universities has also rapidly increased, broadening education opportunities thus the number is even higher if the number of graduates in private universities is taken into account. According to GAP (2010) private universities accommodated around 19,000 students. Although currently this may not have a large impact on the labour market, it is expected to have in the future. This given more graduates will continue to enter the labour

[29] KAS reported education statistics in some cases for population 20 years of older and in some 25 or older.

market whereas job creation is almost inexistent suggesting that labour market would not be able to absorb all new entrants.

Table 3.8 shows that there exists a strong relationship between education and employment through the whole period; the higher the education level, the higher the chances to be employed. More precisely, in 2009, 77 percent of those (economically active) who attained tertiary education were employed while those who have attained upper secondary and less than upper secondary education have lower employment rates of 34.9 and 9.3 percent, respectively. Differences are particularly evident amongst females, however, as at tertiary education level the rates of employment are similar to men. This implies that females who invest in their human capital endowments have similar chances of employment as men.

Table 3. 8. Employment according to education level in Kosovo spanning 2002-2009, in percentages

Education level ↓	**Year →**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Less than upper secondary	Male	25.4	30.6	33.6	31.5	33.6	26.6	20.1	20.9
	Female	2.3	2.2	3.9	4.6	4.8	5.1	1.9	2.3
	Total	**10.3**	**12.5**	**14.2**	**14.4**	**14.6**	**12.8**	**8.7**	**9.3**
Upper secondary	Male	42.7	46.6	50.1	49.5	47.7	41.1	42.7	44.4
	Female	19.5	17.9	18.0	19.1	14.4	18.5	18.0	19.6
	Total	**34.9**	**37.1**	**39.1**	**38.1**	**36.7**	**32.7**	**33.8**	**34.9**
Tertiary	Male	80.4	78.5	82.8	82.0	79.0	79.9	80.1	79.8
	Female	62.6	67.2	75.3	64.1	60.8	65.0	71.9	72.0
	Total	**75.1**	**75.2**	**80.7**	**76.2**	**74.7**	**74.7**	**77.2**	**76.9**

Source: Labour Market Statistics 2002-2009, KAS

Similarly, the distribution of employment according to education level during 2012-2014 period suggests that it is generally those with secondary and tertiary education that are employed (Table 3.9). In line with expectations the share of unemployed individuals is lowest amongst the tertiary educated individuals (Table 3.10). Similarly, the unemployment rates are higher amongst registered unemployed individuals with lower or no educational attainment. According to MLSW (2012) around 60 percent of those registered as unemployed are unskilled and more than 72 percent have below secondary level educational attainment.

Table 3. 9. Distribution of employment in Kosovo according to education level spanning 2012-2014, in percentages[30]

Education level	2012	2013	2014
No education	0.5	0.5	0.3
Primary	15.7	19.0	17.9
Professional Secondary	42.7	42.5	40.0
Gymnasium	14.4	13.3	15.7
Tertiary	25.6	24.7	26.1
Total	**100.00**	**100.00**	**100.00**

Source: Results of the Labour Force Survey 2012-2014, KAS

Moreover, average salary seems to be related to level of academic qualification in Kosovo. The average salary is higher for increased levels of education, particularly tertiary education. The average salary of those with primary and secondary qualification in 2011 is reported at 207€ and 235€ per month, respectively whilst considerably higher for graduate and postgraduate qualifications at 319€ and 607€, respectively (UNDP, 2012b). Of note is the increase in the number of graduates in the recent years.

During 2011-2014 period, Kosovo recorded on average 3.5 percent growth rate (World Bank, 2015). Considering that a significant portion of GDP growth is attributable to publicly-funded infrastructure projects, donor aid and remittances from Diaspora, the current growth model is considered to be unsustainable; unless Kosovo provides means for growth of private sector and attraction of productivity-increasing investments.

Table 3. 10. Share of unemployed working age population in Kosovo according to education level during 2012-2014 period, in percentages

	Unemployment rate								
	2012			2013			2014		
Education level	**Total**	Female	Male	**Total**	Female	Male	**Total**	Female	Male
No education	**62.5**	82.1	56.0	**59.9**	67.9	53.8	**64.6**	57.6	70.0
Primary	**44.6**	59.0	40.3	**40.5**	47.8	37.7	**46.0**	49.2	44.9
Professional Secondary	**28.0**	36.1	25.9	**27.6**	39.7	24.5	**35.3**	42.4	33.4
Gymnasium	**38.8**	50.2	35.4	**38.9**	54.6	33.4	**41.2**	61.9	34.8
Tertiary	**15.6**	24.4	11.5	**15.5**	20.3	12.8	**18.9**	25.4	14.7
Total	**30.9**	**40.0**	**28.1**	**30.0**	**38.8**	**26.9**	**35.3**	**41.6**	**33.1**

Source: Results of the Labour Force Survey 2012-2014, KAS

[30] The data for 2012-2014 period are reported different from previous period more precisely, the education levels are reported in different categories. Moreover, only overall figures are presented and no details on the rates for males and females are provided. Hence, the data for this period are presented in a separate table.

Trends in education attainment in Albania

Albania made significant progress towards achieving almost universal primary school enrolment (Table 3.11). Although the rate substantially decreased during 2008-2011 period to an average of 80 percent, net enrolment rate is reported to be 96 percent in the following period. However, considerable disparities between rural and urban areas, regions and for disadvantaged groups such as Roma community were evident (UNICEF, 2010). According to INSTAT and SFSO (2010) the completion rates in primary education are satisfactory as the latest LSMS data show that 93 percent of those aged 25-64 years have completed primary education.

A progressive trend has also characterized the gross enrolment ratio at the secondary and tertiary level and the increase in enrolment is particularly high for tertiary education. According to the World Bank data, the gross enrolment rate in secondary education increased from 74 percent in 2001 to 96 percent in 2014 whereas in tertiary from 17 to 63 percent, respectively. Moreover, latest data from 2011 Census suggest that 96.2 percent of the population aged 10 years or older is attending or finished school.

Table 3. 11. Enrolment rates in Albania in 2001 and 2008-2014 period[31], in percentages

Education level	2001	2008	2009	2010	2011	2012	2013	2014
Primary Education-Net	99	90	89	91	93	96	96	96
Secondary Education - Gross	74	84	85	88	91	93	96[32]	96
Tertiary Education - Gross	17	32	33	45	50	59	63	63

Source: The World Bank Country data

The data from 2011 Census suggest that population aged 25 years or over in Albania in general attained secondary education. More precisely, 14.9 percent attained primary education, 40.9 and 28.4 percent lower secondary and upper secondary education,

[31] As indicated in the table there are missing data for the gross secondary enrolment rates in 2000 and 2002 and to our best knowledge no data are available for enrolment rates in 2005, 2006 and 2007.
[32] The net enrolment rate is reported for 2013 and 2014 and is 84 and 85 percent, respectively.

respectively (including general or vocational schools) whereas only 10.7 percent tertiary education. Similar to Kosovo (9.2 years), the average number of years of education completed is above 10 years and differences across genders in terms of average years of education are not evident.

The education attainment of population is reported to have followed an increasing trend in comparison to previous years, amongst females in particular (Table 3.12). Namely, younger generations have better education attainment than the eldest generation. This is evident if highest level of education attained is compared between younger age groups 25-39 and 40-64 and the eldest generation (65 and older). More precisely, 21 percent of females in youngest cohort (25-39 years) attained tertiary education whereas only 10 and 3 percent from 40-64 and 65 and over age group, respectively. This could be due to better (increased) education opportunities for the younger generation following post-communist transition. The increase of education attainment is evident amongst males although not to the same extent as amongst females, as 15 percent of the male youngest age group attained tertiary education compared to 11 percent for the eldest group.

Table 3. 12. Education attainment of population aged 25 and over in 2011 in Albania, in percentages

Age group	**25-39**		**40-64**		**65 +**		**10 +**
Education level	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**	**All**
No education	3.0	2.0	2.0	2.0	7.0	21.0	5.1
Primary	3.0	2.0	4.0	8.0	34.4	44.0	14.9
Lower secondary	45.0	49.0	40.0	47.0	28.0	22.0	40.9
Upper secondary	34.0	26.0	42.0	34.0	19.0	10.0	28.4
Tertiary	15.0	21.0	12.0	10.0	11.0	3.0	10.7
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.00**

Source: Women and Men in Albania 2014, INSTAT

Data on the regional perspective reveal considerable variations in education attainment of the population across regions (INSTAT and SFSO, 2010). Tirana has the largest share of population that have attained at least a secondary education, the rate being similar for both males and females, 77 and 74 percent, respectively. However, the rates are much lower in the Central and Mountain regions, with differences being more pronounced between males and females. The proportion of males who have completed at least secondary education in these regions is 40 percent and for females around 30 percent. Similar regional variations are evident for tertiary education, yet even more pronounced, as the most educated individuals seem to be generally concentrated in Tirana region. Around 30 percent of adult population in this region attained tertiary education followed by around 10 percent in the Coastal region but only around 5 percent in the Central and Mountain regions. No major gender differences in education attainment are evident except for the Mountain region where the percentage of females with tertiary education is half that of males.

Table 3. 13. Employment according to education attainment according to gender in Albania, in percentages

Education level	Year	2008	2011	2012	2013	2014
Less than primary	Female	n/a	53.6	48.3	46.97	47.2
	Male	n/a	46.4	51.7	53.03	52.8
	Total	n/a	**5.2**	**5.4**	**4.37**	**3.6**
Primary	Female	47.1	48.1	47.4	48.8	47.1
	Male	52.9	51.9	52.6	51.2	52.9
	Total	**53.3**	**46.3**	**46.8**	**45.2**	**43.6**
Secondary	Female	39.5	36.3	37.1	36.0	34.5
	Male	60.5	63.7	62.9	64.0	65.5
	Total	**34.3**	**36.6**	**34.9**	**33.6**	**35.4**
Tertiary	Female	51.4	48.3	48.0	52.45	52.2
	Male	49.6	51.7	52.0	47.55	47.8
	Total	**19.4**	**11.9**	**12.9**	**16.9**	**17.4**

Source: Labour Force data 2008-2014, INSTAT
Notes: No data are available for 2009 and 2010;
The data reported for 2008 by INSTAT do not total to 100 but to 107 percent instead

Analysis of employment by education attainment of population in Albania suggest that share of employed individuals aged 15-64 years is highest amongst those with primary and secondary attainment over the 2008-2014 period (Table 3.13). This could be due to employment structure as in 2014, more than 50 percent of employed individuals are skilled agricultural and trade workers. In addition, the share of individuals with tertiary education attainment is higher among females and one reason could be the increasing number of female university graduates.

Table 3. 14. Share of unemployed according to education attainment in Albania spanning 2011-2014, in percentages

Education level	2011	2012	2013	2014
No education	3.7	1.41	2.5	1.36
Primary	37.8	36.9	37.6	31.8
Secondary	41.1	34.9	35.6	40.9
Tertiary	17.4	26.8	24.3	25.9
Total	**100.00**	**100.00**	**100.00**	**100.00**

Source: Labour Market data 2011, 2012, 2013 and 2014, INSTAT

Data on average wage according to education attainment are not available for Albania except for 2009 and suggest that similar to Kosovo average salary increases with increased education level and this is the case in both public and private sector. Although wages are lower for females in both sectors, the wage is highest for higher education attainment. As expected, increased levels of educational attainment appear to lower the risk of being unemployed, as the share of unemployed is higher the lower the level of education attained (Table 3.14).

Similar to Kosovo, the number of private universities is relatively high in main cities across the country which as a result has also influenced the number of graduates over the last years. Number of male university graduates has increased from 7,777 in 2008/2009 to more than 10,000 in 2012/2013 whereas number of females from 10,550 to 19,724 (INSTAT, 2015a). This suggests that the domination of male graduates in general has reversed and females constitute 65 percent of graduates in 2012/2013. As in the case of Kosovo, this is expected to affect labour market in the future.

3.2.3 Labour market in Kosovo and Albania

Labour market situation in Kosovo

Alarming figures have characterized the Kosovo labour market over the post conflict period. Data in Table 3.15 show that inactive persons constitute the largest percent of Kosovo population, highlighting the high under-utilization of capacities. The discouragement of workers and the considerable disparity of the participation rates across genders are some of the main reasons behind these results. The female participation rates have been traditionally very low, an average of only 28.3 percent through years. Despite the solid economic growth

during the post-conflict period, Kosovo recorded persistently high unemployment rates, the highest in the Balkan region (World Bank, 2010). Although at a lower rate compared to that in 2001, unemployment level was above 40 percent over the 2006-2009 period, with youth and female unemployment rates of above 50 and 70 percent, respectively (Table 3.15). However, the rate is reported to be considerably lower during 2012-2014 period as compared to earlier period, at 30-35 percent[33].

Table 3. 15. Labour market indicators in Kosovo, 2006-2014, in percentages

Indicator	2006	2007	2008	2009	2012	2013	2014
Labour force participation rate	52.5	46.5	46.0	47.7	36.9	40.5	41.6
- female	30.6	28.3	26.1	28.7	17.8	21.1	21.4
Unemployment rate	44.9	43.6	47.5	45.4	30.9	30.0	35.3
- youth 15-24	75.5	70	73	73	55.3	55.9	50.4
- female	61.6	55.2	59.6	54.4	40.0	38.8	41.6
- male	34.6	38.5	42.7	40.7	28.1	26.9	33.1

Source: Labour Force Statistical Data and Survey Results 2002-2010, KAS

Significant divergences in registered unemployment are evident also across the regions in Kosovo. Mitrovica has traditionally recorded the highest number of registered unemployed compared to other regions and the number is reported to have increased in 2011 compared to 2010 (MLSW, 2012). Registered unemployment is also high in Prishtina and Prizen, while lowest in Gjilan.

Labour market situation in Albania

Labour market situation is slightly better in Albania although still unsatisfactory. The data in Table 3.16 suggest that over the 2007-2014 period more than 60 percent of working age individuals in Albania are economically active however, the rate in 2013 considerably decreased to record the lowest level for this period. Although the participation rate is low by standards, it is still higher than the rate in Kosovo. Employment on the other hand has been relatively stable until 2013-2014 when the rate is lowest since 2007. Gender differences in labour market participation and employment are evident and in favour of males however, in 2013 and 2014 the gap narrowed and this could be due to decrease in overall employment rate being pronounced more amongst males.

[33] These results however, cannot be compared to the previous results due to inclusion of informal and agricultural activities on the latest survey.

Over the 2007-2012 period unemployment rate showed little fluctuation and the rate ranged between 13-14 percent. In 2013 however, the rate marked the highest increase to 15.6 percent to a considerable decrease in the following year to 11.0 percent only, which at the same time is the lowest rate for the 2006-2014 period. Young workers have difficulties finding a job and entering the labour market after completing their education. Lack of alternatives in the formal labour market is also one of the main reasons for a certain amount of young workers entering the informal economy (ILO, 2011). The youth unemployment rate (aged 15-29) is high compared to those of middle age (30-64). Although not precisely the same age group, it appears that the rate is lower than the youth unemployment rate in Kosovo. Gender disparities are also evident in unemployment rate with the rate in general being higher amongst females however, the gap reversed since 2012 (Table 3.16). Considerable differences are also evident in the unemployment rate across regions in Albania. The unemployment rate of 25 percent in Northern (Mountain) region (is almost double of that in Central and South (MLSAEOA, 2007).

Table 3. 16. Labour market indicators in Albania, 2006-2014, in percentages

Year ➔	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
LF Participation Rate	n/a	65.4	62.1	62.1	62.3	68.5	64.9	59.6	61.5
- Male	n/a	74.7	72.4	73.5	72.3	76.4	73.4	70.2	72.2
- Female	n/a	56.2	52.9	51.8	52.9	60.8	56.4	50.1	51.3
Employment Rate	49.6	56.4	53.8	53.4	53.4	54.0	55.0	44.5	50.5
- Male	n/a	64.0	63.3	64.5	63.1	65.7	62.2	57.3	58.0
- Females	n/a	49.3	45.6	43.6	44.5	51.8	49.6	43.1	43.4
- Youth (15-29 years)	n/a	40.2	31.3	35.6	34.3	42.8	34.5	28.2	28.2
Unemployment Rate	13.8	13.5	13.0	13.8	14.2	14.3	13.8	15.6	11.1
- Male	12.0	14.4	12.5	12.2	12.8	14.0	14.5	17.5	14.2
- Female	17.1	12.2	13.5	15.9	15.9	14.7	12.1	13.2	7.9
- Youth (15-29 years)	n/a	19.8	24.7	21.9	22.5	21.9	27.9	30.2	32.5

Source: Labour Market Survey 2006-2014, INSTAT

Informality in Kosovo and Albania

Both Kosovo and Albania are characterized by sizable informal activity. Although there are no official estimates, according to Boka and Torluccio (2013) several estimates on the informal economy in Albania suggest that its size is estimated to be around 30 to 34 percent of the GDP. Estimates of the same study suggest that informality in general followed a declining trend since mid 2000s (although with some fluctuations and a relatively slow pace).[34]

Informal employment in Albania occurs in several forms and non-declaration of employees and declaration of minimum wages is most prevalent[35] (ILO, 2011). Several attempts are undertaken to measure the size of informal employment in Albania and the figures reported suggest that it comprises 30-60 percent of total employment (ILO, 2011). Irrespective of estimates, it is obvious that informal employment accounts for a major share of employment in Albania.[36]

Similar figures regarding size of informal sector and employment are also reported for Kosovo, although no official estimates exist. According to the assessment of the European Agency for Reconstruction (EAR) in 2007, the size of the informal economy in Kosovo ranged between 27 and 35 percent of GDP in 2004 – 2006 period (ILO, 2010).[37] A recent study also suggests that informality in terms of lack of declaration of business sales and employees is estimated to be more than 30 percent (Riinvest, 2013). This suggests that budget revenues are over a third less than actual values and as a result, over 30 percent less public services offered and the unemployment rate lower than officially reported.

[34] All the methods used to assess the informal economy in Albania are constrained by the absence and accuracy of the data and the restrictive assumption on which each estimation method lies. Furthermore, there is no 'best' method to assess the informal sector of the economy.

[35] "*Informality in Albania occurs in various forms and in almost all economic activities: (a) external trade channels through non-declared goods and declarations of lower value of imported goods, and transmission of remittances through informal channels; (b) introduction of prohibited goods in the internal market; (c) poor tax collection and weak tax administration; (d) use of working hours, material and equipment of public companies for private purposes; (e) unregistered performance of different sectors of the economy especially those of services, trade and construction; (f) unreported income from agricultural entities; (e) informal lending activity outside banking channels; (g) illegal construction of residential and business premises, usurpation of land (private and public) and land built upon without permission (World Bank, 2006); and (i) non-declaration of employees and declaration of minimum wages*." (Boka and Torluccio, 2013, p.213).

[36] An example is the case with the street vending in Albania which seems to be informal. Finding from the survey of Albanian street vendors suggest that around 80 percent work without a licence whereas almost all (90%) do not pay state nor municipality taxes.

[37] Yet at the same time the share of businesses not reporting their complete income to the government may amount to much more, even as high as 80 per cent (Danielson, 2010). Moreover, the same study notes that if informality is measured based on compliance with statutory provisions on social security, about 70 percent of adult and young workers are estimated not to be covered by social security.

Activity in informal sector is considered to have helped the Albanian economy during the first years of transition mainly by providing households employment opportunities and supplementary income in the absence of other opportunities (Boka and Torluccio, 2013); which is still relevant for many families in both Kosovo and Albania.

3.2.4 Migration in Kosovo and Albania

Kosovo and Albania have experienced considerable migration, both long-term (permanent) and temporary and migration in these countries has been of both legal and illegal nature. In Kosovo migration can be considered to have been of both political and economic nature whereas in Albania it has been largely motivated by economic factors. Although estimates in both countries vary, Diaspora is considered to be sizable by any reasonable standard, with approximately one emigrant for every five Kosovo residents (UNDP, 2014a). Albania, on the other hand has an emigration rate of 26.5 percent, with 835.5 thousand Albanians living abroad according to 2005/2006 estimates (OECD, 2012).[38] Latest estimates suggest that 481.6 thousand Albanians have migrated during 2001-2011 period (INSTAT, 2014). Moreover, migration is considered to be one of the main reasons for the population decrease during 2001-2011 period in Albania (Ibid).

The literature on the Kosovar emigration history highlights four specific phases (Riinvest, 2007; UNDP, 2012a). The first phase is characterised by the emigration of Kosovar guest workers, who were unskilled, poorly educated/trained and from rural areas, mainly towards Germany and Switzerland on basis of special contracts on a temporary basis in late 1960s and early 1970s. The second phase, spanning 1989–1997, is characterised by the migration of better-educated and skilled young men, from both urban and rural areas, mainly with motives of escaping from the Yugoslav army services, specifically during the 1992–1995 Balkan wars. The abolition of the autonomous status of Kosova in 1989 was followed with the lay-off from jobs of many Kosovar citizens. Hence deterioration of the political situation and excessive unemployment amongst Kosovo-Albanians is recognised as another driver to migration. The third phase is the forced emigration as a result of the massive population displacement owing to the 1998/99 war in Kosovo. Finally, migration after 1999 characterises the most recent phase of migration. During the post-conflict period, more

[38] It should be noted that registration of migrants is not done systematically after they leave the country due to low incentives to register with the authorities.

restrictive immigration policies towards Kosovars were in place given the political stability recognised within Kosovo; therefore, migration during this period is mainly characterised by a) asylum-seeking/illegal migration driven mainly by the motives of finding better economic and employment opportunities given the post-conflict socio-economic situation in Kosovo;[39] b) migration for family reunification purposes; and c) the legal migration of highly skilled and highly educated individuals for temporary study or work arrangements. Willingness to migrate is still reported to be high amongst Kosovars as in the period 2010-2014, more than one thirds of the population in Kosovo was willing to migrate (Loxha and Elshani, 2015).

In Albania migration was almost non-existent before 1990 due to the communist regime. More precisely, during 1945-1990 period, migration had a political character and was generally of a clandestine nature given government at that time strongly opposed emigration which considered it as a crime (Madani et al., 2013). Albanian migration can be largely characterized by two main waves. The first migration phase began just after the communist era in 1990 due to severe transition to democracy with Greece and Italy being two of the main countries of destination, mainly due to easier access and the perspective of high financial returns (Kule et al., 2002). The second wave is motivated by the collapse of pyramid schemes in 1997-1998 which triggered socio-economic crisis and civic unrest (IOM, 2006). In addition, in 1999 during the conflict in Kosovo, many Albanians mixed with Kosovars who moved to European countries seeking asylum. This is referred in literature as the third wave of migration in Albania known as 'invisible flow'. Although not with the dimensions of previous flows, it still highlighted instability and economic insecurity in Albania (Ibid).

A high proportion of migrants from Kosovo and Albania are mainly concentrated in Germany and Switzerland for the former (Vathi and Black, 2007; World Bank, 2011a) and Greece and Italy for the later (IOM, 2008). This suggests that the migration networks contributed to high concentration of migrants in these countries. Networks are considered an important tool for Albania to overcome burocracy in Italy and Greece (Mai and Paladini, 2013, in INSTAT, 2014). In addition, migration networks may help potential migrants illegally cross the borders by arranging transport via traffickers. This has been the case for both Albania and Kosovo, and for the latter it has been recently revived as a phenomenon (Brajshori and Jovanovic,

[39] The high rate of unemployment (73%) among Kosovar youth aged 15 to 24 years is one of the most important reasons for the high rate of young people seeking asylum in the EU (UNDP, 2014a).

2013).

More than 40 percent of households in both Kosovo and Albania are reported to have at least one family member abroad (UNDP, 2012a; INSTAT and SFSO, 2010). The share however, could be higher in Albania due to some households that have left the country but have not been accounted for in the survey. The migration on such a large scale enables a relatively large inflow of remittances, which is a very important source of income for the economy of Kosovo.

In Kosovo 25 percent of households received remittances in 2011, and the share of recipients is even higher among households in rural areas and those headed by females (UNDP, 2012a). In line with theoretical expectations, there is evidence that in Kosovo high dependence on remittances negatively affects recipient labour supply (UNDP, 2012a). Similarly, data for Albania suggest that around 46 percent of migrants sent remittances (INSTAT, 2014).

Remittances have been of outmost importance concerning poverty in Kosovo and Albania by helping a considerable number of households meet their basic consumption needs. According to UNDP (2012a) remittances are the second largest source of income for recipient households in Kosovo (more than 20% of their total household income) after earnings from permanent employment. Remittances are reported to be overwhelmingly used for basic consumption among recipient households, namely with more than 90 percent spent on basic items such as food, clothing, housing, durable goods, health and education. The vast majority of emigrants surveyed in 2011 (94.4%) report supporting their families in Kosovo as the main reason for remitting while only a marginal share (2.4%) for saving money in banks, buying property, investing in family business, or lending to friends and family (UNDP, 2012a). This tends to suggest that in general remittances in Kosovo are primarily sent for altruism.

Similarly, remittances have been generally geared towards consumption in Albania. Hence, it resulted in increased demand for import of consumption goods as the unfavourable socio-economic conditions failed to transform the injected monetary value of remittances into increased domestic production or direct it towards productive use (INSTAT, 2014). Although migrants report to save and invest a proportion of their income, the share of migrants that save and invest money in Kosovo and Albania is reported to be low.

Nevertheless, the majority of those who invest do not channel their money in employment generating activities (UNDP, 2012a; INSTAT, 2014).

In addition, the data suggest that level of remittances sent has in general remained stable especially since 2008 suggesting that the bond of Kosovar migrants to their families is still strong. According to UNDP (2012a) Kosovar emigrant families are fully 'settled' in the host countries - over time, in such cases one can expect a reduction of remittances. This does not seem to be the case as around 72 percent of migrants report to send remittances to their family members (not close) in Kosovo several times during the year (Ibid). Remittances seem to flow also towards households that do not have migrants, and in Albania such households are generally very poor (Shehaj, 2013), highlighting the importance of remittances from non-household members on poverty.

According to World Bank (2011a) the type of migration that Kosovo experienced cannot be considered as brain drain. More precisely, Migration Survey data for 2009 suggest that most of the individuals had completed primary or secondary education attainment prior to migration across all waves of migration - more than 80 percent - (UNDP, 2014a; World Bank, 2010). Nevertheless, this study notes that brain drain may become a problem in the future due to high youth unemployment rates (aged 15–24) in the country yet even higher for more skilled youth. According to Economic Development Group Survey 2009, the share of emigrants with higher education increased considerably, from 18 percent to 30 percent; and the rate is above 30 percent also in the following two periods (UNDP, 2014a). Moreover, willingness to migrate is found to be relatively high also amongst educated individuals in Kosovo as 52 percent of individuals willing to migrate have completed secondary education and 17 percent have attained less than tertiary education (Loxha and Elshani, 2015). This as a result may hinder the ability to reduce poverty as well as long-term growth prospects. Moreover, the findings of UNDP Public Pulse 2012 suggest that 50 percent of unemployed individuals and 40 percent of occasionally employed intend to migrate, suggesting that unemployment remains a key push for migration.

In Albania the brain drain is considered to be considerable especially during 1990-1998 (Memaj et al., 2008). According to the CSES survey, more than half of the lecturers and research workers of the universities and research institutions of Albania migrated during the period 1991–2005 and around 50 percent belonged to the 25 to 34 years age group at the time

of migration (CSES, 2006). Nevertheless, in general the share of the migrants with higher education level is very small (7.5%) (INSTAT et al., 2010).

In addition, remittances have served as a major source of external finance in both countries, amounting to 17 percent of Kosovo's GDP in 2012 (UNDP, 2014a). Remittances strengthen demand for imported and domestically produced goods and services, raising prices and ultimately wages throughout the Kosovar economy thereby contributing to Kosovo's transition from post-conflict economic recovery to investment-driven and inclusive growth, which is a precondition for human development. Similarly, in 2006, estimates suggest that remittances constituted 14 percent of Albanian GDP (Borici and Gavoci, 2015), whereas World Bank (2011a) estimates suggest it dropped to only 7 percent in 2012 and 8.5 percent in 2013 (Madani et al., 2013) which still is considerable.

3.2.5 Demographic profile of Kosovo and Albania

Kosovo

Following the new legislation in place[40], 2011 Census is the first census since 1981 and is carried out at municipality level.[41] Population in Kosovo is reported to have experienced a continued tendency of growth over the 1948-2006 period, with the highest growth being recorded in the 1961-1981 period (KAS, 2008). Data from 2011 Census suggest that Kosovo has a population of 1,739,825 residents, excluding (Serb majority) municipalities: Leposaviq, Zubin Potok, Zveçan and Mitrovica North whereas an update including these municipalities suggest a population of 1,780,021 residents. Compared to 1,584,440 residents reported in 1981, despite major population shifts during the conflict, population in Kosovo seems to have grown by 12.3 percent in 2011. In general the majority of population is Albanian with Serb being the biggest minority group (KAS, 2012).

In addition, natural population growth has been positive even during the 2011-2014 period however, at a slow pace (Figure 3.1). Data from KAS (2015c) report suggest that the number

[40] After the approval of basic statistical legislation (two laws): the Law on Population, Households and Housing Census (Law no. 03/L-237) and the Law on Official Statistics of the Republic of Kosovo (Law no. 04 / L-036) approved during the years 2010-2011, and the amendments of the definition on previous censuses that were conducted in 1948, 1953, 1961, 1971 and 1981.

[41] Data on demographic trends are not published annually therefore, the descriptive analysis in this section utilizes information from the reports published by Kosovo Agency of Statistics such as Demographic, Social and Reproductive Health Survey (2003 and 2009), Census 2011, results as well as reports Women and Man in Kosovo (mainly annual).

of live births has increased (except for 2012) as well as the number of deaths yet, the growth of births outpaced that of deaths, resulting in positive natural growth. On the other hand, migration has followed an increasing trend and soared in 2013 and 2014 mainly due to high flux of illegal migrants towards EU countries.

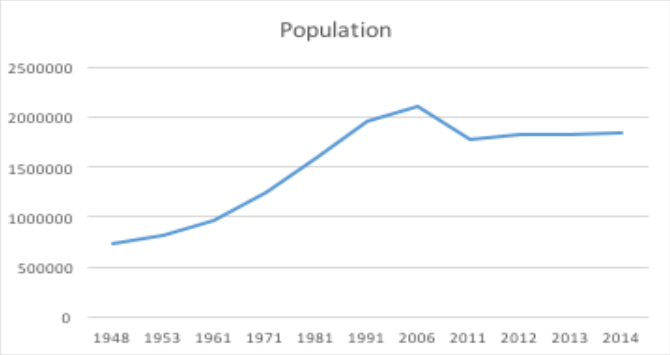

Figure 3. 1. Population during 1948-2014 period

Source: Demographic changes of the Kosovo population 1948-2006 and Estimation of Kosovo Population, 2011, 2012, 2013 and 2014, KAS

Different from Albania, population in Kosovo (in 2011) is concentrated more in rural areas with only 38.3 percent residing in urban ones; whereas population density is lowest in mountain, hilly as well as border areas. Internal migration is also a phenomenon amongst Kosovars especially from rural to urban areas.

Population from these areas internally migrated towards urban areas mainly for job opportunities, better living conditions as well as education. Most of internal migrants are shifting towards Prishtina (capital) and neighbouring municipalities Fushe-Kosova and Gracanica, whereas Kamenica and Podujeva are municipalities with the highest number of residents leaving (KAS, 2013a).

Table 3. 17. Population in Kosovo according to gender and age groups, in percentages

Year	Gender	0-14	15-59	60+
1971	Female	41.8	49.9	8.3
	Male	43.4	49.0	7.6
	Total	**42.6**	**49.5**	**7.9**
1981	Female	41.3	51.9	6.8
	Male	41.8	52.1	6.1
	Total	**41.6**	**52.0**	**6.5**
2009	Female	27.2	65.4	7.3
	Male	29.9	64.4	6.5
	Total	**28.5**	**64.8**	**6.8**
2011	Female	27.2	62.4	10.4
	Male	28.8	62.0	9.2
	Total	**28.0**	**62.2**	**9.8**
2013	Female	8.0	80.6	11.3
	Male	8.4	81.8	9.8
	Total	**8.2**	**81.2**	**10.6**

Source: KAS (2015); DSRHS (2009) and author's calculations
Notes: Data for 2009 are estimated/forecasted.

Population is relatively young, with average age of population being 30.2 years and the structure in 2011 is largely similar to that in 2009. Most of the population belong to age group 15-65 years (65.4 percent) whereas 28.0 percent are children aged 0-14 years and only 6.7 percent are 65 years or older (Table 3.17). However, compared to 2003, in 2009 and 2011 the proportion of population aged 15 or less has decreased whereas population aged 15-54 has increased from around 61 to 65 percent (KAS, 2010; 2012); suggesting that similar to Albania population is aging and this could be mainly due to decreased fertility as well as migration.

In terms of dependency ratio, 2011 Census data suggest that the rate of elderly (over 65) is highest in Serb majority municipalities such as Novoberde, Ranillug, Shterpce, Dragash and Gracanica, suggesting that population is aging more among population of Serb ethnicity. The youth dependency on the other hand is highest in municipality of Mamusha, Malisheva, Klina and Skenderaj. With regards to children aged 0-14 years, the share is highest in Podujeva, Malisheve, Shtime and Viti.

Similar to Albania, females in Kosovo marry earlier than males as only 10 percent of males compared to 18 percent of females aged 20-29 years are reported to be married (KAS, 2010). However, the share of females and males married at 15-19 and 20-24 years is small. The structure of age of mother at birth has not changed much and ranges from 28.2 to 29.2 years at several points during 2002-2012 period (KAS, 2013b). On the other hand, Total Fertility Rate (TFR) on average is reported to range from 1.98 to 2.0 children during 2011 and 2012.[42] Compared to 4 to 5 children during 1982-1987 period (Annual Statistics, 1989) and 2 to 3 children during 2002-2009 period (KAS, 2011a) in general TFR seems to have followed a decreasing trend.

According to Eurostat data (Table 3.18), infant mortality rate in Kosovo has decreased to only 6.6 percent in 2014 whereas the lowest rate has been recorded in 2013 with 5.5 percent. The rate has followed a decreasing trend over the whole period in Albania from 15.1 percent in 2004 to only 7.9 percent in 2013 and 2014.

Table 3. 18. Infant mortality rate in Kosovo and Albania

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Albania	15.1	14.8	13.0	11.9	11.1	10.3	9.6	8.7	8.8	7.9	7.9
Kosovo	11.8	9.6	12.0	11.1	9.7	9.9	8.8	12.1	11.4	5.5	6.6

Source: Eurostat

Data at different periods starting from 1981 suggest that lifespan of females is in general higher than that of males (KAS, 2013c). Except for the 1999 and early post conflict years, the lifespan of the population has followed an increasing trend (during 2003-2011 period) and in 2011 is estimated to be on average 76.7 years for the whole population and 74.1 for males and 79.4 for females. Moreover, the projections of KAS suggest that is going to increase also in the future.

Households in Kosovo are relatively large; the average size of household is reported to be 5.9 in 2009 and 2011 (KAS, 2013a). The size seems to have decreased compared to 2003 when the average size is reported to be 6.4 members. In general, the household size is higher in rural areas as the average size is 6.4 whereas only 5.2 in urban ones. Moreover, presence of

[42] The data regarding total fertility rate are reported from different sources and in most cases numbers those from KAS surveys and World Bank seem to differ. However, KAS (2013b) suggests that data from DSHS (2003 and 2009) and KAS (2011b and 2012) seem to be the most accurate. KAS reported data for TNR for 2011 and 2012; World Bank and DSHS data for 2003 and 2009; Vjetari Statistikor for 1989, KAS).

extended families is also a phenomenon among Kosovar households, particularly in rural areas. Data for 2011 suggest that 20.1 percent of households are reported to have eight or more members (KAS, 2013a). Yet, the number of extended families seems to have reduced since 2003. More specifically, the share decreased from 31.1 percent in 2003 to 26.7 percent in 2009 (KAS, 2011b).

Latest available data regarding the share of large families according to urban or rural location suggest that around 40 percent of household are reported to have 7 or more members compared to only 22 percent in urban areas in 2009 (KAS, 2011b). In general, the heads are males over 90 percent in 2009 and 88.5 percent in 2011 and female heads are in general widows (KAS, 2011b).

Albania

In contrast to Kosovo, the population of Albania has experienced a decreasing trend from 1990 after the fall of the Communist regime. The population has declined by around 8.0 per cent, compared to the 2001 Census, where the enumerated population was 3,069,275 (INSTAT, 2012b). A declining trend has followed also during the 2012-2015 period (Table 3.19). Massive migration (especially after 1990) is considered as one of the main consequences of decline as discussed in previous section. However, during 2001-2014 period the rate of births is also reported to have declined considerably whereas the number of deaths (around 20 thousands) has in general remained stable. More precisely, the data suggest that number of births has decreased from 53,000 in 2001 to 35,000 in 2014 (INSTAT, 2015a). Hence, in addition to migration, fertility decline is another important factor that affected the population decline in Albania.

Data in Table 3.20 suggest that the decline in population is particularly evident among population aged 0-15 years, as the share has decreased from 37 percent in 1979 to only 18-19 percent in 2014 whereas share of population aged 65 and over has tripled amounting to around 13 percent of population in 2014; suggesting that population is aging in Albania. Kukes and Dibra have the highest share of young population in total working age population whereas Gjirokastra and Vlora the highest share of elderly population (INSTAT, 2015a).

Table 3. 19. Population changes in Albania during 2005-2015 period

Year	Population (In 000's)	Annual change (%)	Males (In 000's)	Females (In 000's)	Urban	Rural
2005	3,003		1,499	1,504	1,393	1,609
2006	2,981	-0.73	1,489	1,492	1,437	1,567
2007	2,958	-0.77	1,478	1,480	1,461	1,521
2008	2,926	-1.08	1,467	1,459	1,484	1,474
2009	2,919	-0.24	1,460	1,459	1,507	1,429
2010	2,908	-0.38	1,456	1,452	1,530	1,389
2011	2,902	-0.21	1,454	1,448	1,553	1,355
2012	2,898	-0.14	1,457	1,441	1,576	1,327
2013	2,896	-0.07	1,460	1,436	1,616	1,283
2014	2,893	-0.10	1,462	1,431	1,655	1,238
2015	2,886	-0.24	1,461	1,425	n/a	n/a

Source: INSTAT and author's calculations

Table 3. 20. Population by age-group and gender in Albania, in percentages

Year	Gender	0-14	15-64	64+
1979	Female	37.0	58.0	6.0
	Male	37.0	57.0	4.0
	Total	**37.0**	**57.5**	**5.0**
1989	Female	33.0	62.0	4.0
	Male	28.0	64.0	8.0
	Total	**30.5**	**63.0**	**6.0**
2001	Female	30.0	63.0	7.0
	Male	28.0	64.0	8.0
	Total	**29.0**	**63.5**	**7.5**
2014	Female	18.0	69.0	13.0
	Male	16.0	62.0	23.0
	Total	**17.0**	**65.5**	**18.0**

Source: INSTAT, 2015
Note: In some cases numbers do not total to 100 and this could be due to rounding the number

The Total Fertility Rate (TFR) has steadily decreased from 2.3 children in 2001 to 1.63 in 2010 for women at reproductive age. The trend has however reversed since 2011, returning back to 2005 rate in 2014, namely 1.79 children (INSTAT, 2015a). Nevertheless, TFR differs across prefectures, with Dibra and Kukes having the highest rate, 2.56 and 2.33 children, respectively whereas Vlora and Gjirokaster the lowest rate, 1.37 and 1.53, respectively. The

data for TFR according to age groups suggest that it is generally women aged 18-40 that give birth whereas the rate is low for women at low and high end (INSTAT, 2015a). Most of females in Albania marry at age pre 19 and 20-24 years whereas males tend to marry later more precisely, during 20-34 age period.

Life expectancy in Albania has followed an increasing trend during the 2005-2014 period and is higher for females than males and for 2014 is reported to be 80.3 and 76.4 years, respectively (INSTAT, 2015a). The mean age of the population has increased to around 37 years in 2014 from 31.5 in 2005 and is higher for females than males during the whole period. The difference is mainly attributed to differences in mortality and emigration patterns.

From geographical perspective, internal movements of population seem to be prevalent in Albania with Tirana and Durres being the top destinations and at the same time having the highest population density. The data from the 2011 Census suggest that population in urban areas has considerably increased. Moreover, it has exceeded the population in rural areas constituting to 53 percent of population in 2011.

The number of private households is reported to be 722,262 in 2011 that represents a decrease in the absolute number of households by 4,633 units or 0.6 per cent compared to the previous census. The average size of a household declined from 4.2 in 2001 to 3.9 members in 2011 and the size is higher in rural compared to urban areas 4.2 and 3.6 respectively; whereas with regards to location, the size is highest in prefecture of Kukës and the lowest in Gjirokastër. The household heads are largely males with 86 to 88 percent during the 2002-2012 period (INSTAT, 2015a).

3.3 Data

For the purpose of the analysis in this thesis survey data from the Kosovo Household Budget survey 2011 (HBS) and the Albanian Living Standards Measurement Survey (LSMS) 2012 are used.[43]

[43] See Appendix 3 for LSMS 2012 and HBS 2011 questionnaires. Given LSMS questionnaire is too long, only parts utilized are included.

The Kosovar HBS 2011 is a nationally representative survey of 2,274 households carried out by the Kosovo Agency of Statistics and the World Bank. The data contains demographic information on the composition of the household by including information on each individual member of the household, income, consumption and expenditure, housing conditions and activities in business and agriculture, access to basic infrastructure and public services, etc. The diary for recording household food consumption contains information on the household's expenditure on food and non-food items, including imputed values of any home-produced food items that were consumed by the household.

The Albanian LSMS 2012 is also a nationally representative survey of 6,671 households conducted by Albanian Institute of Statistics and the World Bank, throughout a 12 month period. The sample is a random one based on the 2011 Census, consisting of two stages of selection. LSMS 2012 is rather richer in terms of information it provides compared to the HBS 2011. The diary for recording household food consumption collected information on daily food purchases, non-purchased food products consumed by the household and food eaten outside home. The broad range of the modules and questions allows the extraction of considerable information about the household characteristics and other variables suggested by literature.

In addition to the household module, it also contains modules on migration, fertility, agriculture, non-farm enterprises, health, subjective poverty, social protection and social capital. Namely, the Albanian LSMS includes migration modules, which provide information on previous and current migration of household members. The households are asked to list members no longer living in the household, those residing in other regions of Albania and those abroad. Amongst other information, the survey collects information on the number of current and previous migrants per household and their characteristics such as age, education, occupation and if migrant remitted during the last 12 months as well as the amount of remittances sent in cash and in-kind. Moreover, the households are asked whether they received remittances from non-household members such as relatives and friends and the amount received.

Contrary to Albanian LSMS 2012, Kosovar HBS 2011 does not have a migration module. Consequently, the survey does not provide information whether the household has someone abroad, previous migration or information on characteristics of migrants. Kosovar HBS 2011

only collects information on different sources of household income amongst which the amount of remittances received from members of the household (cash and in-kind) or relatives and friends. This means that households that have migrants who do not remit are not recorded and it is not clear for a small share (2.6%) of households that did not report any source of income whether they refused to do so or they did not receive remittances or any other source of income.

Moreover, households are asked to report sources of income earned (hence remittances) only during the last month. Thus, another limitation is that some households could have received remittances in previous months during that year but not in that particular month. As a result, they would be classified as non-recipient households. We would also have to assume that remittance recipient households in that particular month also received remittances during the entire year –which may not necessarily be the case.

3.4 Descriptive analysis using survey data

3.4.1 Education and poverty

The review in Chapter 2 suggests that studies have used a number of education indicators. Hence, in the first empirical chapter, four education estimators are used and the models are estimated separately using one education measure at a time. Tables 3.21-3.23 explore the theoretically expected relationship between education indicators and poverty. Table 3.21 presents the share of poor according to maximum level of education in the household in Kosovo and Albania. The data suggest that the share of poor is higher among households with a maximum education of less than primary or primary education in both countries (40.4% and 16.1% respectively). In line with human capital theory, the share of the poor decreases as the level of education increases, suggesting increased education has a poverty reducing effect in both countries.

Similarly, the exploration of poverty rate according to mean years of education of adult members also shows a poverty reducing effect of increased mean years of education in both countries (Table 3.22). More precisely, poverty rate is lower the higher the mean years of education.

Table 3. 21. Share of poor households according to maximum level of education in the household in Kosovo and Albania, in percentages

Maximum level of education	Kosovo		Kosovo	
	Non-poor	Poor	Non-poor	Poor
Primary	59.57	40.43	83.87	16.13
Secondary	70.32	29.68	87.29	12.71
Tertiary	88.06	11.94	93.03	6.97
Total	**70.30**	**29.70**	**87.70**	**12.30**

Note: Household is classified as poor if per adult equivalent consumption falls below the poverty line and non-poor if otherwise.

Table 3. 22. Share of poor households according to mean years of education of adult members in Kosovo and Albania, in percentages

Mean years of education of adults	Share of the poor in Kosovo		Share of the poor in Albania		Mean years of education of adults
	Non-poor	Non-poor	Non-Poor	Poor	
0-3	57.95	42.05	87.08	12.92	**0-3**
4-8	68.85	30.15	85.90	14.10	**4-8**
9-12	74.80	25.20	92.49	7.51	**9-12**
13-16	89.99	10.01	96.80	3.20	**13-16**
-	-	-	100.00	0.00	**17-21**
Total	**70.30**	**29.70**	**87.70**	**12.30**	**Total**

The data also suggest a decreasing effect from increased level of education of the head on poverty for both countries. More precisely, share of poor is highest amongst households with poorly educated heads and the share decreases the higher the education level (Table 3.23).

Table 3. 23. Share of poor households according to highest level of education attained by the head of the household in Kosovo and Albania, in percentages

Highest level of education of the head	Kosovo		Albania	
	Non-poor	Poor	Non-poor	Poor
Primary	64.82	35.18	84.53	15.47
Secondary	74.35	25.65	89.74	10.26
Tertiary	87.50	12.50	96.93	3.07
Total	**70.30**	**29.70**	**87.70**	**12.30**

Poverty and education in households with informally employed members

Figure 3.2 presents the share of the poor among households with and without informally employed members in both countries. The data indicate that the share of poor in Kosovo is similar among households with and without informally employed adults, although slightly lower for the latter. The share of poor in households with and without informally employed members is similar in Albania as well. More precisely, the share of poor is higher in households with informally employed members (14.0%) as compared to those with no informal employed members (11.7%). This said, despite the limitations, this proxy seems to reflect both lines of theory discussed in more detail in Section 2.3.2.1.

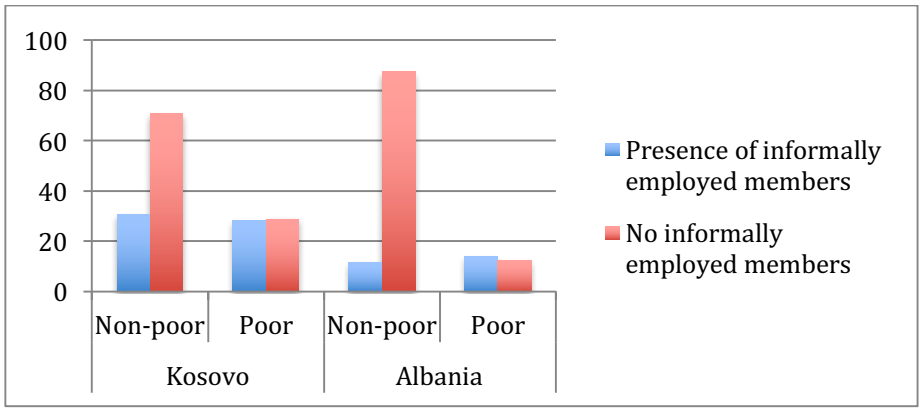

Figure 3. 2. Poverty rate in households with informally employed members in Kosovo and Albania, in percentages

The exploration of maximum level of education in households with informally employed adult members is presented in Table 3.24. The data suggest that the share of households with informally employed members is lowest amongst households with tertiary education as the highest grade attainment whereas higher and similar amongst the rest, in both Kosovo and

Albania. In other words, the data support the expectations, that household with higher (tertiary) education attainment are less likely to have an informally employed member.

Similarly, in line with theory, the share of households with informally employed members decreases with increased years of education. As expected, the share of households with an informally employed adult is considerably lower in households with 12 or more (mean) years of education in both countries. Moreover, amongst those with more than 16 years of education in Albania the share of households with informally employed members is zero (Table 3.24).

Table 3. 24. Maximum level of education in households with informally employed members in Kosovo and Albania, in percentages

Maximum level of education	Kosovo		Albania	
	Presence of informally employed member			
	No	Yes	No	Yes
Primary	52.47	47.53	70.22	29.78
Secondary	50.51	49.49	72.90	27.10
Tertiary	75.00	25.00	83.78	16.22
Total	**55.41**	**44.59**	**74.83**	**25.17**
Mean years of education				
0-3	50.72	49.28	74.09	25.91
4-8	53.28	46.72	71.69	28.31
9-12	56.85	43.15	82.28	17.72
13-16	80.25	19.75	91.20	8.80
17-21	-	-	100.00	0.00
Total	**55.41**	**44.59**	**74.83**	**25.17**

3.4.2 Remittances, poverty and education

Table 3.25 presents the examination of poverty among households that receive remittances and have members abroad for Kosovo and Albania. As expected theoretically, remittances seem to have a poverty reducing effect as the poverty rate is lower among recipient households as compared to non-recipients in both countries. Similarly, the share of poor is lower amongst households with migrants in Albania whereas the share is slightly higher in Kosovo and this could be due to very small sample.

The data also support theoretical expectations in terms of the relationship between education attainment and remittance receipt. Households with lower levels of education attainment and mean years of education of adult members are more likely to receive remittances in both countries (Table 3.26 and Table 3.27). Moreover, the share of households that receive remittances in general is smaller the higher the years of education of adults or education attainment in the household. This suggests that remittances in general flow more towards less educated households in both countries.

Table 3. 25. Share of poor in remittance recipient households and with members abroad in Albania and Kosovo, in percentages

	Kosovo		**Albania**	
Remittance recipient	**Non-Poor**	**Poor**	**Non-poor**	**Poor**
No	69.58	30.42	87.22	12.78
Yes	74.44	25.56	90.71	9.29
Total	**70.30**	**29.70**	**87.70**	**12.30**
Presence of migrant				
No	70.35	29.65	86.95	13.05
Yes	68.11	31.89	90.59	9.41
Total	**70.30**	**29.70**	**87.70**	**12.30**

Table 3. 26. Maximum level of education and mean years of education of adults in remittance recipient households in Kosovo, in percentage

Kosovo	**Remittance recipient households**	
Maximum level of education	**No**	**Yes**
- Primary	56.19	43.81
- Secondary	53.63	46.37
- Tertiary	90.18	9.82
Total	**100.00**	**100.00**
Mean years of education of adults		
0-3	16.17	29.05
4-8	44.84	42.77
9-12	32.24	25.03
13-16	5.89	3.16
Total	**100.00**	**100.00**

Table 3.28 presents the distribution of households with and without migrants according to maximum level of education and mean years of adult members in the household for Albania. The data indicate that it is generally households with low average years of education in Albania that have someone abroad.

Table 3. 27. Distribution of maximum level of education and mean years of education of adults in households with and without migrants in Albania, in percentage

Albania	**Remittance recipient household**	
Maximum level of education	**No**	**Yes**
- Primary	31.52	47.15
- Secondary	43.03	35.69
- Tertiary	25.45	17.15
Total	**100.00**	**100.00**
Mean years of education of adults		
0-3	20.09	15.85
4-8	60.46	62.85
9-12	11.29	13.33
13-16	8.00	7.72
17-21	0.17	0.24
Total	**100.00**	**100.00**

Table 3. 28. Distribution of maximum level of education and mean years of education of adults in households with migrants in Albania, in percentages

Albania	**Presence of migrant**	
Maximum level of education	**No**	**Yes**
- Primary	31.72	42.10
- Secondary	42.94	38.04
- Tertiary	25.34	19.86
Total	**100.00**	**100.00**
Mean years of education of adults		
0-3	20.31	16.45
4-8	60.66	61.59
9-12	11.14	13.15
13-16	7.75	8.52
17-21	0.14	0.29
Total	**100.00**	**100.00**

3.4.3 Poverty and fertility

Given the presence of extended households, an indicator of average number of children in the household at family level is calculated for Albania. However, the data for Kosovo do not allow identification of additional families within the household. More precisely, it is not possible to identify the children belonging to mother in each family within the household. Hence, only the number of children of the household head and his spouse are considered for Kosovo. An exploration of the relationship between fertility and mother's education with the data suggest that in households with high number of children the share of mothers with higher education attainment is relatively low in both Kosovo and Albania[44] (Table 3.29 and Table 3.30).

Table 3. 29. Number of children in the household according to highest level of education of the mother in Kosovo, in percentages

Number of children	Highest level of education attained by mother		
	Illiterate	Primary	Tertiary
0	55.05	18.95	25.00
1	64.19	17.12	18.69
2	49.04	20.94	30.02
3	50.49	22.09	27.42
4	54.46	26.43	19.43
5	67.48	20.33	12.20
6	76.74	18.60	4.65
7	53.33	33.33	13.33
8	100.00	0.00	0.00
10	100.00	0.00	0.00
Total	**55.54**	**20.93**	**23.57**

[44] Except for the household with 5 children in Albania however, the share of such households in total sample is less than 1 percent.

Table 3. 30. Highest level of education attained by mothers (18-45 years) in the household according to average number of children per family in Albania, in percentages

Average number of children	Highest level of education attained by mothers in the hh		
	Primary or less	Secondary	Tertiary
0	35.89	34.93	29.19
1	43.89	35.04	21.06
2	50.99	33.94	15.06
3	58.54	33.14	8.32
4	68.65	27.03	4.32
5	72.92	25.00	2.08
6	92.86	7.14	0.00
7	75.00	25.00	0.00
Total	**51.99**	**33.33**	**14.68**

The literature suggests that poverty and fertility are jointly determined. Since direct indicators of fertility cannot be included, the highest level of education of the mother is included as fertility proxy in the first empirical analysis (Chapter 4). Table 3.31 presents poverty levels according to the highest level of education attained by the mother in the household. As expected theoretically, the data for both countries suggest that households with less educated mothers (illiterate and primary) have higher levels of poverty whereas the opposite holds for those with more educated mothers.

Table 3. 31. Share of poor households according to highest level of education attained by mother of the household in Kosovo and Albania, in percentages

Highest level of education of mother	Kosovo		Albania	
	Non-poor	Poor	Non-poor	Poor
Illiterate	68.97	31.03	83.28	16.72
Primary	62.62	37.38	85.21	14.79
Higher	83.29	16.71	92.05	7.95
Total	**70.3**	**29.7**	**87.70**	**12.30**

3.4.4 Poverty, remittances and migration in female-headed households

Figure 3.3 presents the examination of poverty in female-headed households. Theoretically, female heads are expected to be poorer due to lower engagement in the labour market and in general lower earnings compared to men. The data support the theoretical expectations for Kosovo, the share of poor is higher amongst female-headed households (Table 3.32). However, the data does not seem to support this hypothesis for Albania given the share of poor is lower amongst female-headed (11.0%) as compared to male-headed households (12.4%).

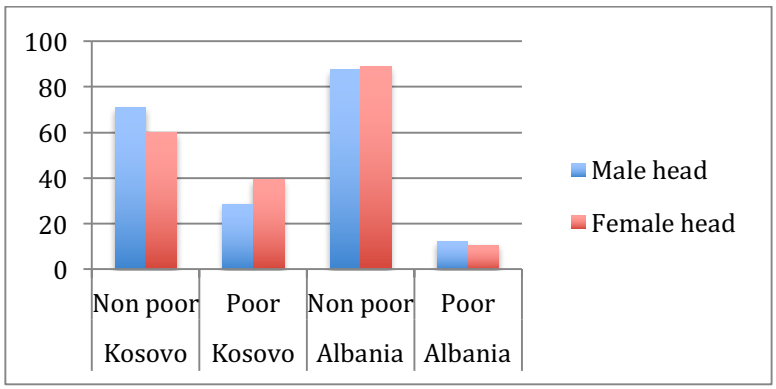

Figure 3. 3. Figure 3. 3. Poverty rate and distribution of the poor in female-headed households in Kosovo and Albania, in percentages

Table 3. 32. Share of remittance recipients in female-headed households in Kosovo, in percentage

Kosovo	Remittance recipient household	
Head of the household	**No**	**Yes**
- Male	86.91	13.39
- Female	67.18	32.82
Total	**85.31**	**14.69**

A potential reason for lower poverty amongst female-headed households compared to their counterparts or simply for lower than expected poverty incidence could be receipt of remittances from their migrant family members or relatives (Section 3.4.4). Table 3.33 explores the link between head of the household and remittance receipt and migration in Kosovo and Albania, respectively. The data seem to support this expectation as 37.5 percent

of female heads have someone abroad in Albania whereas 28.2 percent of them receive international remittances in Albania and 32.8 percent in Kosovo.

Table 3. 33. Share of remittance recipients and households with migrants in male and female-headed households in Albania, in percentages

Albania	Remittance recipient household		Presence of migrant	
Head of the household	**No**	**Yes**	**No**	**Yes**
- Male	87.49	12.51	81.06	18.94
- Female	71.85	28.15	62.53	37.47
Total	**86.12**	**13.88**	**79.45**	**20.55**

3.4.5 Poverty and unemployment

Table 3.34 presents the exploration of the relationship between poverty and unemployment for both Kosovo and Albania. The data suggest that in line with expectations, there is an increasing trend in the share of the poor as the number of unemployed adult members increases in both countries. More precisely, the share of poor is lowest amongst those with no unemployed adults whereas is highest in households with three or more adults.

Table 3. 34. Poverty according to the presence of unemployed members in the household in Kosovo and Albania, in percentages

Unemployment Indicators	Kosovo		Albania	
	Non-poor	**Poor**	**Non-poor**	**Poor**
No unemployed	75.19	24.81	89.67	10.33
Presence of up to 2 unemployed	70.46	29.54	81.32	18.68
Presence of 3 or more unemployed	58.07	41.93	74.38	25.62
Total	**87.70**	**12.30**	**70.30**	**12.30**

The data in Table 3.35 suggest that as expected there is a relationship between maximum level of education in the household and the share of unemployed adult members. More precisely, the share of households with no unemployed members is lowest in households with

tertiary maximum level of education attained for both countries and similarly for the rest of unemployment indicators. The share is generally highest amongst households with secondary education rather than primary but this could be due to this group consisting for the largest share in the sample. Therefore, the data seem to support theoretical expectations that education increases employment opportunities thus lower the risk of unemployment.

Table 3. 35. Maximum level of education in the household according to number of unemployed adults in Kosovo and Albania, in percentages

Indicators	Kosovo				Albania			
	Primary	Secondary	Tertiary	Total	Primary	Secondary	Tertiary	Total
No unemployed	33.38	49.91	16.71	**100.00**	31.20	43.07	25.73	**100.00**
Presence of up to 2 unemployed	28.66	51.81	19.53	**100.00**	26.93	50.16	22.92	**100.00**
Presence of 3 or more unemployed	21.72	64.15	14.13	**100.00**	24.63	50.31	25.06	**100.00**

3.4.6 Poverty according to ethnicity

Figures 3.4 and 3.5 present the distribution of poor according to ethnicity of the household head. The examination of the poverty rate according to ethnicity shows that as expected, compared to households of other ethnicity, the share of poor is lowest among households of Albanian ethnicity in both Kosovo and Albania.

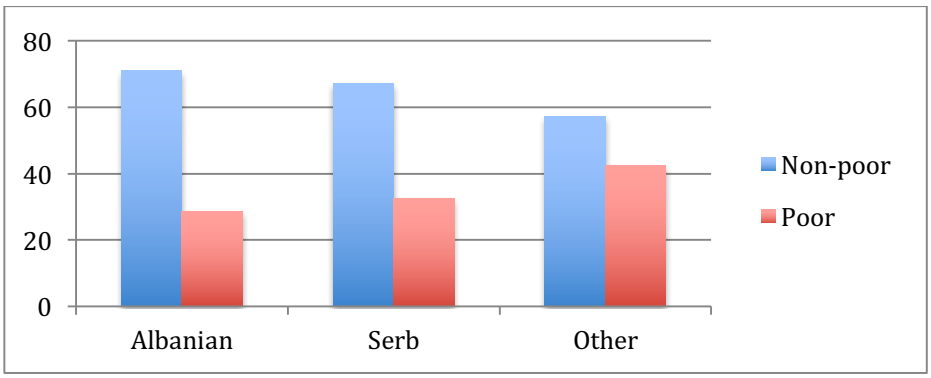

Figure 3. 4. Poverty rate by ethnicity of the head in Kosovo, in percentages

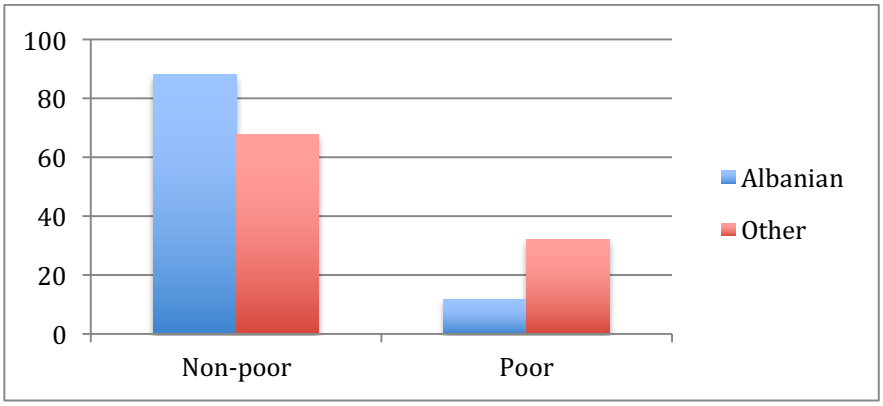

Figure 3. 5. Poverty rate by ethnicity of the head in Albania, in percentages

3.4.7 Poverty rates and poverty by location and region

The exploration of distribution of poverty by location shows that poverty rate is higher in rural areas in Kosovo whereas the opposite holds for Albania (Figure 3.6). In terms of the region of residence, Gjilan and Prizren have the highest share of poor in Kosovo (Figure 3.7) whereas the share of poor in Albania is highest in the Coastal region and Tirana, only around 17 and 12 percent, respectively (Figure 3.8).

Table 3.36 and Table 3.37 present the distribution of remittance recipient households in Albania and Kosovo, respectively. The data suggest small differences in migration behaviour whereas no clear differences in remittance patterns in Albania. As expected rural households in Kosovo are more likely to receive remittances.

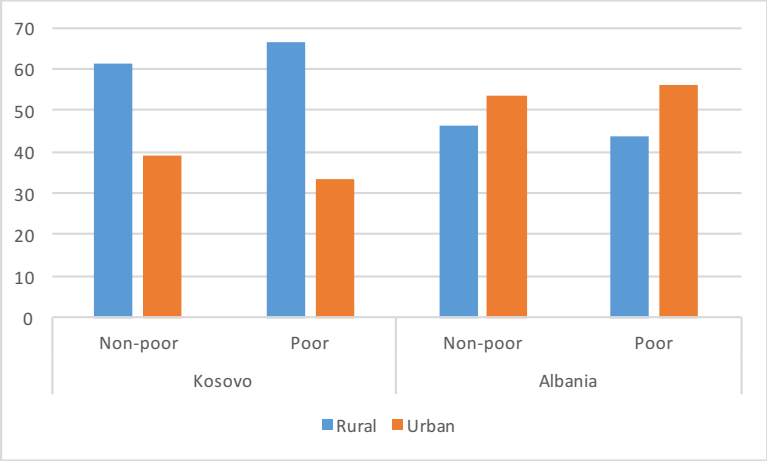

Figure 3. 6. Distribution of the poor by urban/rural location in Kosovo and Albania, percentages

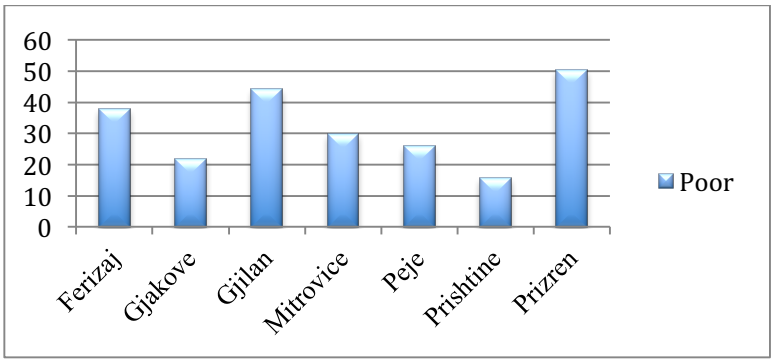

Figure 3. 7. Share of poor across seven regions of residence in Kosovo, in percentages

In terms of region, the data suggest that the share of remittance recipient households is higher in other regions as compared to those in Tirana, except for the Mountain region. Similarly, in Kosovo as expected the share of remittance recipient households is lowest in Prishtina.

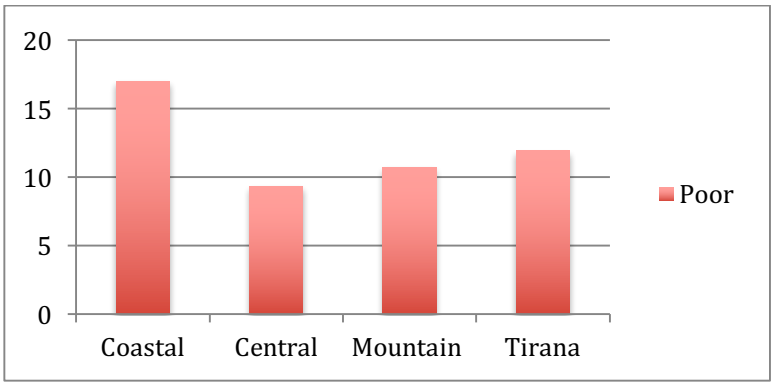

Figure 3. 8. Share of poor across four main regions of residence in Albania

Table 3. 36. Distribution of remittance recipient households in Albania, in percentages

	Remittances	
Area	**Non-Poor**	**Poor**
- Urban	81.13	18.87
- Rural	81.93	18.07
Region	**81.56**	**18.44**
- Central	82.05	17.95
- Coastal	74.28	25.72
- Mountain	91.76	8.24
- Tirana	83.33	16.67
Total	**81.56**	**18.44**

Table 3. 37. Distribution of remittances recipient households in Kosovo, in percentages

Remittances		
Area	**Non-Poor**	**Poor**
- Rural	79.30	20.70
- Urban	87.23	12.77
Total	**83.64**	**16.36**
Region		
- Ferizaj	76.21	23.79
- Gjakove	85.15	14.85
- Gjilan	84.33	15.67
- Mitrovice	77.42	22.58
- Peje	86.65	13.35
- Prishtine	88.25	11.75
- Prizren	86.15	13.85
Total	**100.00**	**100.00**

3.5 Conclusions

This chapter provides a descriptive analysis of poverty, education, labour market, migration and fertility; it also explores the theoretically expected interrelations between these factors. Although the proportion of population living in poverty decreased over the last years, poverty rate remains high and both Kosovo and Albania are among the poorest countries in Europe. In addition, poverty in both countries seems to be an urban phenomenon largely due to shift of rural population to urban areas. Disparities in poverty levels across regions are evident over the whole period. Despite the solid economic growth during the post-conflict period, Kosovo recorded persistently high unemployment rates, in particular amongst the youth. Despite performing better than labour market in Kosovo, the situation in Albania is also unsatisfactory. Sizable informality is also a common characteristic of both countries and seems to be an alternative to high unemployment and poor opportunities in the formal labour market.

The data suggest that education attainment of population has increased in both countries, amongst females in particular. In general population attained secondary education in both countries whereas the share of highly educated population is still relatively low. However, given the relatively high share of youth population and increased enrolment in tertiary

education, the share of population with tertiary education attainment is expected to increase in the future. Besides, gender disparities in education remain evident with males being more educated in general.

Evidence provided in this chapter supports the theoretical expectations that employment rate is higher for individuals with higher education attainment and similarly, unemployment rate is highest amongst those with no education whereas lowest for those with tertiary education attainment in both countries. Gender disparities in chances of employment are also evident. However, as at tertiary education level the rates of employment are similar for males and females which suggests that females who invest in their human capital endowments have similar chances of employment as males. Similarly, average salary seems to be related to level of academic qualification in Kosovo and Albania. The average salary increases for higher attained levels of education, and is particularly high for tertiary education.

Traditionally both Kosovo and Albania had a sizable Diaspora and remittances have played an important role in improving the welfare of their citizens and reducing poverty. In Kosovo migration is considered to have been of both political and economic nature whereas in Albania largely motivated by economic factors. In addition, the bond of Kosovar migrants to their families remains strong. Besides remittances received from family members, it has been suggested that receipt of remittances from relatives and friends is quite prevalent in Albania, particularly among the poor. Different from Albania migration in Kosovo in general is not considered as brain drain yet, it may become a problem in the future due to high youth unemployment rates.

The population of Albania has experienced a decreasing trend from 1990 after the fall of the Communist regime. Massive migration and the decline in fertility are considered as two of the main reasons of this decline. In contrast, population in Kosovo seems to have grown although at a slower rate during the 2011-2014 period. Population however is aging in both countries and this could be mainly due to decreased fertility, mortality and emigration patterns. Population is concentrated more in rural areas in Kosovo whereas in urban ones in Albania. Descriptive analysis using household level data are largely in support of theoretical expectations. In line with human capital theory, the share of the poor decreases as the level of education increases irrespective of the education measure used, suggesting that increased education has a poverty reducing effect in both countries.

In terms of informal employment, data seems to reflect both lines of theory. Moreover, the data support the expectations, that households with higher education attainment are less likely to have an informally employed member. Similarly, remittances seem to have a poverty reducing effect as the poverty rate is lower among recipient households as compared to non-recipients in both countries; and remittances are in general found to flow towards less educated households.

As expected theoretically, households with less educated mothers (illiterate and primary) have higher levels of poverty whereas the opposite holds for those with more educated mothers. Data also support expectations that female-headed households are poorer in Kosovo whereas this hypothesis is not suggested for Albania given the share of poor is lower amongst female-headed households. Data regarding unemployment support expectations in terms of its relation with poverty and education. More precisely, the share of poor increases with increased number of unemployed adults and education increases employment opportunities thus lower the risk of unemployment.

CHAPTER 4

THE EFFECT OF EDUCATION ON POVERTY IN KOSOVO AND ALBANIA

Table of Contents

4.1 Introduction

Chapter 2 reviewed the empirical studies, assessed the theoretical basis of the studies and went through the theories behind different markets that the households are making decisions in. Different from many studies in this literature selection of the independent variables and the modelling approach in this study is based in a theoretical framework. This chapter develops a model to investigate determinants of poverty in Kosovo and Albania, with specific focus on the effect of education. For the purpose of this analysis, data from Kosovar Household Budget Survey 2011 and Albanian Living Standards Survey 2012 conducted by the respective statistical institutes of both countries and the World Bank are utilized.

Given the complementarity understandings deriving from poverty and consumption functions, both are estimated in this chapter. More precisely, Ordinary Least Squares (OLS) estimation technique is used to estimate the effect of education and other determinants on natural logarithm of monthly per adult equivalent consumption whereas Probit is utilized to estimate their effect on the probability of a household being poor. In addition, to account for non-linearities and to gain further insights as to how the effect of determinants of household welfare changes across the entire welfare distribution, a quantile model is also adopted.

Section 4.2 presents a detailed explanation of the empirical approaches to investigate determinants of poverty and the methodological issues related to them. Section 4.3 outlines the selection of the dependent and the independent variables, their measurement and limitations when evident. The theoretical consideration discussed in Chapter 2 and the empirical review of the studies form the basis for the selection of explanatory variables. Theory suggests that certain decisions that households make are simultaneously determined. To control for the effect of endogenous variables only pre-determined and exogenous variables are used to minimize the endogeneity bias as much as possible. Therefore, independent variables are grouped based on household characteristics and the markets that a household makes decisions in. Following a presentation of descriptive statistics in Section 4.4, a discussion of diagnostics tests results and regression estimates is provided in Section 4.5 for both Kosovo and Albania. Given the focus of the thesis, four models are estimated using four different education measures. The results of diagnostic tests as well as the theoretical considerations form the basis for the choice of the models to be interpreted. Section 4.7 concludes.

4.2 The estimation framework

The review of studies in Chapter 2 suggests that there are two main approaches in estimating the determinants of poverty: a) the continuous approach recognised as the 'welfare function' and b) the discrete approach defined as 'the poverty function'. The welfare/consumption function uses a continuous representation of the poverty status of the household, such as household consumption expenditures or income. The theoretical discussion in Section 2.3.1 suggests that consumption should have a log form. An advantage of the continuous approach is that it uses all the relevant information across the whole distribution of consumption/income (Bruck et al., 2007; Andersson et al., 2006). However, an important shortcoming of this approach is that it is often assumed that there are constant relationships (either in absolute or relative terms) over the entire distribution, that is the effect of changes in the variables is assumed to be the same for poor and non-poor households (Fagernas and Wallace, 2007; Bruck et al., 2007). In other words, factors that increase consumption expenditure are assumed to reduce poverty. This could be a major problem due to effects of non-linearities and an approach that deals with this problem is estimation of welfare Quantile regressions.

The discrete representation of poverty provides a probabilistic statement about poverty. However, it arguably involves unnecessary loss of information by transforming household consumption or income into a discrete/binary indicator of poverty (Bruck et al., 2007). It also involves arbitrariness in setting the poverty line (Fagernas and Wallace, 2007). Similar to the continuous approach, this approach is not sensitive to variations within the poor.

Given the complementary insights from the continuous and discrete models, both are used and compared. The continuous model is estimated using an OLS regression whereas the analysis of poverty adopting a discrete representation is estimated using a Probit regression. Quantile regressions are also estimated to gain further insights into how the determinants of household welfare change across the entire welfare distribution,

Household consumption equation - continuous approach

In the continuous approach the determinants of poverty are estimated using the following equation:

$$Y_i = \alpha + \beta E_i + \gamma H_i + \delta R_i + \vartheta F_i + \Omega \mathrm{A}_i + \omega M_i + \varphi L_i + \eta C_i + \varepsilon_i \qquad (5)$$

where Y_i is the natural log of per adult equivalent consumption for household *i* whereas *E, H, R, F, A, M, L* and *C* are vectors of variables measuring education, household composition, regional variations, fertility, physical assets, migration/remittances, labour market and ethnicity, α is the constant term and *β, γ, δ, ϑ, Ω,* and *η* are the corresponding vectors of coefficients. *ε* is a normally distributed random error term which is assumed to be uncorrelated with the explanatory variables. Most variables are measured at the household level, whereas the regional variation variables are defined at the regional level.

Household poverty equation – discrete approach

To estimate the determinants of poverty using the discrete model, Probit estimation technique is employed using the same independent variables as in equation 5. Household is classified as poor if per adult equivalent consumption falls below the poverty line and non-poor if otherwise. Poverty line in Kosovo is set at 1.72€ per adult equivalent per day whereas in Albania at 35€ per month (around 1.16€ per day). More precisely,

$$\begin{aligned} p_i &= 1 \; if Y_i < z \\ p_i &= 0 \text{ otherwise} \end{aligned} \qquad (6)$$

where p_i is a categorical poverty indicator for household *i*, *z* is the poverty line and ϕ is the cumulative distribution function. β are the parameters that will be estimated by maximum likelihood and X_i is a vector of explanatory variables. The binary specification then is estimated using the following equation:

$$Prob(p_i = 1|X_i) = \phi(X_i\beta) \qquad (7)$$

Quantile regression approach

The Quantile regression approach allows the determinants of poverty to differ at different parts of the welfare distribution, which is an advantage of these regressions over the mean regressions. Non-linearities in the relationship between independent variables and consumption are expected given the effect of independent variables may be different for households at the lower (poor) and upper (rich) consumption quantiles. Hence, the Quantile estimation technique is utilized to explore these potential linearities. Similar to median regression, Quantile regression estimates an equation expressing a quantile of the conditional distribution, although one that generally differs from the median (0.5 quantile) and not the mean.

Using the same set of explanatory variables as in equation (5) and (7) a semi-parametric model is estimated as following:

$$Q_\theta = (Y_i|X_i) = \alpha_\theta + X_i\lambda_\theta \quad (8)$$

where Q_θ denotes the θ quantile of total household consumption, X_i the vector of explanatory variables and α_θ is the intercept for the specific quantile θ. The household consumption y_i is divided into 9 quantiles $\theta\epsilon$ {0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9}. In this model the determinants of welfare are estimated at specific quantiles of its distribution rather than at the conditional sample mean of the dependent variable in the linear OLS model. An advantage of Quantile regression is higher robustness against outliers as compared to least squares regression as well as better consistency performance under weaker stochastic assumptions (Koenker and Hallock, 2001; Bruck et al., 2007). Quantile regression estimators are also more efficient than least square estimators if the distribution of the error term is non-normal (Maguza-Tembo and Edriss, 2014).[45]

For the purpose of this analysis survey data from the Kosovar Household Budget Survey 2011 (HBS) and the Albanian Living Standards Measurement Survey (LSMS) 2012 are used. The Kosovar HBS 2011 is a nationally representative survey of 2,274 households carried out

[45] The Quantile regression is estimated simultaneously for the nine quantiles using sqreg command in Stata. Sqreg produces the same coefficients as qreg command for each quantile. Sqreg obtains a bootstrapped variance-covariance matrix of the estimators that includes between-quantiles blocks. Following Kolenikov (2008), 500 replications are used.

by the Kosovo Agency of Statistics and the World Bank. The Albanian LSMS 2012 is a nationally representative survey of 6,671 households conducted by Albanian Institute of Statistics and the World Bank, throughout a 12 month period. Albanian LSMS 2012 is rather richer in terms of information it provides compared to the Kosovar HBS 2011. In addition to the household module it contains modules on migration, fertility, agriculture, non-farm enterprises, health, subjective poverty, social protection and social capital.

4.3 Dependent and Independent variables and their measurement

4.3.1 Dependent variables

Despite acknowledging the multidimensional nature of poverty, a monetary measure of poverty is used in this study given the nature of the data.[46] Household is the basic unit of analysis. According to the standard economic theory, households maximize utility subject to certain constraints such as income, time and production function. Since utility is unobservable, for the purpose of empirical analysis an indirect indicator is used instead. Although both consumption and income are considered as suitable measures of welfare as they both reflect a household's ability to meet needs, research suggests[47] the following reasons for preferring expenditures to income: a) it is considered a more appropriate indicator if one is concerned with realized welfare rather than potential welfare[48] and it fluctuates less than income due to households smoothing their consumption over time; b) it is considered a better indicator for developing countries due to a large share of the labour force being engaged in self employment activities; c) due to a smaller measurement error in measuring consumption as households are more willing to report consumption than income, and generally tend to underestimate the later; d) in some countries, households might consume agricultural products transferred from the relatives, parents or friends, which cannot be measured within income; and e) the poverty lines used in literature to differentiate poor from non-poor households are based on expenditure rather than income data. A common limitation of both measures is that they fail to include important aspects such as leisure and several dimensions of quality of life.

[46] A detailed discussion on several approaches in defining and measuring poverty is provided in Chapter 1.
[47] Appleton (1995); Bruck (2001); Mukherje and Benson (2003); Andersson et al. (2006); Fagernas and Wallace (2007). For a more detailed discussion see Section 2.2.
[48] Income is rather a measure of welfare opportunity, whereas consumption can be interpreted as a measure of welfare attainment (Atkinson, 1989 in Andersson et al., 2006).

To take into account different household needs and therefore to be able to compare households with different composition, per adult equivalent consumption expenditures is used as a measure of welfare as opposed to per capita consumption, though neither is a perfect base (Section 2.3.1). A drawback of per capita consumption is the assumption that the needs of everyone in the household are the same and everyone receives an equal allocation of items consumed irrespective of age or gender. In addition, it ignores economies of scale. Alternatively, adult equivalences reflect the lower needs of children and also account for economies of scale. However, wide ranges of adult equivalence indicators exist in literature and all weights are arbitrary to a degree. Another drawback of this approach relates to the consumption of non-food items not being closely linked to age or gender.

In addition to dividing consumption by adult equivalent scales, for the case of Albania following the Statistical Office (INSTAT) the regional price differences are taken into account by weighting the household consumption expenditures by Paasche Index. However, it is not possible to control for price differences across regions in Kosovo due to data unavailability. Given KAS has not accounted for price differences when calculating the real consumption of the household, it seems reasonable to assume that the prices across regions do not seem to differ much. The region dummies included in the regression partly account for this effect.

Also it is of note that the price index for poorer households is often different from that of better off households – mainly because they spend their incomes in different ways (e.g. a greater proportion on food items). It is also important to account for wage differences in addition to prices[49] (as suggested in Section 2.3.1) however, given the data unavailability it is not possible to control for these differences in the models estimated.

An absolute rather than relative poverty line is used in this study given the absolute poverty perspective is considered to be more relevant for Kosovo and Albania, considering their current stage of development (as a considerable share of the population still strives to meet basic consumption needs). The national poverty lines developed by the respective Agencies of Statistics are utilized in this study as well.

[49] Given differences between households in certain regions may arise because the prices are higher but not the wages, which results in further deterioration of the poverty state of the households in such regions.

The poverty lines in both countries are established using the Cost of Basic Needs method (Ravallion, 1998). For Kosovo, the food component of the poverty line is anchored to calorie intake of 2,100 kilocalories per person per day, based on the average consumption patterns of households near the poverty line. The non-food component of the poverty line is based on the share of total expenditures that poor households allocate to non-food items. The poverty line is the sum of the food and non-food components. The non-food items include the rental value of housing, services such as basic utilities, health and education. The poverty line for Kosovo is set at 1.72€ per adult equivalent per day[50] and has been adjusted to reflect 2011 prices.

Considering the Food and Agriculture Organization (FAO) recommendations on the minimum calorie requirements according to age and gender, adjusted to the population distribution in Albania in 2001, the required calorie intake is set at 2,288 calories per day. The non-food component of the poverty line is calculated based on the percentage of non-food expenditure of those households that spend for food consumption an amount approximately equivalent to the food poverty line. The poverty line has been set at 4,891 Albanian Lek (ALL) (around 35€) per month and consumption has been deflated to real values based on 2002 prices.

4.3.2 The independent variables and their measurement

This section outlines the independent variables and their measurement as well as limitations when evident. The review in Chapter 2 sets the basis for selection of independent variables. Similar to many studies in the literature, access to information on some variables is a constraint in this study.

In addition to the exogenous and pre-determined factors that affect household poverty, factors that theoretically are considered to be endogenous are also controlled in the models. Hence, their effect in the model is measured by proxies which can be considered as pre-determined and exogenous. According to Glewwe (1991) using pre-determined variables can affect their interpretation due to potential problem of sample selection bias. Interpreting estimates of the parameters in equations (5) (7) and (8) as precise estimates of the determinants of household consumption and poverty is inappropriate for explanatory variables that are (not truly

[50] The monthly value of the poverty line is calculated for each household considering the month in which the household was interviewed.

exogenous) pre-determined (Glewwe, 1991). For instance, both stocks of human and certain types of physical capital as well as migration are predetermined (a result of past choices) as they are rather accumulated based on long-term plans for maximizing household welfare. Hence, the benefits to a typical household of owning a particular asset or from an investment may be overstated to the extent that households accumulate particular assets for which they have an -unobservable- comparative advantage. Thus interpretation of the estimated parameters of pre-determined indicators in terms of the effects on other households becomes challenging as the effect could be overstated.

Table 4.1 presents a description of the variables that are used in the empirical models. The variables are grouped based on the markets households make decisions in and the characteristics of the household discussed in more detail in Chapter 2.

Education

Education helps lower poverty risk by imparting individuals with knowledge and skills that are associated with improved employment and earnings opportunities (in both formal and informal market). In addition it may improve the ability to set up a family business as well as improve productivity in farming. Education is also expected to affect migration decision, level of remittances as well as fertility (Section 2.3.2.1). Therefore, the effect of education on consumption is expected to be positive. Given education attained in the past is irreversible and fixed at present time thus, does not increase with household consumption in this analysis it is considered as pre-determined.

At the household level, education of the head is one of the most commonly used indicators in the literature (Olaniyan, 2000; Okoije, 2002; Fissuh and Harris, 2004; Geda et al., 2005; Jamal, 2005; Nestic and Vecchi, 2007; Achia et al., 2010; Himaz and Aturupane, 2011; Osowole et al., 2012; Ogundari, 2012; Rolleston, 2011). However, it is not the most appropriate given some households may refer to the oldest member of the family as the head out of respect, although that person may not be an income earner or a decision maker; and this could be well the case in both countries under investigation, especially Kosovo.

Table 4. 1. Independent variables to be included in the model

Variable	Description
Dependent variables	
LrealconsAE	Natural logarithm of per adult equivalent monthly consumption of the household
Poor	1 if household per adult equivalent monthly consumption falls below the poverty line; 0 otherwise
Independent variables	
Education	
Share of education:	
SharePrimary	(Number of adult members with less than primary or primary education level/ number of adults)*100
ShareSecondary	(Number of adult members with secondary education level/number of adults)*100
ShareTertiary	(Number of adult members with tertiary education level/ number of adults)*100
Maximum level of education	
Mprimary	1 if maximum level of education in the household is less than primary or primary; 0 otherwise (reference category)
Msecondary	1 if maximum level of education in the household is secondary; 0 otherwise
Mtertiary	1 if maximum level of education in the household is tertiary; 0 otherwise
Mean years of education	
Meanyearsm	Mean years of education of adult members
Education of the head: Headprimary	1 if the head of household has less than primary or primary education attainment, 0 otherwise (reference category)
Headsecondary	1 if the head of household has secondary education attainment, 0 otherwise
Hseadtertiary	1 if the head of household has tertiary education attainment, 0 otherwise
Household characteristics	
Medianage	Median age of the adult members
Medianage2	The squared median age of adult members
Nounemployed	If none of the adult members is unemployed; 0 otherwise
Unemployed2	If up to two adult members are unemployed; 0 otherwise
Unemployed3more	If three or more adult members are unemployed; 0 otherwise
Maleratio	Male adult members ratio (Number of male adult members/ number of adults members)*100
Informalproxy	1 if household has someone employed in the informal sector; 0 otherwise

Table 4.1. Independent variables to be included in the model (Cont.)	
Fertility	
MotherIlliterate	1 if mother is illiterate or attained less than primary education; 0 otherwise
MotherPrimary	1 if highest level of education attained by mother is primary; 0 otherwise
MotherHigher	1 if highest level of education attained by mother is secondary or tertiary; 0 otherwise (reference category)
Regional variations	
Urbanrural	1 if household resides in urban area; 0 if in rural area
Ferizaj	1 if household resides in the region of Ferizaj; 0 otherwise
Gjilan	1 if household resides in the region of Gjilan; 0 otherwise
Mitrovice	1 if household resides in the region of Mitrovice; 0 otherwise
Gjakove	1 if household resides in the region of Gjakove; 0 otherwise
Peje	1 if household resides in the region of Peje; 0 otherwise
Prizren	1 if household resides in the region of Prizren; 0 otherwise
Prishtine	1 if household resides in the region of Prishtina; 0 otherwise (reference category)
Central	1 if household resides in Central region; 0 otherwise
Coastal	1 if household resides in Coastal region; 0 otherwise
Mountain	1 if household resides in Mountain region; 0 otherwise
Tirana	1 if household resides in Tirana; 0 otherwise (reference category)
Migration/remittances	
Migranthh	1 if household has someone residing abroad (a migrant); 0 otherwise
Assets	
Areaofland	Area of land that household owned in acre for Kosovo and square feet for Albania
Ethnicity	
EthnicAlb	1 if household head is Albanian; 0 otherwise (reference category)

Therefore, it is more appropriate to use the maximum level of education of adults[51] in the household - given the person with highest level of education is more likely to be employed and/or earn more hence, be the main earner. Also inclusion of dummies for different levels of education allows exploring non-linearities in the effect of education. Three dummy variables are constructed and indicate: if the maximum level of education in household is less than

[51] Individuals aged 15 years of older are defined as adults.

primary or primary, secondary or tertiary[52]. The reference category includes the household where maximum level of education is less than primary or primary.

Another appropriate measure of education in the household is the share of adult members with respective level of education attained. This indicator includes every adult in the household instead of checking only for the household head or the individual with highest education attainment. In other words, it does not have the disadvantage of the approximation problem. It also takes care of possible outliers, as using maximum level of education attained by adults may not necessarily represent the education situation in the household. More precisely, the highly educated individual could be an outlier in terms of education attainment in the household as he/she could be highly educated whereas the rest of adults may have lower education attainment. This said, three indicators are constructed and measured in percentage and indicate the share of adult members with less than primary or primary, secondary and tertiary education attainment, respectively, in total adults. The share of adult members with less than primary or primary education is left as reference category.

It should be noted that the education information is missing for around 3.4 percent (685 adults) of adults in the Albanian LSMS 2012. Therefore, education measures are generated by only considering the education of adults for whom education information is available. Given the highest level of education of the mother is included as fertility proxy, education of the mother is not considered when generating the abovementioned education indicators in order to avoid double counting. However, for 5 percent of households there is no information on education of the adults because the mother is the only adult present in the household. To avoid dropping such households, the missing values are replaced with mother's education when information on her education attainment is available. For 1.2 percent of the households where no information on education attainment of the adults is available, it is assumed that highest education attainment in such households is less than primary or primary.

An indicator of years of education is also included in another specification, however, the mean years of education of adult members are considered instead of the head, different from the common approach in literature. Given information on the individual's exact years of

[52] Given education includes nine or more categories and since they differ between LSMS and HBS, before generating education variables, education levels are grouped in three main levels namely, less than primary or primary, secondary and tertiary (Appendix 4A.6).

schooling is not provided by the survey, this indicator is calculated based on the duration of each level as defined by the respective laws on pre-university education and higher education. Given both countries introduced a new education system a differentiation between those in old and new systems is made.[53] Similar to the previous indicators, for 5 percent of households mother is the only adult present thus for such households years of education of mother is used. For around 1.2 percent of households where no information on education of adults is available it is assumed that mean years of adults in that particular household is 4 years. Around 65 percent of adults in households where mean years of education is missing are aged 65 or older therefore, it seems reasonable to assume they have no education attained.

Moreover, theory suggests that the returns to education are expected to be higher for higher levels of education attained (Section 2.3.2.1). Hence, using years of education does not capture potential non-linearities in returns to education. Additionally, using just average years of schooling could be skewed or biased.

In addition to the above, for comparative reasons results using the highest level of education of the head are also provided given it has been widely used in the literature. Given only 10 percent of the households have a female head, the indicators of the highest level of education attained by the head are constructed by including mother as well. Education of the head is missing for 3 percent of the households in Albania hence in this case, missing observations are replaced by mode (most frequent) level of education attained by adults in the household. Similar to the case with other indicators, for 1.2 percent of the households with no information on education of adults it is assumed that highest level of education of the head is less than primary or primary. This assumption makes sense in the case of head as well given more than 50 percent of heads in the sample attained less than primary or primary education. Moreover, most frequent (mode) level of education attained by adults in the household for around 80 percent of the sample is less than primary or primary education attainment. This

[53] In Kosovo the reform started in academic year 2002/2003 considering age 6 as the starting school age, those currently aged 23 or less are categorized as being in the new education system for Kosovo. In Albania the reform started in academic year 2008/2009 thus those currently aged 18 or less are categorized as being in the new education system. It should be acknowledged however that this categorization has its limitation there might be some early starters, late starters or individuals that dropped out. Moreover, in general with the new system included years of primary education have changed from 8 to; those of secondary education from 4 to three. For most of the degrees, the years of the bachelor degree changed from 4 to three whereas master degree changed from being 1 year to 2.

said, four measures of education are included and the models are estimated separately using one education measure at a time.

Although literature highlights the importance of accounting for ability and motivation in addition to education, this information has not been provided by the surveys utilized hence, it is not possible to control for their effect in the empirical analysis.

Regional variations/local environment

The environment in which the household functions can affect the productivity of production factors in several ways since the nature and degree of competition, infrastructure, conditions for agriculture as well as institutions and public policy may vary across regions. Consequently, variations could occur across regions and between rural and urban areas, for instance some regions may be more prone to poverty shocks. Location or environment characteristics could be considered as exogenous, as these characteristics are not determined by household level of welfare but rather by the level of development (poverty) in the region. To control for such disparities a dummy variable indicating urban location is included. Residing in urban areas is expected to have a negative effect on poverty whereas the opposite on the consumption as households in the urban areas are more likely to have higher consumption levels and lower poverty risk. To control for differences in consumption behaviour and poverty risk amongst households residing in main regions dummies for residence in Ferizaj, Gjakova, Mitrovica, Gjilan, Peja, Prizren and Prishtina are included for Kosovo and the latter is left as the reference category (to measure the capital city effect). For Albania indicators of residence in Mountain, Central, Coastal or Tirana region are constructed and the latter is left as the reference category.

Another important regional variation indicator measured with distance of the household to the nearest primary school is provided in LSMS 2012.[54] HBS 2011 does not provide information on this indicator however, enrolment rate in primary education in both Kosovo and Albania is almost universal (Section 3.2.2). Thus including this indicator does not seem to be very relevant. In addition to the above, LSMS 2012 and HBS 2011 contain information

[54] Access to primary school facilities may provide direct benefits to households via improved education. This indicator can on one hand represent the impact on welfare in the form of additional consumption of goods and services; i.e. whether possible improvements in education of household members from provision of education facilities manifest themselves in higher household consumption levels.

on household's access to water or electricity which could be an issue in some rural or mountain areas but this is not an issue in Kosovo and Albania, hence, this measure is not included in the estimations.

Household characteristics

The household composition indicators are also a group of commonly used variables in the literature which enable controlling for labour inputs and consumption. The household composition affects the distribution of different income sources as different households have different capacity to provide income and eventually, improve the household welfare. However, it is challenging to interpret these variables as they control for two effects: first, for variations in household composition –as equivalence weights- and second, for their effect on household welfare as an independent variable -labour inputs.[55]

In the transition context, the age composition of the household can be an important determinant of income (Shehaj, 2013). This is because different age groups may be equipped with different levels of experience. Although in this literature studies have generally used the age of the head, in this analysis the median age of the adult members is used in this analysis given the eldest person may be assigned as the head out of respect although he/she may not necessarily be an income earner or decision maker. Although both mean or median years of adult members are appropriate to include, the latter is included given it is considered to better reflect the earning potential of the household in cases where older individuals with lower or no education are present in the household; which is largely the case in both countries.[56]

Age of adult members is expected to positively influence poverty as households with younger adults are less likely to be prosperous than those with older ones, given the later are likely to have more experience and respect in the community thus, enhance the welfare of household. On the other hand, due to decreasing productivity, income and hence poverty may fall at older ages, turning to a negative relationship. Hence age is included in quadratic form.

[55] For more details, see Section 2.3.1.

[56] Also the age of the working members could be more appropriate given retired individuals generally are not expected to be engaged in the labour market. However, one can argue that this could be the case for those working in the public sector but not necessarily for those in private sector, part-time or farming or family businesses as they could still be working despite reaching the retirement age. Using age of the adult members also avoids the issues of missing observations given there are households with no working age members in both datasets (i.e only elderly present in the household); more precisely around 3 percent in Kosovo and around 9 percent in Albania.

Gender is another factor that potentially affects household poverty. Females are considered to have different earning opportunities compared to their male counterparts. They are likely to have a higher poverty risk mainly due to discrimination in the labour market as well as disadvantages regarding their access to productive assets such as education. Two indicators are constructed, a dummy variable indicating the female-headed households and the share of adult males in total adults. Female-headed households are expected to have a higher chance of being poor and lower levels of consumption whereas households with higher share of male adults have a higher chance to have someone employed thus a lower chance of being poor and higher levels of consumption.

Fertility

The discussion on Section 2.3.2.3 highlights the importance of household fertility decisions in terms of poverty. In addition to other household characteristics, literature has generally included household size, dependency ratio and the number of children. However, given that the literature suggests that poverty and fertility are jointly determined, the abovementioned variables cannot be considered as exogenous to poverty.

Literature has used sex composition of existing children as a proxy for fertility (Mussa, 2009; Dupta and Dubey, 2003). Couples that have a preference for boys are likely to have higher number of children as they may keep trying until they have a male child. Female children ratio or the gender composition of the first two children shows the attitude of household towards having a male child. However, this might not be the case for all households thus not necessarily reflects household's attitude towards fertility. In addition, inclusion of these two indicators in the model turned out to be challenging. First, there are households with no male children or no children; therefore, missing observations would be a problem. More precisely, this information would be missing for more than 20 percent of households. Some children also might have already left the household - either got married or moved outside of the household – thus they have not been covered by the survey.

Another instrument used in the literature is the availability of contraception in community level (Arpino and Aassve, 2008) - which can be considered as exogenous to household poverty. Data about contraceptive use in Kosovo are only available at country level (KAS,

2011a). Use of infant mortality rates in the region is also used in the literature (Dupta and Dubey, 2003) however, as discussed in Section 3.2.4 this does not seem to be very relevant for covered countries in this analysis.

A rather better indicator of household's attitude towards fertility is the mother's age at first birth, assuming that mothers who gave birth in relatively early age are more likely to have more children hence a higher poverty risk. However, including this indicator proves to be challenging for two main reasons. Firstly, in both countries there are cases of extended families where two or more families live in the same household and since the survey (particularly in Kosovo case) does not provide detailed relationship of household members with the head it is challenging to identify the mother of the children and calculate her age at first birth. Secondly, missing observations would be a problem with this proxy as well since in around 4 and 7 percent of households in LSMS 2012 and HBS 2011, respectively a mother is not present in the household. Additionally, in Kosovo case children that have already left the household are an issue as well.

Mother's education is another indicator that reflects household's attitude towards fertility and can be considered as pre-determined to poverty given education has been attained in the past and is irreversible. Theoretical discussion in Section 2.3.2.3 suggests that education, of women in particular, is considered to be one of the most important determinants of fertility. More educated mothers are expected to prefer having fewer children. Given there is a positive association between income and women's time, an increase in the labour market participation and real wage of women can lead to an increase in the opportunity cost of having children, in particular if the mother is concerned about the quality of time that she spends with the children. This may lead to a reduction in fertility hence a lower likelihood of being poor.

The impact of education in reducing fertility may also work through improved knowledge about contraceptives and the effective use of contraceptive methods as well as making better use of the health system. Moreover, education may increase women's participation in fertility decision-making by resulting in an increase in women's bargaining power and independence in the household.

In addition to the issue of missing observation due to mother not being present in the

household, another difficulty in correctly measuring this proxy relates to missing information regarding highest level of education attained by mother. More precisely, in LSMS 2012 this information is missing for 4 percent of the households whereas in HBS 2011 for around 7 percent of households. Thus, when mother's education information is missing or mother is not present in the household, information on maximum level of education attained by the father is used. This seems appropriate given fertility is a joint decision; moreover, it can rightly be assumed that men tend to marry women of similar education background. For Albania, given there is no information available on education of adults for around 1.2 percent of households, in line with other indicators it is assumed that highest level of education attained by mother is less than primary (in this case illiterate).

Given the presence of extended households hence challenges of identifying additional mothers present in the household, education of the spouse of the head or the female head is used. Due to generational differences, education attainment of the spouse of the head or the female head could be different from that of younger mothers in the household as attitude of younger generations towards education and labour market has changed. This said, households with size of more than 6 members are listed in order to check if the education of potential mothers in extended households differs much from each other; and the data suggests that this does not seem to be the case for majority of the households in both Kosovo and Albania. In few cases when differences were evident, the most common/frequent education attainment is assigned as education of the mother in the household.

It is also important to note that in addition to representing household's attitude towards fertility, this indicator also may account for the effect of mother's education on household consumption. More precisely, more educated mothers are more likely to be employed and earn more hence contribute more to household consumption. However, it is not possible to separate these two effects due to data constraints. This said, mother's education reflects attitude towards fertility and seems to be the indicator with least problems hence, it is used as fertility proxy in the analysis. Three dummies are constructed which indicate: a) if mother of the household is illiterate or has less than primary education; b) if mother's highest level of education attained is primary and c) if higher than primary education.

Migration

The theoretical discussion in Section 2.3.2.2 highlights the importance of household's decisions about migration in terms of poverty. Moreover, both Kosovo and Albania traditionally had a large Diaspora and remittances have played an important role in smoothing consumption. Remittances can be important sources of income in poor countries however are generally considered to be endogenously related to poverty as they are likely to improve household welfare and poorer households are more likely to receive remittances. According to literature remittances are expected to affect welfare of households differently. Some motives to remit may be exogenously whereas some endogenously related to poverty.

Given migration is likely to be pre-determined, provided the decision to migrate was taken in the past, an indicator of presence of a migrant in the household is included to account for the effect of migration and remittances on poverty. The household head in Albania has been asked to list the spouse and all the children 15 years and older who no longer live in the household but live abroad. Hence based on this question a dummy indicator is generated that takes value of one if the household has someone abroad and zero otherwise. For Kosovo, the survey includes a question about the residence of the individual members of the household, more precisely if they reside in Kosovo or abroad however, only around 0.5 percent of the households have reported to have someone residing abroad (in Europe or elsewhere). Given the Kosovar HBS provides no other direct indicator (question) that could be utilized, a proxy for presence of migrants is created based on the receipt of remittances from household members during the last month. More specifically, the dummy variable takes value of one if household received remittances in cash and in kind from family members and zero otherwise. However this proxy has two main limitations: first, there could be households that have someone abroad but have not received remittances at the time of the survey and second, 59 households (2.6%) did not respond on this question therefore, it is not clear whether they did not receive any sources of income or they refused to respond. Around 32 percent of such households are classified as poor. In order to avoid dropping these observations, in this study it is assumed that the former explanation prevails.

Another possibility could be to include a proxy for migration and remittances by constructing a migration network variable. Studies have constructed migration networks in several ways: the interaction of the percentage of households that received remittances in the respective

region and share of males in the household aged 15 to 25 (Acosta et al., 2007; Shehaj, 2013); the lagged state migration rates (McKenzie and Rapoport, 2007), fraction of households receiving international remittances (Adams et al., 2008). In the case of Kosovo it would seem more reasonable to consider those aged 20 to 34 as the age group most likely to migrate.[57] However, despite its limitations the dummy for the presence of a migrant is included in the model as it is a rather more appropriate (direct) measure of household's migration and remittances than the migration network proxy.

Assets

Possession of assets by households is also considered as an important determinant of poverty. As discussed in Section 2.2.5.4 many types of assets are considered to be endogenously related to poverty (Glewwe, 1991; Andersson et al., 2006; Fagernas and Wallace, 2007). Assets are considered to be important determinants of consumption/welfare as they may contribute to household income generation as well as serve as insurance given household may use them to smooth consumption in presence of shocks. In addition, ownership of livestock may serve as a source of nutrition. However, on the other hand, wealthier households are more likely to afford purchasing assets.

Ownership of land is considered as pre-determined to poverty assuming it has not been currently acquired or that it has been inherited, given in both Kosovo and Albania land (wealth in general) is inherited through generation. Moreover, households do not acquire tools every year, poor households in particular. An ideal measure could be an asset index on assets and tools owned by household that could be considered as exogenous to poverty. LSMS 2012 includes a number of questions on the assets owned by the household and the purchase year but HBS 2011 provides information only for assets purchased during the last month. Thus, given it is not possible to construct an asset index for both countries, an indicator of the area of the land owned by the household is included. However, information on landownership is provided only for around 58 percent of households in Kosovo and considering how the question has been asked, it is not clear whether it is because households did not own land or because they refused to report them. Following the same rational as with migration indicator, in order to avoid dropping such households the former is assumed.

[57] This has been suggested by the findings of European Perspective in Kosovo 2012 survey given the data show that respectively, 25.2 and 29.7 percent of those aged 20 to 24 and 25 to 34 would like to permanently settle in an EU country.

Labour market outcomes

The earnings are expected to differ between different sectors of the labour market, the household welfare being higher and the probability of being poor lower in households employed in non-farming activities. Higher number of adults holding a full-time job is argued to reduce poverty. For many individuals, hours worked are chosen simultaneously with expenditure levels (Glewwe, 1991), thus the household employment variables cannot be considered as exogenous to poverty.

A potential indicator to control for the earning capacity of the household as well as the exposure to negative labour market shocks is the share of unemployed adults in the household; which is considered to be exogenously determined to poverty. The Ramsey test of correct functional form is not passed when using the share of unemployed for Albania and in some cases for Kosovo. Instead inclusion of dummy indicators of the number of adult unemployed members is considered. The unemployment rate is relatively high in both countries, one of the highest in the region and this is supported also by the data. In both countries there are households with more than one unemployed member - up to 6 in Albania whereas up to 9 in Kosovo (Section 4.4). However, the share with four or more household members is negligible. This said, three indicators of unemployment are created and are as following: a) if none of the adults in the households is unemployed; b) if up to two adult members are unemployed; c) if three or more members are unemployed. A high number of unemployed adults in the household is expected to increase household's probability of being poor, especially in countries such as Kosovo and Albania where unemployment benefits are very low or non-existent.

Another exogenous indicator that could be used is the regional unemployment rate. However, due to high correlation with region dummies the indicator is excluded from the estimations. Moreover, the former can be considered as a more direct measure of households' earning capacity.

In addition to the above, an informal employment indicator is included in the model given theory highlights its importance in terms of poverty especially, in countries such as Kosovo

and Albania.[58] Despite lack of official estimates and challenges and limitations in measuring informal economy and employment, it is obvious that informal employment accounts for a relatively high share of employment and economic production in both of these countries. The discussion in Section 2.3.2.1 suggests that households with informally employed members are expected to have a higher likelihood of being poor.

The most commonly used measures of informal employment include the non-existence of written employment contracts, the size of the workplace as well as whether the individual is not entitled to social security benefits or does not pay income tax (Lehmann and Zaiceva, 2013; Galli and Kucera, 2003). Given the data availability, an indicator of informal employment is constructed using two different proxies for each country. As it is noted in more detail below both proxies have several shortcomings. LSMS 2012 contains information on entitlement to social security benefits. This question however, has not been asked to all employed individuals but only to those that have the following employment status: a) an employee working for someone who is not a member of the household and b) a paid worker in a household farm or non-farm enterprise. For individuals that are: an employer, a worker in own account and unpaid worker in a household farm or non-farm business there is no information available. Given various definitions of informality include the unpaid workers in family farm or non-farm businesses it seems reasonable to treat them as informal, and this seems to have been the rational of INSTAT. However, treating the other two groups as informal does not seem reasonable given not all types of self-employed or employers can be treated as informal thus, could lead to an overestimation of informal employment. If these two types of employment are treated as informal, the number of households with informally employed members turns out to be very high - given they account for a quarter of employed individuals. On the other hand, some of the self-employed or employers owning small businesses are also likely to be informal in both countries the analysis is concerned of. This might result in underestimation of informal employment to some extent for Albania. This seems to be the case as the share of households with informally employed members in the sample is 20 percent whereas according to Boka and Torluccio (2013), several estimates on the informal economy in Albania suggest that its size is estimated to be around 30 to 34 percent of the GDP. Keeping in mind the abovementioned limitations, the informal

[58] The informal economy in Kosovo and Albania is sizable and this sector is an important alternative to generate income for many individuals due to scarce employment opportunities in formal sector thus the high unemployment rates. For a more detailed discussion see Section 3.2.3.

employment indicator a dummy variable is constructed and equals to one if one or more employed members of the household are not entitled to social security benefits as well as if household has at least one member that is employed as unpaid worker in family farm or non-farm businesses.

HBS 2011 on the other hand, includes information on whether any of the household members has paid income taxes (during the last month). Using this information to classify someone as informally employed seems reasonable for the case of Kosovo. According to Krasniqi and Topxhiu (2012) around 85 per cent of informal employment in Kosovo can be attributed to workers who do not pay personal income tax. It can be also argued that individuals that pay income taxes regularly are more likely to be in formal employment because they have regular income thus, pay taxes regularly. Individuals may pay taxes yet may not have jobs that pay regularly as a result, are more likely to be in the informal sector. On the other hand, individuals who are engaged in or own little farms or other family business where most of family members work are less likely to declare their employees and pay income tax.

However, this measure has two main shortcomings. The first one relates to potential overestimation of households with informally employed members. The households have been asked if one of the members has paid income tax during the last month however, the self-employed and businesses are by law required to pay income tax on quarterly basis.[59] Thus, there is a chance that at the time of survey they were not supposed to pay income tax, consequently are treated as informal. The other limitation relates to the response rate in HBS 2011 as only around 30 percent of households have answered this question, among which 27.6 percent (627 households) are households with no employed members. However for the rest, it is not clear whether the households refused to answer or no one in the household has paid income tax. Thus, keeping the same practice as with other proxies with similar problem it is assumed that such households did not pay income tax during that particular month, hence are classified as informal. With this assumption around 41.8 percent of households turn out to have someone engaged in informal employment. Although the measure of informal employment could be overestimated due to the above-mentioned limitations, the existing estimates of the size and forms of informal employment in Kosovo suggest that size of informal employment is relatively high. According to the assessment of the European Agency

[59] Law No. 03/L-115 on Personal Income Tax.

for Reconstruction (EAR) in 2007, the size of the informal economy in Kosovo ranges between 27 and 35 percent of GDP in 2004– 2006 period.[60] A recent study also suggests that informality in terms of lack of declaration of business sales and employees is estimated to be more than 30 percent in Kosovo (Riinvest, 2013).

In spite of its limitations, the data support the theoretical predictions to a large extent (Section 2.3.2.1). Households with informally employed members in Albania are poorer whereas in Kosovo the poverty rate among those with and without informally employed members is similar. Also in both countries it is generally households with higher maximum levels of education and higher mean years of education of adult members that have reported paying income tax or are entitled to social security benefits.[61] Acknowledging the limitations but on the other hand considering its importance in terms of poverty, the regressions are estimated with and without this indicator to assess whether its inclusion in the model affects the results.

Ethnicity

The labour market outcomes (both employment and earning possibilities) of minority (ethnic) groups of the population may vary for reasons other than their access to production factors, such as discrimination. To control for potential differences between Albanian headed households and those of other ethnicity, a dummy variable that indicates Albanian head is included for both countries.

[60] Yet at the same time the share of businesses not reporting their complete income to the government may amount to much more, even as high as 80 per cent (Danielson, 2010). Moreover, the same study notes that if informality is measured based on compliance with statutory provisions on social security, about 70 percent of adult and young workers are estimated not to be covered by social security.

[61] Informality can also be related to education of the household members, as it is usually the less educated that are engaged in the informal market.

Social capital

Social capital is another important indicator which has not received much attention in this literature but that could also be important in terms of poverty. The concept of social capital includes networks, rules, norms and social values. Despite differences in view on what constitutes social capital[62], there is a growing agreement in the literature that social capital "*stands for the ability of actors to secure benefits by virtue of membership in social networks or other social structures*" (Portes, 1998, p. 6). Social capital may affect household welfare by improving land access thus affecting agricultural production as well as by providing consumption safety nets. In addition, it may lower the costs of migration and help households overcome the barriers/constraints to migration. The HBS 2011 does not contain information on household's social capital. To preserve the comparability between the two countries social capital indicator is not included in the Albanian model either although LSMS 2012 contains a specific module on social capital.

[62] See Mubangizi (2003) for a review of different definitions in literature.

4.4. Descriptive statistics

This section presents descriptive statistics for Kosovo and Albania. Table 4.2 and Table 4.3 present the mean values of the continuous variables for Kosovo and Albania, respectively whereas Table 4.4 and Table 4.5 present the summary statistics of discrete variables in each country, respectively.

Starting with real per adult equivalent monthly consumption, households in Kosovo spend on average 79.0 Euros per adult equivalent per month whereas those in Albania spend on average 9,109 Albanian Lek (around 65€)[63] per adult equivalent per month[64]. In Kosovo, 29.7 percent of the population are categorized as poor in 2011 whereas 12.3 percent in 2012 in Albania. Of note is the fact that 14.3 percent of households are reported as poor by the INSTAT when per capita consumption is used as a measure of household welfare; indicating that poverty measure is sensitive to the equivalent scale used.

On average, the household size is larger in Kosovo compared to Albania, around 5.8 and 3.8 respectively and the households in both countries are composed of more adults than children. The average number of children is also higher in households in Kosovo as compared to Albania whereas on average the number of elderly members (aged 64 and over) is roughly the same.

On average, the head of the household is around 54 years old in both countries whereas the median age is around 40 and 45 years in Kosovo and Albania, respectively. Explorations of the distribution of the head across different age groups suggest that majority of the heads in general and female-heads in particular are aged 50 years and older in both Kosovo and Albania (Table 4.6).

[63] According to Bank of Albania data, the average exchange rate was 140 ALL/EUR.
[64] For Albania we kept the consumption figure per month in line with the Albanian Institute of Statistics (INSTAT) as the information on the month when household has been interviewed has not been provided in the dataset.

Table 4. 2. Means of continuous variables for Kosovo

Variable	Mean	St.Deviation	Min	Max
Log monthly per adult eq. consumption	4.22	0.52	2.29	6.81
Monthly per adult eq. consumption	79.01	51.43	9.87	908.4
Household size	5.80	2.91	1	28
No. of adults	4.25	2.00	1	20
No. of children	1.54	1.64	0	15
No. of elderly	0.50	0.68	0	3
Age of head	53.44	13.33	19	91
Median age	37.98	12.24	16	87
Adult male ratio	42.83	19.62	0	100
Mean years of education of adults	7.96	3.91	0	16
Share of adults with less than primary or primary education	15.33	21.16	0	100
Share of adults with secondary education	25.45	24.71	0	100
Share of adults with tertiary education	6.23	14.76	0	100
Share of unemployed adults	21.46	24.38	0	90

Note: Consumption in Euros for Kosovo and Albanian Lek for Albania

The share of males in total adult members is similar, on average 42.8 and 48.9 percent, respectively in Kosovo and Albania, which seems to suggest that there is a slightly higher number of female working age members in both countries. Households in Kosovo on average have a share of 21.4 percent of adult unemployed members whereas only 8.3 percent in Albania. Mean years of education of adult members are higher for households in Kosovo (7.9 years) compared to adult members of the households in Albania, which on average have 6.9 years of education. In both countries, secondary education is the highest education attainment in more than 40 percent of households.

Table 4. 3. Means of continuous variables for Albania

Variable	Mean	St.Deviation	Min	Max
Log real monthly per adult eq. consumption	9.03	0.42	7.05	10.81
Real monthly per adult eq. consumption	9109.68	4091.02	1156.326	49973.11
Household size	3.80	1.65	1	16
No. of adults	3.06	1.27	1	9
No. of children	0.73	1.01	0	8
No. of elderly	0.42	0.67	0	4
Age of head	54.45	13.49	18	102
Median age	44.89	14.78	16	102
Male ratio	48.61	19.64	0	100
Mean years of education of adults	6.94	4.18	0	21
Share of adults with primary education	31.04	27.68	0	100
Share of adults with secondary education	21.76	24.91	0	100
Share of adults with tertiary education	7.81	17.08	0	100
Share of unemployed adults	8.26	18.92	0	100

The mother is present in only 93.4 and 96.0 percent of households respectively in Kosovo and Albania. The share of female-headed households in the sample is small for both countries, only 9.3 and 12.7 percent in Kosovo and Albania, respectively. Majority of mothers in Kosovo have less than primary and primary education attainment (55.5%) whereas 49.3 percent of mothers in Albania attained primary education. The share of highly educated heads is small in both countries. The majority of household heads in both Kosovo and Albania have less than primary and primary education attainment, which supports the expectations that the head might not necessarily be the main earner.

Majority of households in Kosovo live in rural areas (54.85), whereas in Albania the distribution is larger in urban areas (54.1%). In terms of region of residence in Kosovo, Peja and Prishtina have the highest proportion of residents 15.5 and 16.8 percent, respectively. In Albania, respectively 44.7 and 29.0 percent of households reside in Central and Coastal areas. 16.4 percent of households in Kosovo received remittances and in kind remittances. However, it is relevant to note that majority of remittances are sent from relatives and friends whereas only 2.2 percent are sent from family members. In Albania, 20.6 percent of households have reported to have someone abroad. Vast majority of the heads in both countries are Albanian and around 50 percent of households own land.

Table 4. 4. Proportions of categorical variables for Kosovo

Variable	Frequency	Percent
Location		
- Urban	1,029	45.25
- Rural	1,245	54.75
Total	**2,274**	**100.00**
Region dummies		
- Ferizaj	311	13.68
- Gjakove	303	13.32
- Gjilan	319	14.03
- Mitrovice	310	13.63
- Peje	352	15.48
- Prizren	383	16.48
- Prishtine	296	13.02
Total	**2,274**	**100.00**
Mothers highest education level		
- Illiterate	1,263	55.54
- Primary	476	20.93
- Higher	534	23.57
Total	**2,274**	**100.00**
Female headed household	212	9.32
Maximum level of education in the household		
- Primary	693	30.47
- Secondary	1,152	50.66
- Tertiary	429	18.87
Total	**2,274**	**100.00**
Highest level of education of the head		
- Primary	1,151	50.62
- Secondary	871	38.30
- Tertiary	252	11.08
Total	**2,274**	**100.00**
Ethnicity		
- Head Albanian	2,072	91.20
- Head Serbian	60	2.64
- Head Other	140	6.16
Total	**2,274**	**100.00**

Table 4.4. Proportions of categorical variables for Kosovo (cont.)		
Migration	**Frequency**	**Percent**
Presence of migrant	49	2.15
Landownership	1,101	48.52
Informal employment	950	41.78
Unemployment		
No unemployed adults	1,021	44.90
Up to 2 unemployed adults	1,041	45.78
More than three unemployed adults	212	9.32
Total	**2,274**	**100.00**

Table 4. 5. Proportions of categorical variables for Albania

Variable	Frequency	Percent
Location		
- Urban	3,608	54.08
- Rural	3,063	45.92
Total	6,671	100.00
Region dummies		
- Coastal	2,959	44.36
- Central	1,936	29.02
- Mountain	1,128	16.91
- Tirana	648	9.71
Total	6,671	100.00
Mothers highest education level		
- Illiterate	628	9.41
- Primary	3,270	49.02
- Higher	2,626	39.36
Total	**6,671**	**100.00**
Female headed household	844	12.65
Maximum level of education in the hh		
- Primary	2,295	34.40
- Secondary	2,780	41.67
- Tertiary	1,596	23.92
Total	**6,671**	**100.00**

Table 4.5. Proportions of categorical variables for Albania (cont.)		
Highest level of education of the head	**Frequency**	**Percent**
- Primary	3,705	55.54
- Secondary	2,188	32.80
- Tertiary	778	11.66
Total	**6,671**	**100.00**
Ethnicity	**Frequency**	**Percent**
- Head Albanian	6,540	98.04
- Head Other	131	1.96
Total	**6,671**	**100.00**
Migration	**Frequency**	**Percent**
Presence of migrant	1,727	25.89
Landownership	3,705	55.54
Informal employment	1,679.15	25.17
No unemployed	5,360	80.35
Unemployed2	1,208	18.11
Unemployed3more	103	1.54

Table 4. 6. Distribution of female-heads across age groups in Kosovo and Albania

Age of the female-head	**Kosovo**		**Albania**	
Age intervals	**Frequency**	**Percent**	**Frequency**	**Percent**
18-19	-	-	1	0.12
20-29	1	0.47	22	2.61
30-39	20	9.43	66	7.82
40-49	42	19.81	146	17.30
50-59	63	29.72	160	18.96
60-69	58	27.36	174	20.62
70-79	18	8.49	189	22.39
80-89	10	4.72	72	8.53
90-99	-	-	13	1.54
100-102	-	-	1	0.12
Total	**212**	**100.00**	**844**	**100.00**

4.5. Estimation results

This section presents the Probity, OLS and Quantile regression results and their diagnostics for the four specifications using different education indicators as explained in more detail in Section 4.3.2. In Model 1, maximum level of education in the household is used. The share of adult members with different levels of education is used in Model 2 whereas mean years of education of adult members in Model 3. When constructing the abovementioned indicators, the highest level of education of the mother has been excluded to avoid double counting – given it is used as a proxy to fertility. The results of the estimations using the highest level of education of the head and diagnostic tests are presented in Model 4, since it has been widely used in the literature. Given the expected non-linearities in returns to education and other reasons discussed in more detail in Section 2.3.2.1, maximum level of education in the household and the shares with different education level can be argued as more appropriate measures of education.

The results suggest that most indicators appear significant with the expected signs for both Kosovo and Albania. Moreover, both the results of OLS and Probit models provide a consistent story and are largely similar for both countries with exception of residence in urban area indicator which is found to be important across all regression for Albania yet only in Model 4 for Kosovo. Consistent with OLS, Quantile regression results confirm that most indicators appear statistically significant yet, some of the indicators matter only at certain parts of the distribution. In addition, the results confirm that the indicators also differ in their impact on households' consumption depending on the welfare position.

The R^2 indicate a reasonably good fit for all model specifications, 0.21 for Kosovo and 0.12 for Albania. The diagnostic tests of the estimations suggest rejection of normality across all models. This is expected in cases when positively skewed variables such as wages or consumption are used, and this is one of the reasons for using the natural logarithm as it helps in normalizing such variables (Shehaj, 2013). The Qnorm[65] and Pnorm[66] graphs of the

[65] Quantiles of consumption against quantiles of normal distribution.
[66] Standardized normal probability plot.

residuals (Figure 4A.2.1- 4A.2.4 in Appendix 4) show that there is normality in the middle range, but not in the tails of data.

The correct specification test suggests reasonably good specification in general except for Model 2 and 4 in Albania where the Ramsey test is rejected.[67] However, the Probit model results for Albania suggest a good fit (90%). Although there are some slight differences in magnitude of the effect or significance level, it is important to note that they all seem to provide consistent results. In addition, the results of specification test (linktest) after Quantile regressions suggest that the test is passed for Model 1 and 2 for Kosovo and across the four specifications for Albania; suggesting that conditional on the specification, the independent variables are specified correctly.

Given the focus of the thesis, the results for the four education variables are interpreted whereas for the rest of other indicators only the results from the base model. Model 1 is treated as the base model given the maximum level of education in the household is considered as one of the most appropriate indicators of education and also Ramsey test suggests a correct functional form for both countries. Regarding the other independent variables on the other three specifications, the overall consistency of results with those in the base model is discussed and large differences are pointed when evident.

There is no indication of multicollinearity impeding the precision of results as indicated by variance inflation factors (Appendix 4A.5). There is indication of heteroscedasticity however only for Kosovo. Therefore, heteroskedasticity-robust estimators are presented for models where heteroscedasticity has been indicated. Overall, given the limitations as well as the issue of potential selection bias due to using pre-determined variables, no conclusions from the empirical findings for such variables can be drawn hence the findings should be considered only suggestive and indicative at best.

Given the limitations of the informal employment indicator discussed in more detail in Section 4.3.2, regressions are estimated with and without this indicator (Appendix 4A).[68] Probit regression diagnostics suggest that including informal employment indicator only

[67] The correct functional form is not rejected if we use the real household consumption without the log. However, theoretically the dependent variable should have the log form given consumption is generally compressed/skewed.

[68] See Appendix 4A, tables 4A.1.1-4A.1.4 for Probit results for Kosovo and 4A.1.6-4A.9 for Albania. For OLS results for Kosovo see tables 4A.2.1- 4A.2.4 and tables 4A.2.6-4A.2.9 for Albania.

slightly improves the model fit and lrtest suggests that it does not add to the models. The regression results suggest that informal employment indicator appears important across OLS and Quantile regressions for both Kosovo and Albania and its inclusion in general does not affect the results (sign and significance and the coefficients). This said, keeping in mind the limitations, the results are interpreted including the informal employment indicator.

In Appendix 4A regression results including age of the head and its squared term instead of median age indicators (regression C) are also presented given it has been widely used in the literature.[69] Using age of the head and its square term as age indicator gives similar results in Probit as well as in OLS however the magnitude of the effect of significant variables in some cases slightly differs[70] whereas the significance level remains more or less the same.

4.5.1 Probit regression results

This sub-section presents the results of Probit estimations across the set of four specifications for Kosovo and Albania, respectively. Results are in general consistent in poverty regressions across the four sets of regressions for both countries. The variables in general appear significant and have the expected sign, suggesting that results are in line with the theoretical predictions. Table 4.8 and 4.9 present the marginal effects of the Probit regression results of the four specifications with different education variables for Kosovo and Albania, respectively.

Given the focus of the analysis, a summary of the sign and significance level of education variables across all Probit models for both Kosovo and Albania is presented in Table 4.7. The empirical findings confirm the theoretical predictions that education reduces the probability of being poor in both countries and the effect is significant irrespective of education measure used. This result is in line with findings of other studies concerned with determinants of poverty/welfare in developing countries (Glewwe, 1991; Geda et al., 2005; Jamal, 2005;

[69] Results using household size and the number of children as fertility indicators - despite the theoretical expectations that they are considered to be endogenously related to poverty - are presented in Appendix 4A.4 given their general use in other studies and for comparison reasons.

[70] For Kosovo the magnitude of the effect slightly differs for illiterate mothers, migration, female head, informal employment proxy, adult male ratio, Albanian head, unemployment of three or more adults indicators in OLS whereas only the magnitude of the latest three indicators differs in Probit. For Albania the results suggest that the magnitude of the illiterate mothers, maximum level of education of adults, migrant household, unemployment of three or more adults, urban residence, informal employment, female headed household and adult male ratio slightly changes mainly in both OLS and Probit.

Fagernas and Wallace, 2006; Bruck et al., 2007; Githinji, 2011). In line with human capital theory, the effect is non-linear, as the effect on poverty increases with increased levels of education attainment. This suggests that higher levels of education are relatively more important for consumption and poverty supporting the hypothesis that more qualified individuals are more productive than their counterparts and thus contribute more to the household consumption.

Table 4. 7. A summary of the sign and significance level of education variables across Probit models for Kosovo and Albania[71]

	Kosovo			Albania		
Variables	**Regression A**	**Regression B**	**Regression C**	**Regression A**	**Regression B**	**Regression C**
Max education of adults:						
- secondary	(-)***	(-)***	(-)***	(-)**	(-)**	(-)
- tertiary	(-)***	(-)***	(-)***	(-)***	(-)***	(-)***
Share of adults with:						
- secondary education	(-)***	(-)***	(-)***	(-)***	(-)***	(-)***
- tertiary education	(-)***	(-)***	(-)***	(-)***	(-)***	(-)***
Mean years of educ of adult	(-)***	(-)***	(-)***	(-)**	(-)**	(-)**
Max education of head						
- secondary	(-)***	(-)***	(-)***	(-)***	(-)***	(-)***
- tertiary	(-)***	(-)***	(-)***	(-)***	(-)***	(-)***

*Note: ***, **, * Significant at 1%, 5% and 10% level.*

Maximum levels of education indicators appear statistically significant and exert a strong negative effect on poverty. This result is in line with Mukherje and Benson (1998). In line with theory the effect is non-linear and increases across increasing levels of education. *Ceteris paribus*, compared to households with less than primary or primary, households where maximum level of education is secondary have on average 10.7 percentage points lower probability of being poor in Kosovo and 1.6 percentage points in Albania; whereas households with tertiary maximum level of education have on average 25.2 and 5.5 percentage points lower chance of being poor respectively, in Kosovo and Albania.

[71] Regression A is the specification which excludes informality indicator; Regression B includes informality indicator and Regression C is the specification where age of head used as age indicator is used instead of median age ones.

The results of Model 2 suggest a strong negative effect of the variables with share of members with respective education levels on poverty in both countries. Given the shares total to 100 percent, the interpretation of indicators should be read by considering a decrease on the reference category (share of adults with less than primary or primary education). It is estimated that, holding other factors constant, ten percentage points change in the share of adult members with secondary education attainment on average decreases the probability of being poor by 2.4 percentage points in Kosovo and 0.05 percentage points in Albania.[72] Similarly, ten percentage points increase in the share of adult members with tertiary education, on average decreases the probability of being poor by 0.78 percentage points in Kosovo and around 0.16 percentage points in Albania.

The indicator of mean years of education of adult members is found to be a strong significant predictor of the probability of being poor and it exerts a poverty reducing effect in both countries. *Ceteris paribus*, an increase on the mean years of education of adult members by one year, decreases the household probability of being poor by 2.5 and 0.2 percentage points in Kosovo and Albania, respectively.

The highest level of education of the head also appears strongly significant for both countries. In line with theoretical predictions, the effect of the education of the head on poverty increases with increased levels of education. This is in line with findings in Garza-Rodrigues (2011) and Olaniyan (2002). Holding other factors constant, household where highest level of education of the head is secondary have a lower probability of being poor by 8.9 percentage points as compared to those with less than primary or primary in Kosovo and 2.9 percentage points in Albania. Similarly, those with tertiary education have a 19.9 and 6.6 percentage points lower probability of being poor respectively, in Kosovo and Albania.

The results suggest that education has a poverty reducing effect in both countries, the greatest impact is exerted from the tertiary education. The magnitude of the effect of both secondary and tertiary education is larger for Kosovo than Albania, which may imply that labour market provides higher returns to education in Kosovo. This is supported by data on average wages

[72] To evaluate the 'average' or 'overall' marginal effect, two approaches are frequently used. One approach is to compute the marginal effect at the sample means of the data. The other approach is to compute marginal effect at each observation and then to calculate the sample average of individual marginal effects to obtain the overall marginal effect. For smaller samples, averaging the individual marginal effects is preferred (Greene, 1997) while both the approaches yield similar results for large sample sizes. In this study we compute overall marginal effects.

in public sector for both countries, whereby the average wage in public sector in Kosovo is reported to be 372€ in 2012 (UNDP, 2012b). According to results of the Kosovo Labour Force Survey for 2014 and 2015, the net wage of most employees ranged between 300-400€. Data for Albania suggest that the average wage (irrespective of sector) was 325€ in 2014 (INSTAT, 2015).

Household characteristics

In line with theoretical expectations, the adult male ratio is found to have a significant decreasing effect on poverty whereas the number of unemployed adult members a highly significant increasing effect on poverty for both countries. It is estimated that, *ceteris paribus*, an increase on the adult male ratio by ten percentage points, on average decreases probability of being poor by 0.14 percentage points in Kosovo whereas 0.06 percentage points in Albania.

Ceteris paribus, it is estimated that compared to no unemployed adults, the presence of up to two unemployed adults in households on average increases the probability of being poor by around 5.8 and 5.2 percentage points in Kosovo and Albania, respectively. Similarly, compared to not having unemployed adults, the presence of three or more unemployed adults increases the probability of being poor on average by 18.3 and 15.7 percentage points in Kosovo and Albania, respectively. The results suggest that the impact of unemployment indicators is also largely similar for both countries.

Different from Kosovo, female-headed household indicator appears to be significant for Albania, yet with a counterintuitive sign. Female-headed households are generally expected to have a higher poverty risk due to lower engagement in the labour market and in general lower earnings compared to their male counterparts. However, the data do not seem to support this. For instance, the share of poor across female-headed households is lower than the share in male-headed households (Figure 3.2). A potential explanation is that in addition to cases where the divorced women or a widow is the head of the household there could be cases that the eldest women in the household is assigned as the head out of respect. In exploring the data this tends to be largely the case for Albania. More than 50 percent of female-heads are aged 60 years or older. Another explanation could be remittances sent by husband or other family members that have migrated, and this appears to be the case as 37

percent of female-headed households in Albania have someone abroad and around 28 percent received remittances (Table 3.4.4). Or it could be that since they are living alone, they could in fact afford it.

The age indicators on the other hand, are not statistically different from zero for both countries.

Fertility

The results suggest that fertility proxies have a strong and statistically significant effect on poverty for both Kosovo and Albania. In line with theoretical predictions less educated mothers are more likely to have higher number of children thus a higher poverty risk as compared to more educated ones. *Ceteris paribus*, compared to households with higher educated mothers, those with illiterate ones, on average have 11.7 percentage points higher probability of being poor in Kosovo and 7.9 percent in Albania. Similarly, households where the highest education attainment of the mother is primary on average respectively have a higher probability of being poor by 15.6 and 3.0 percentage points in Kosovo and Albania, other things being equal. The smaller magnitude of the effect of mother's education in Albania could be due to generally smaller family size and number of children as compared to Kosovo. However, it should be noted that the indicators of mother's education also account for its effect on household consumption although as discussed in previous section it is not possible to make such a distinction given the nature of the data.

Table 4. 8. Marginal effects of Probit regression results for Kosovo

Variables	Model 1 Poor	Model 2 Poor	Model 3 Poor	Model 4 Poor
Max education of adults-secondary	-0.107***			
	(0.023)			
Max education of adults- tertiary	-0.252***			
	(0.019)			
Share of adults with secondary educ		-0.002***		
		(0.000)		
Share of adults with tertiary educ		-0.008***		
		(0.001)		
Mean years of educ of adults			-0.025***	
			(0.003)	
Max education of head- secondary				-0.089***
				(0.022)
Max education of head- tertiary				-0.199***
				(0.025)
Adult male ratio	-0.0014**	-0.001*	-0.001*	-0.001**
	(0.001)	(0.001)	(0.001)	(0.001)
Up to two unemployed adults	0.058***	0.063***	0.057***	0.046**
	(0.022)	(0.022)	(0.022)	(0.022)
Three or more unemployed adults	0.183***	0.192***	0.172***	0.138***
	(0.043)	(0.043)	(0.042)	(0.041)
Female headed household	-0.017	-0.008	0.004	-0.023
	(0.034)	(0.034)	(0.035)	(0.034)
Median age of adults	-0.004	-0.004	-0.003	-0.006
	(0.004)	(0.004)	(0.004)	(0.004)
Median age of adults squared	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Max education of mother-illiterate	0.117***	0.105***	0.099***	0.107***
	(0.027)	(0.028)	(0.028)	(0.029)
Max education of mother- primary	0.156***	0.155***	0.195***	0.147***
	(0.035)	(0.035)	(0.035)	(0.036)
Household with migrants	-0.132***	-0.132***	-0.136***	-0.131***
	(0.045)	(0.044)	(0.045)	(0.046)
Albanian headed household	-0.084**	-0.096**	-0.089**	-0.106***
	(0.038)	(0.038)	(0.038)	(0.038)
Urban location	-0.013	-0.009	-0.012	-0.023
	(0.023)	(0.023)	(0.023)	(0.023)
Ferizaj	0.146***	0.127***	0.125***	0.143***
	(0.042)	(0.041)	(0.041)	(0.041)
Gjakove	-0.003	-0.015	-0.021	-0.016
	(0.039)	(0.038)	(0.038)	(0.038)
Gjilan	0.215***	0.206***	0.221***	0.213***
	(0.042)	(0.042)	(0.042)	(0.042)
Mitrovice	0.079*	0.069*	0.067*	0.077*
	(0.041)	(0.040)	(0.040)	(0.041)
Peje	0.040	0.029	0.029	0.040
	(0.039)	(0.038)	(0.038)	(0.039)
Prizren	0.298***	0.284***	0.287***	0.289***
	(0.042)	(0.042)	(0.042)	(0.042)
Presence of informally empl. adult	-0.034*	-0.031	-0.018	-0.027
	(0.021)	(0.021)	(0.021)	(0.021)
Area of land	0.000	0.000	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Observations	2,274	2,274	2,274	2,274
LR chi2	329.20	331.23	304.61	275.93
Log likelihood	-1210.50	-1209.49	-1222.79	-1237.14
Correct classification	72.43%	73.09%	73.26%	72.60%

Table 4. 9. Marginal effects of Probit regression results for Albania

Variables	Model 1 Poor	Model 2 Poor	Model 3 Poor	Model 4 Poor
Max education of adults-secondary	-0.016**			
	(0.008)			
Max education of adults- tertiary	-0.055***			
	(0.008)			
Share of adults with secondary educ		-0.0005***		
		(0.000)		
Share of adults with tertiary educ		-0.002***		
		(0.000)		
Mean years of educ of adults			-0.002**	
			(0.001)	
Max education of head- secondary				-0.029***
				(0.008)
Max education of head- tertiary				-0.066***
				(0.007)
Adult male ratio	-0.001***	-0.0011**	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Up to two unemployed adults	0.052***	0.0517***	0.051***	0.046***
	(0.010)	(0.010)	(0.010)	(0.009)
Three or more unemployed adults	0.157***	0.157***	0.159***	0.141***
	(0.043)	(0.043)	(0.043)	(0.041)
Female headed household	-0.025***	-0.024**	-0.024**	-0.026***
	(0.001)	(0.001)	(0.001)	(0.001)
Median age of adults	-0.001	-0.002	-0.001	-0.002
	(0.001)	(0.001)	(0.003)	(0.001)
Median age of adults squared	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Max education of mother-illiterate	0.079***	0.079***	0.112***	0.059***
	(0.019)	(0.019)	(0.021)	(0.019)
Max education of mother- primary	0.030***	0.030***	0.051***	0.022**
	(0.008)	(0.008)	(0.008)	(0.009)
Household with migrants	-0.021***	-0.021***	-0.022***	-0.022***
	(0.007)	(0.007)	(0.008)	(0.007)
Albanian headed household	-0.055*	-0.054*	-0.069**	-0.060**
	(0.030)	(0.030)	(0.032)	(0.031)
Urban location	-0.001	-0.002	0.004	-0.001
	(0.007)	(0.007)	(0.007)	(0.007)
Central	-0.015	-0.018	-0.011	-0.016
	(0.013)	(0.013)	(0.013)	(0.013)
Coastal	0.031**	0.028*	0.038**	0.030**
	(0.015)	(0.014)	(0.015)	(0.014)
Mountain	-0.031***	-0.033***	-0.027**	-0.030**
	(0.012)	(0.011)	(0.012)	(0.012)
Presence of informally empl. adult	-0.007	-0.007	-0.005	-0.008
	(0.008)	(0.008)	(0.008)	(0.008)
Area of land	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	6,671	6,671	6,671	6,671
LR chi2	292.36	298.16	265.46	292.36
Log likelihood	-1882.69	-1879.79	-1900.64	-1882.69
Correct classification	90.95%	90.95%	90.93%	90.95%

*Note: ***, **, * Significant at 1%, 5% and 10% level.*

Migration

The results confirm the importance of migration for both countries and the indicators are highly significant. In line with expectations, presence of members abroad exerts a negative effect on poverty for both countries. Keeping other factors constant, households with migrants on average have 13.2 percentage points lower probability of being poor compared to those without migrants in Kosovo and 2.1 percentage points in Albania.

Ethnicity

Results also confirm differences in poverty risk between Albanian and other ethnic groups although for Albania in Model 1 and 2 only at 10% significance level. As expected, households with an Albanian head have a lower probability of being poor compared to those of other ethnicity in Kosovo and Albania. It is estimated on average, that having an Albanian head decreases probability of being poor by 8.4 and 5.5 percentage points in Kosovo and Albania, respectively as compared to having a head of other ethnicity, *ceteris paribus*.

Regional variations

From the set of regional variation indicators, most region dummies appear statistically significant for both Kosovo and Albania; confirming expectations on different poverty risk across regions. As expected, holding other factors constant, compared to households residing in Prishtina, those residing in Ferizaj, Gjilan, Mitrovice and Prizren have a higher probability of being poor of 14.6, 21.5, 7.9 and 29.8 percentage points, respectively. The results for Albania suggest that, holding other factors constant, residing in the Coastal region as compared to Tirana increases whereas residing in the Mountain region decreases the probability of being poor on average by 3.1 percentage points. The results are in line with poverty data which suggest that the rate of poverty is one of the lowest in the Mountain areas (Figure 3.7). Urban location appears insignificant across four models for both Kosovo and Albania, which may suggest that poverty is widespread in both countries.

Informal employment

The informal employment indicator is also found to be statistically insignificant across all models in Albania whereas it appears as significant only in Model 2 for Kosovo, although

only at 10% level. Compared to significant effect on consumption regression[73], this result tends to suggest that presence of informally employed members affects consumption of the household yet not probability of being poor.

4.5.2 OLS and Quantile regression results

The results of the four sets of OLS regressions are presented in Table 4.12 for Kosovo and Table 4.13 for Albania.[74] The Quantile regression results of the base model are presented in Table 4.14 and 4.15 for Kosovo and Albania, respectively while the results for the rest of the models are presented in Appendix 4A.3. Generally, the literature has estimated regressions in five main quantiles such as 10th 25th, 50th, 75th and 90th quantiles yet studies do not give a particular reason for the choice of quantiles (Himaz and Aturupane, 2011; Ogundari, 2012; Maguza-Tembo and Edriss, 2014). Given the poor are generally concentrated at the three lowest quantiles and to see how the covariates affect households in the middle and higher quantiles for the purpose of this analysis the model is estimated across nine quantiles (10^{th}-90^{th}). In line with the approach in the previous section, the results of Model 1 are interpreted parallel for both Kosovo and Albania.

Table 4. 10. A summary of the sign and significance level of education variables in OLS and Quantile regressions for Kosovo

Variables	OLS	q10	q20	q30	q40	q50	q60	q70	q80	q90
Share of adults with:										
- secondary educ.	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***
- tertiary educ.	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***
Max education of adults										
- secondary	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)**	(+)	(+)**
- tertiary	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***
Mean years of educ of adults	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***
Max education of head										
- secondary	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***		(+)***
- tertiary	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***

*Note: ***, **, * Significant at 1%, 5% and 10% level.*

[73] Discussed in more detail on Section 4.5.2.
[74] Similar to Probit, the results of models excluding informal employment indicator and with age of the head as age indicator are presented in Appendix 4A.2.

Table 4. 11. A summary of the sign and significance level of education variables in OLS and Quantile regressions for Albania

Variables	OLS	q10	q20	q30	q40	q50	q60	q70	q80	q90
Share of adults with:	(+)**	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***
- secondary educ.										
- tertiary educ.	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***
Max education of adults	(+)***	(+)*	(+)	(+)	(+)	(+)**	(+)***	(+)**	(+)**	(+)
- secondary										
- tertiary	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***
Mean years of educ of adults	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***
Max education of head	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***
- secondary										
- tertiary	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***	(+)***

*Note: ***, **, * Significant at 1%, 5% and 10% level.*

Education

Table 4.10 and Table 4.11 present sign and significance level of the four sets of education indicators in OLS regression model as well as across the nine consumption quantiles in Kosovo and Albania, respectively. Similar to Probit regression, in line with theory it is found that education is a statistically significant predictor of consumption. The indicators of secondary and tertiary education appear strongly significant and positively related to consumption across all models for both countries and the effect is non-linear. This is in line with human capital theory given it is the more qualified individuals (those with secondary and tertiary) who are expected to be more productive and earn more than their counterparts thus, contribute more to the household consumption. The Quantile regression results also highlight the importance of education indicators. Tertiary indicators and mean years of education indicator appear strongly significant across the whole distribution whereas significance level and importance of secondary education as maximum level of education varies for both countries.

Holding other factors constant, households where maximum level of education is secondary

and tertiary, respectively have 12.7 and 47.4 percent[75] higher levels of consumption as compared to those with less than primary or primary level in Kosovo and 2.7 and 18.8 percent, respectively in Albania. This result is in line with Sakuhuni et al. (2011) and Bruck et al. (2001).

The interpretation of the indicators of share of adults with respective levels of education attainment is done in the same way as in Probit. The indicators are interpreted by considering a decrease on the reference category (share of adult members with less than primary or primary education) as the indicator being interpreted increases. Holding other factors constant, 1 percentage point increase on the share of adult members with secondary and tertiary education, respectively increases household consumption by 0.27 and 0.93 percent in Kosovo whereas by around 0.2 and 0.5 percent in Albania, respectively.

The Quantile regression results indicate that tertiary indicators exerts a significant and strong effect across the whole distribution and again the effect is strongest for the poorest in Kosovo whereas the richest in Albania. Maximum secondary education indicator does not appear statistically significant at the 80^{th} quantile for Kosovo whereas for Albania its impact is statistically different from zero generally at the 50^{th}-80^{th} quantile and the effect is largely similar. In other words, it is only tertiary education attainment that improves the welfare of the poorest households in Albania.

Moreover, although having tertiary compared to less than primary education improves consumption/welfare of household across the whole distribution, the benefits are largest for the poorest in Kosovo whereas the richest in Albania. In this case, tertiary education has an increasing effect upon consumption/welfare inequality in Albania. Hence an increase in access to tertiary education in more prosperous regions without primarily tackling the poor may further increase inequality in Albania. Increasing education in Kosovo on the other hand is most beneficial for the poorest.

In line with the results for the other two education indicators, the coefficient of mean years of education of adult members is strong and significant predictor of consumption and it has the expected sign for both countries. It is estimated that 1 percentage point increase on the average years of schooling of adult members on average increases household's consumption

[75] 100*[exp(0.120)-1] and 100*[exp(0.388)-1]

by 3.3 and 0.9 percent in Kosovo and Albania, respectively, *ceteris paribus*. The Quantile regression results also suggest that this indicator has a positive and strong effect across all consumption quantiles for both countries. In terms of magnitude, the lowest two and the highest quantiles show the largest estimate for Kosovo. Similarly, for Albania it is found that the effect is highest at the lowest and top three quantiles whereas the effect is similar also across the other quantiles for both countries. In other words, the results suggest that the poorest and the richest in general benefit most from increased mean years of education of adults in both Kosovo and Albania.

The highest level of education of the head also appears strongly significant for both countries. In line with theoretical predictions, the positive effect of the education of the head on consumption increases with increased levels of education, the highest being for tertiary. This result is in line with Himaz and Aturupane (2011) and Ogundari (2012). *Ceteris paribus*, compared to households with less than primary or primary highest level of education of the head, those with secondary and tertiary on average respectively, have 11.7 and 37.6 percent higher consumption levels in Kosovo and 8.4 and 30.1 percent in Albania.

The Quantile regression results confirm the positive link between the highest level of education of the head and poverty. Tertiary indicator appears significant and strong over the entire distribution for both countries whereas the effect of secondary indicator varies across the distribution and is insignificant at the 80^{th} quantile for Kosovo. Both the indicator of secondary and tertiary education showed the highest estimate at the lowest and highest consumption quantile for Kosovo. The results tend to suggest that the poorest and the richest households benefit most from having a highly educated head. For Albania, it is found that the secondary indicator has the largest estimate at the 40^{th} and 90^{th} (highest) quantiles. Tertiary indicator on the other hand, showed the largest estimate at the highest two quantiles whereas the effect seems to be more or less similar across other quantiles. This suggests that compared to having a head with up to primary education attained, in general the richest households seem to benefit most from having a highly educated head.

Table 4. 12. OLS regression results for Kosovo robust standard errors

Variables	Model 1 Log Consumption	Model 2 Log Consumption	Model 3 Log Consumption	Model 4 Log Consumption
Max education of adults-secondary	0.120***			
	(0.025)			
Max education of adults- tertiary	0.388***			
	(0.033)			
Share of adults with secondary educ		0.0027***		
		(0.000)		
Share of adults with tertiary educ		0.009***		
		(0.001)		
Mean years of educ of adults			0.033***	
			(0.003)	
Max education of head- secondary				0.111***
				(0.025)
Max education of head- tertiary				0.319***
				(0.041)
Female headed household	0.106***	0.098**	0.078*	0.115***
	(0.039)	(0.040)	(0.039)	(0.041)
Up to two unemployed adults	-0.103***	-0.109***	-0.101***	-0.087***
	(0.022)	(0.021)	(0.022)	(0.022)
Three or more unemployed adults	-0.232***	-0.241***	-0.224***	-0.187***
	(0.037)	(0.037)	(0.037)	(0.038)
Median age	0.009*	0.008**	0.007	0.011***
	(0.004)	(0.004)	(0.004)	(0.004)
Median age squared	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Adult male ratio	0.0018***	0.0014**	0.0013**	0.0019***
	(0.001)	(0.001)	(0.001)	(0.001)
Max educ of mother- illiterate	-0.186***	-0.165***	-0.156***	-0.167***
	(0.027)	(0.028)	(0.029)	(0.032)
Max educ of mother- primary	-0.227***	-0.220***	-0.272***	-0.218***
	(0.032)	(0.032)	(0.032)	(0.034)
Household with migrants	0.166**	0.164**	0.158**	0.155**
	(0.076)	(0.074)	(0.070)	(0.076)
Albanian headed household	0.150***	0.163***	0.152***	0.174***
	(0.036)	(0.036)	(0.036)	(0.037)
Urban location	0.0415*	0.0322	0.0361	0.0552**
	(0.025)	(0.025)	(0.025)	(0.025)
Ferizaj	-0.148***	-0.125***	-0.125***	-0.145***
	(0.037)	(0.037)	(0.037)	(0.0378)
Gjakove	-0.021	-0.006	-0.0005	0.0002
	(0.035)	(0.035)	(0.035)	(0.0356)
Gjilan	-0.233***	-0.221***	-0.245***	-0.235***
	(0.037)	(0.037)	(0.037)	(0.038)
Mitrovice	-0.108***	-0.097***	-0.095***	-0.106***
	(0.035)	(0.035)	(0.036)	(0.036)
Peje	-0.134***	-0.118***	-0.120***	-0.133***
	(0.032)	(0.032)	(0.032)	(0.033)
Prizren	-0.291***	-0.275***	-0.283***	-0.285***
	(0.042)	(0.042)	(0.042)	(0.042)
Area of land	0.0004	0.0004	0.0006	0.0005
	(0.001)	(0.001)	(0.001)	(0.001)
Presence of informally empl. adult	0.049**	0.049**	0.026	0.039*
	(0.021)	(0.021)	(0.021)	(0.021)

Table 4.12. OLS regression results for Kosovo robust standard errors (cont.)				
Observations	**2,274**	**2,274**	**2,274**	**2,274**
R-squared	0.210	0.216	0.198	0.181
Ramsey test	0.857	0.619	0.301	0.641
Cook-Weisberg test for heteroscedasticity	0.0215	0.0061	0.2500	0.0619
skewness	0.0000	0.0000	0.0000	0.0000
kurtosis	0.0000	0.0000	0.0000	0.0000
Prob>chi2	0.0000	0.0000	0.0000	0.0000

*Note: ***, **, * Significant at 1%, 5% and 10% level.*

Household characteristics

Most of the household characteristics indicators are found to be statistically significant and with the expected sign except for female-headed household which appears strongly significant for both countries, yet exerts a counterintuitive (positive) effect. This result is also in contrast to findings in Andersson et al. (2006); Ogundari (2012) and Bruck et al. (2001). The potential reasons for the opposite sign of this indicator underlined in the previous subsection for Albania apply in this case as well. Moreover, according to UNDP (2014b) most of the female heads of household in Kosovo are either not married, widowed or the husband is living abroad. Also the study finds that in general female-headed households are more likely to have someone abroad and if they do they are more likely to receive remittances compared to a similar male-headed household. Holding other factors constant, female-headed households on average have 11.2 percent higher levels of consumption in Kosovo and 9.8 percent in Albania, compared to male-headed ones.

The results across consumption quantiles for Kosovo suggest that this indicator is only significant at convenient levels at the top quantile and from the 40^{th} quantile and above for Albania, which seems to support the abovementioned explanations for the unexpected sign. The effect on consumption is highest at the top three quantiles and considerably lower at the lower ones.

Table 4. 13. OLS regression results for Albania

Variables	**Model 1** Log Consumption	**Model 2** Log Consumption	**Model 3** Log Consumption	**Model 4** Log Consumption
Max education of adults- second.	0.026**			
	(0.013)			
Max education of adults- tertiary	0.172***			
	(0.016)			
Share of adults with secondary educ		0.0015***		
		(0.000)		
Share of adults with tertiary educ		0.0046***		
		(0.000)		
Mean years of educ of adults			0.0088***	
			(0.001)	
Max educ of the head -secondary				0.085***
				(0.0132)
Max educ of the head -tertiary				0.263***
				(0.018)
Female headed household	0.093***	0.090***	0.084***	0.098***
	(0.018)	(0.018)	(0.018)	(0.018)
Up to two unemployed adults	-0.156***	-0.155***	-0.155***	-0.144***
	(0.013)	(0.013)	(0.013)	(0.013)
3 or more unemployed adults	-0.272***	-0.271***	-0.275***	-0.250***
	(0.039)	(0.039)	(0.039)	(0.039)
Median age	0.0045**	0.0038*	0.0047**	0.0046**
	(0.002)	(0.002)	(0.002)	(0.002)
Median age squared	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Adult male ratio	0.0016***	0.0011***	0.0018***	0.0016***
	(0.000)	(0.000)	(0.000)	(0.000)
Max educ of mother- illiterate	-0.141***	-0.131***	-0.190***	-0.096***
	(0.019)	(0.019)	(0.019)	(0.021)
Max educ of mother- secondary	-0.092***	-0.083***	-0.143***	-0.059***
	(0.012)	(0.012)	(0.011)	(0.013)
Albanian headed household	0.107***	0.104***	0.121***	0.113***
	(0.035)	(0.035)	(0.035)	(0.035)
Household with migrants	0.067***	0.064***	0.067***	0.067***
	(0.012)	(0.012)	(0.012)	(0.012)
Urban location	0.036***	0.040***	0.022**	0.035***
	(0.011)	(0.011)	(0.011)	(0.011)
Central	-0.039**	-0.026	-0.046**	-0.032*
	(0.018)	(0.018)	(0.018)	(0.018)
Coastal	-0.104***	-0.092***	-0.117***	-0.098***
	(0.0184)	(0.0184)	(0.0185)	(0.0184)
Mountain	-0.055***	-0.041**	-0.062***	-0.053**
	(0.020)	(0.020)	(0.021)	(0.020)
Area of land	0.0000	0.0000	0.0000	0.0000
	(0.000)	(0.000)	(0.000)	(0.000)

Table 4.13. OLS regression results for Albania (cont.)				
Variables	**Model 1** Log Consumption	**Model 2** Log Consumption	**Model 3** Log Consumption	**Model 4** Log Consumption
Presence of informally empl. adults	-0.029**	-0.029**	-0.035***	-0.023*
	(0.012)	(0.012)	(0.013)	(0.012)
Constant	8.685***	8.691***	8.727***	8.649***
	(0.064)	(0.064)	(0.064)	(0.064)
Observations	6,671	6,671	6,671	6,671
R-squared	0.118	0.125	0.105	0.124
Ramsey test	0.017	0.005	0.624	0.052
Cook-Weisberg test for heteroscedasticity	0.559	0.934	0.919	0.995
skewness	0.0180	0.0228	0.0374	0.0193
kurtosis	0.0000	0.0000	0.0000	0.0000
Prob>chi2	0.0000	0.0000	0.0000	0.0000

*Note: ***, **, * Significant at 1%, 5% and 10% level.*

Regarding age indicators, the results for both Kosovo and Albania suggest that it follows an inverted U-shaped relationship however, only the indicator of median age of adult members appears statistically significant.[76] Findings of other studies in the literature are inconclusive about the direction of age effects, as some studies report a significant U-shaped (Garza-Rodrigues, 2011; Sakuhuni et al., 2011; Githinji, 2011) whereas others an inverted U-shaped relationship (Olaniyan, 2000). Similarly, the Quantile regression results suggest that the indicator of median age of adult members in general is not a significant predictor of per adult equivalent consumption at convenient significance levels in both countries. The squared term is not statistically different from zero across all sets of regressions.

Similar to Probit results, the unemployment indicators exert a strong and statistically significant effect across all regressions for both countries and have the expected sign. It is estimated that the presence of up to two unemployed adults in the households on average decreases consumption by around 9.8 and 20.1 percent[77] in Kosovo and Albania, respectively, *ceteris paribus.* Similarly, presence of more than three unemployed adults in the household decreases consumption by 14.4 and 23.8 percent in Kosovo and Albania, respectively. In other words, as expected, households with unemployed adults have lower consumption when compared to those with no unemployed ones and the magnitude of the

[76] Using the age of the head of the household appears is significant only in Models 1 and 2 for Albania and age of the head appears to have a U-shaped effect on households per adult equivalent consumption. The marginal returns to age on average decrease until around 68.8 years and become positive after this age. The marginal returns to age are calculated using the following formula: ((ageofHead/(2*ageofHead2))

[77] 100*(exp(-0.103)-1) and 100*(exp(-0.232)-1)

effect is higher for those with more than three unemployed adults.

Quantile regression results also suggest a statistically significant link between unemployment indicators and consumption across all quantiles for both countries (except for 90th quantile for Kosovo). Although the effect of unemployed adults is expected to be more pronounced at the lower consumption distributions, the result for Albania suggest that number of unemployed adults has a greater negative impact on households at the better-off quantiles. This finding is in line with Bruck et al. (2007) for Ukraine. For Kosovo however, as expected, presence of up to two unemployed adults has the highest impact on consumption of the worse-off households (10th – 30th quantiles). Presence of more than three unemployed adults on the other hand has the largest impact on the 30th-50th quantiles while the effect is smallest at both ends.

An increase in adult male ratio also is found to increase household consumption however only for households at the mid quantiles in Kosovo. An increase in adult male ratio increases consumption of households across all quantiles except for the poorest in Albania. The indicator shows the largest estimate at the highest quantiles indicating that on average richer households benefit more from an increase on adult male ratio in Albania. This result suggests that rich households with more adult males have a higher chance to have someone employed thus higher levels of welfare.

Ethnicity

The effect of ethnicity is statistically significant with the expected sign for both countries. Holding other factors constant, compared to non-Albanian heads, households with Albanian heads on average have 16.2 and 11.3 percent higher consumption in Kosovo and Albania, respectively. The Quantile regression results for Albania indicate that there are significant differences in consumption between Albanian and other ethnic households only at 40th consumption quantile. For Kosovo, the results suggest that ethnicity matters generally at low and medium quantiles although the magnitude of the impact is more pronounced at the lowest quantile; suggesting that there are no significant differences in consumption amongst Albanian headed households and those of other ethnicity among relatively rich and richest households.

Fertility

Fertility indicators are found to be significantly related (and in most cases highly significant) to consumption in both Kosovo and Albania. The results tend to support theoretical prediction that more educated mothers are less likely to have a higher number of children thus have higher levels of per adult equivalent consumption. It is estimated on average, that households with illiterate mothers or with primary education attained respectively, have around 16.9 and 20.3 percent lower consumption levels than those with higher education in Kosovo whereas 13.2 and 8.8 percent lower consumption in Albania. Similar to Probit, the indicators of mother's education also may account for its effect on household consumption however, it is not possible to make such a distinction given the nature of the data.

The Quantile regression results suggest that the fertility indicators are highly significant and exert a negative effect across all consumption quantiles for both countries. In terms of magnitude, the results for Kosovo indicate that both indicators exert the largest estimate at the highest quantile. This suggests that differences amongst households with illiterate or lower educated mothers and more (higher) educated mothers are the largest amongst the richest households. On the other hand, it is found that having an illiterate mother compared to one with higher education attainment exerts the most consumption reducing effect on the poor in Albania whereas having a mother with primary education attainment exerts the highest effect on the consumption of the rich households.

Migration

As expected, migration is found to be an important determinant of household consumption, highlighting the important role of migration in terms of consumption of households in both countries. The indicator of the presence of migrants abroad is statistically significant at convenient levels and exerts a positive impact on consumption for both Kosovo and Albania. Keeping other factors constant, households with migrants on average have 18.1 and 6.9 percent higher consumption levels than those without migrants in Kosovo and Albania, respectively. Similarly, Jamal (2005) and Fagernas and Wallace (2007) find a positive effect of remittances on consumption however, these studies do not control for potential endogeneity of remittances.

The Quantile regression results for Kosovo suggest that migration matters across most consumption quantiles however, it appears as insignificant at the lowest and highest quantiles. Regarding Albania, it is found that migration matters across all quantiles however, the effect is lowest for households at the lowest and top two quantiles. The results are in line with migration theory and tend to suggest that given migration is considered an expensive journey, the poorest households (those in lowest quantile) may be too poor to fund migration. On the other hand, higher income households can afford migration however may have less incentives to migrate given they may be able to provide income generation activities in home country.

Regional variation

The results suggest that urban location matters more in terms of consumption than poverty for Albania as this indicator is strongly significant across the four sets of models and has the expected sign. Holding other factors constant, households residing in urban area on average have 3.7 percent higher consumption levels compared to those residing in rural areas. Regarding Kosovo, the results indicate that in general there are no significant differences on consumption levels between households residing in urban or rural areas. The Quantile regression results suggest that this indicator appears significant yet only at the highest quantiles. This indicates that there are differences in terms of consumption only amongst richest households. For Albania however the coefficient is statistically significant across all quantiles except for the lowest two quantiles (20^{th} significant only at 10%), suggesting that there are no significant differences on consumption amongst the poor across urban and rural areas. In terms of magnitude, the effect tends to be more pronounced at the top quantiles, implying that residing in urban areas in Albania is of highest benefit for the rich.

Region indicators appear all significantly related to consumption in both countries - except for the indicator of residence in Gjakova – and have the expected sign. Compared to households residing in Prishtina, those residing in Ferizaj, Gjilan, Mitrovice, Peje and Prizren respectively, on average have 15.9, 26.2, 11.4, 14.3 and 33.8 percent lower levels of consumption in Kosovo, *ceteris paribus*. Similarly, for Albania the results suggest that *ceteris paribus* households residing in Central, Coastal and Mountain region, on average have 4.0, 10.9 and 5.6 percent lower level of consumption compared to those residing in Tirana.

Quantile regression results for Kosovo support the expectations regarding different consumption behaviour amongst households in Prishtina and the rest of the regions. However, the significant effect remains limited to households at middle and top of the distribution in Peja while the impact is not statistically different from zero for the poor ones. In contrast, results suggest that differences in consumption behaviour between richest households in Ferizaj and Prishtina are not statistically significant. Differences are evident across the entire distribution between households in Gjilan and Prishtina and the effect is largest at the lowest and top quantiles. Similarly, residing in Prizren compared to Prishtina lowers consumption of households across the entire distribution except for the richest and the effect is lowest at the top quantiles (70^{th} and 80^{th} quantile).

The results for Albania suggest that there are significant differences across regions and Tirana however, only at certain consumption quantiles. Compared to insignificant effect of residence in the Central region in OLS regression, the Quantile regression results suggest a significant effect yet only for households at the 50^{th} and 60^{th} quantile. This result suggests that households of the Central region at the mid quantiles have lower consumption compared to those in Tirana. The results also suggest that there are no statistically significant differences in consumption of poor households in the Mountain region and Tirana. Differences in consumption between households of the Coastal area and Tirana are significant across the entire distribution yet are more pronounced at the lowest quantiles.

In addition, similar to Probit results, the area of land indicator is statistically insignificant for both countries.

Informal employment

In line with theoretical considerations discussed in Section 2.3.2.1, in contrast to poverty results, the OLS as well as Quantile regression results suggest that employment of at least one adult member in informal sector has a negative effect on consumption for Albania whereas a positive effect for Kosovo, confirming both lines of theories. Compared to households without informally employed members those with informally employed members on average have 5.1 percent higher consumption levels in Kosovo whereas 2.9 percent lower consumption in Albania. Quantile regressions results however, suggest that presence of informally employed members matters only for households at the mid and upper quantiles

(except Model 4) in Albania whereas only at lower quantile in Kosovo. In terms of magnitude, the decrease in consumption is most pronounced at top quantile in Albania. The results seem to support the expectations that employment in informal sector is seen as an alternative to lack of employment opportunities in the formal sector and sizeable informal sector in Kosovo especially, amongst the poorest. On the other hand, it has a decreasing effect for those at the medium and high quantiles suggesting that employment in the informal sector adversely affects consumption, as it is not necessarily the only alternative to employment, different from the poor. However, due to limitations of this indicator discussed in Section 4.3.2, the results should be considered with caution.

Table 4.14. Quantile regression results for Kosovo

	Quantile								
Variables	**10th**	**20th**	**30th**	**40th**	**50th**	**60th**	**70th**	**80th**	**90th**
Msecondary	0.184***	0.199***	0.138***	0.110***	0.113***	0.0971***	0.0694**	0.0479	0.0844**
	(0.044)	(0.042)	(0.033)	(0.031)	(0.031)	(0.032)	(0.033)	(0.035)	(0.042)
Mtertiary	0.528***	0.453***	0.385***	0.357***	0.329***	0.310***	0.302***	0.351***	0.396***
	(0.052)	(0.046)	(0.038)	(0.034)	(0.036)	(0.039)	(0.044)	(0.050)	(0.055)
femalehead	0.054	-0.002	0.077	0.069*	0.069	0.098**	0.132**	0.151***	0.198***
	(0.049)	(0.049)	(0.061)	(0.041)	(0.046)	(0.050)	(0.055)	(0.054)	(0.074)
unemployed2	-0.136***	-0.112***	-0.135***	-0.101***	-0.108***	-0.095***	-0.094***	-0.113***	-0.063
	(0.033)	(0.028)	(0.024)	(0.024)	(0.022)	(0.022)	(0.025)	(0.029)	(0.053)
unemployed3	-0.195***	-0.204***	-0.268***	-0.253***	-0.252***	-0.234***	-0.214***	-0.215***	-0.180**
	(0.050)	(0.049)	(0.042)	(0.057)	(0.057)	(0.050)	(0.054)	(0.064)	(0.072)
medianage	0.020***	0.011*	0.012**	0.008	0.003	0.005	0.005	0.004	0.015**
	(0.007)	(0.007)	(0.006)	(0.006)	(0.005)	(0.005)	(0.006)	(0.006)	(0.008)
medianage2	-0.00018**	-0.000	-0.000	-0.000	0.000	-0.000	0.000	0.000	-0.0001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
maleratio	0.002**	0.002**	0.002***	0.002*	0.002**	0.002**	0.002***	0.002*	0.001
	(0.00107)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
MotherIllitera	-0.160***	-0.177***	-0.171***	-0.179***	-0.189***	-0.188***	-0.182***	-0.219***	-0.237***
	(0.040)	(0.039)	(0.029)	(0.039)	(0.034)	(0.033)	(0.037)	(0.040)	(0.055)
MotherPrimar	-0.247***	-0.255***	-0.225***	-0.207***	-0.216***	-0.195***	-0.199***	-0.244***	-0.238***
	(0.048)	(0.048)	(0.037)	(0.039)	(0.042)	(0.037)	(0.042)	(0.049)	(0.056)
migranthh	0.200	0.207**	0.220***	0.134*	0.130	0.184*	0.193**	0.116	0.102
	(0.180)	(0.092)	(0.068)	(0.079)	(0.096)	(0.098)	(0.085)	(0.087)	(0.118)
headAlb	0.209***	0.139**	0.151***	0.127***	0.121**	0.0531	0.0812*	0.0883*	0.0688
	(0.058)	(0.057)	(0.040)	(0.044)	(0.053)	(0.050)	(0.044)	(0.052)	(0.055)
urbanrural	0.02	0.001	-0.002	0.002	0.015	0.013	0.062**	0.083**	0.096**
	(0.036)	(0.034)	(0.025)	(0.029)	(0.029)	(0.028)	(0.028)	(0.036)	(0.047)
ferizaj	-0.220***	-0.212***	-0.203***	-0.194***	-0.203***	-0.162***	-0.106**	-0.103*	-0.091
	(0.058)	(0.050)	(0.046)	(0.051)	(0.049)	(0.051)	(0.049)	(0.061)	(0.076)
gjakove	-0.036	0.040	0.0028	-0.038	-0.052	-0.056	-0.045	-0.045	-0.057
	(0.057)	(0.051)	(0.036)	(0.046)	(0.046)	(0.039)	(0.044)	(0.055)	(0.078)
gjilan	-0.270***	-0.229***	-0.213***	-0.233***	-0.243***	-0.255***	-0.212***	-0.186***	-0.285***
	(0.069)	(0.057)	(0.055)	(0.053)	(0.047)	(0.038)	(0.047)	(0.057)	(0.069)
mitrovice	-0.109*	-0.104*	-0.089**	-0.128***	-0.135***	-0.130***	-0.091**	-0.096*	-0.156**
	(0.056)	(0.057)	(0.038)	(0.044)	(0.044)	(0.040)	(0.045)	(0.054)	(0.067)
peje	-0.075	-0.049	-0.028	-0.091**	-0.155***	-0.180***	-0.206***	-0.231***	-0.328***
	(0.058)	(0.059)	(0.042)	(0.039)	(0.042)	(0.034)	(0.036)	(0.048)	(0.062)
prizren	-0.388***	-0.355***	-0.352***	-0.367***	-0.398***	-0.369***	-0.295***	-0.201***	-0.158*
	(0.061)	(0.057)	(0.048)	(0.049)	(0.049)	(0.052)	(0.068)	(0.066)	(0.089)
areaofland	0.001	-0.000	-0.000	-0.001	-0.000	-0.000	0.002	0.001	0.001
	(0.001)	(0.001)	(0.0001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
informalprox	0.106***	0.092***	0.045*	0.041	0.043*	0.026	0.019	0.046	0.063*
	(0.035)	(0.032)	(0.026)	(0.025)	(0.025)	(0.024)	(0.027)	(0.030)	(0.037)
Constant	2.998***	3.428***	3.629***	3.897***	4.120***	4.247***	4.277***	4.456***	4.471***
	(0.154)	(0.149)	(0.121)	(0.153)	(0.135)	(0.131)	(0.148)	(0.146)	(0.187)
Observations	**2,274**	**2,274**	**2,274**	**2,274**	**2,274**	**2,274**	**2,274**	**2,274**	**2,274**
Correct Specification test									
Hat	P>|t|= 0.934								
Hatsq	P>|t|= 0.291								

*Note: ***, **, * Significant at 1%, 5% and 10% level.*

Table 4.15. Quantile regression results for Albania

Variables	Quantile 10th	20th	30th	40th	50th	60th	70th	80th	90th
Msecondary	0.043*	0.013	0.0035	0.011	0.035**	0.037***	0.033**	0.035**	0.030
	(0.025)	(0.017)	(0.017)	(0.017)	(0.014)	(0.014)	(0.017)	(0.018)	(0.024)
Mtertiary	0.169***	0.140***	0.135***	0.144***	0.153***	0.178***	0.175***	0.190***	0.222***
	(0.026)	(0.019)	(0.020)	(0.018)	(0.018)	(0.021)	(0.024)	(0.025)	(0.030)
femalehead	0.056*	0.043*	0.051*	0.080***	0.085***	0.089***	0.149***	0.137***	0.204***
	(0.031)	(0.023)	(0.028)	(0.027)	(0.024)	(0.024)	(0.028)	(0.028)	(0.049)
unemployed2	-0.117***	-0.127***	-0.131***	-0.154***	-0.161***	-0.172***	-0.182***	-0.199***	-0.168***
	(0.023)	(0.018)	(0.014)	(0.016)	(0.014)	(0.013)	(0.017)	(0.019)	(0.024)
unemployed3	-0.175*	-0.257***	-0.241***	-0.218***	-0.250***	-0.285***	-0.314***	-0.271***	-0.323***
	(0.100)	(0.050)	(0.053)	(0.053)	(0.036)	(0.033)	(0.059)	(0.065)	(0.058)
medianage	0.008**	0.005*	0.005*	0.005*	0.004*	0.003	0.0040	0.002	0.006*
	(0.004)	(0.003)	(0.002)	(0.003)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
medianage2	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
maleratio	0.001	0.001*	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***
	(0.001	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
MotherIlliterat	-0.176***	-0.161***	-0.133***	-0.131***	-0.116***	-0.125***	-0.141***	-0.132***	-0.127***
	(0.038)	(0.032)	(0.026)	(0.027)	(0.026)	(0.022)	(0.025)	(0.031)	(0.039)
MotherPrimary	-0.088***	-0.089***	-0.101***	-0.099***	-0.085***	-0.083***	-0.085***	-0.096***	-0.110***
	(0.0217)	(0.0167)	(0.0164)	(0.0157)	(0.0147)	(0.0149)	(0.0185)	(0.0175)	(0.0232)
migranthh	0.043**	0.074***	0.067***	0.080***	0.077***	0.078***	0.068***	0.057***	0.058**
	(0.019)	(0.018)	(0.016)	(0.015)	(0.014)	(0.014)	(0.016)	(0.018)	(0.024)
headAlb	0.181*	0.114*	0.079	0.121***	0.083	0.036	0.067	0.0038	0.075
	(0.110)	(0.062)	(0.051)	(0.045)	(0.067)	(0.052)	(0.059)	(0.056)	(0.059)
urbanrural	0.026	0.026*	0.034**	0.044***	0.040***	0.047***	0.059***	0.059***	0.050**
	(0.019)	(0.014)	(0.014)	(0.014)	(0.012)	(0.013)	(0.015)	(0.016)	(0.020)
Central	-0.0397	-0.0281	-0.0244	-0.0419	-0.0507**	-0.0455**	-0.0273	-0.0462	-0.0304
	(0.032)	(0.024)	(0.024)	(0.026)	(0.024)	(0.020)	(0.025)	(0.031)	(0.031)
Coastal	-0.151***	-0.119***	-0.099***	-0.108***	-0.107***	-0.089***	-0.077***	-0.096***	-0.089***
	(0.033)	(0.024)	(0.026)	(0.025)	(0.024)	(0.022)	(0.026)	(0.031)	(0.032)
Mountain	0.009	-0.002	-0.016	-0.045*	-0.070***	-0.088***	-0.069**	-0.108***	-0.130***
	(0.033)	(0.025)	(0.025)	(0.027)	(0.025)	(0.022)	(0.027)	(0.032)	(0.034)
areaofland	0.000	0.000	0.000	0.000	0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
informalproxy	0.021	-0.021	-0.019	-0.034**	-0.046***	-0.048***	-0.042**	-0.047***	-0.070***
	(0.021)	(0.016)	(0.016)	(0.015)	(0.014)	(0.016)	(0.017)	(0.017)	(0.024)
Constant	8.071***	8.384***	8.513***	8.549***	8.724***	8.856***	8.861***	9.141***	9.158***
	(0.149)	(0.099)	(0.087)	(0.085)	(0.093)	(0.078)	(0.101)	(0.104)	(0.127)
Observations	**6,671**	**6,671**	**6,671**	**6,671**	**6,671**	**6,671**	**6,671**	**6,671**	**6,671**
Correct Specification test									
Hat P>|t|= 0.126									
Hatsq P>|t|= 0.152									

*Note: ***, **, * Significant at 1%, 5% and 10% level.*

4.6 Conclusions

This chapter provides estimations of the determinants of poverty with specific focus in education for Kosovo and Albania using data from the Kosovar HBS 2011 and Albanian LSMS 2012. Given complementarity understanding deriving from both consumption and poverty approach, OLS and Probit models are estimated. In addition, Quantile regressions are also estimated to account for non-linearities and to investigate the determinants of poverty across the entire consumption distribution.

A key contribution of the analysis is that, different from many studies in the literature, the modelling approach and selection of explanatory variables is based on an explicit theoretical framework. However, data limitations are a constraint for this analysis as well. In general, the Albanian LSMS 2012 includes more information for the household and its members whereas the Kosovar HBS 2011 is rather more limited. This said, to preserve comparability, the analysis is restricted in using only information that is available for both countries.

Theory suggests that some of the factors that determine poverty are expected to be simultaneously determined with poverty; hence in this chapter this issue is addressed by controlling for the effect of the endogenous variables using pre-determined and exogenous indicators so to minimize the endogeneity bias as much as possible. Given the focus of the thesis, regressions are estimated using four different education measures given highest education attainment of the head or his/her mean years of education might not be the most appropriate. Therefore, following the discussions in Section 4.3.2 indicators of maximum level of education in the household, share of adult members with respective education attainment and mean years of education of adults are considered given they tend to better reflect the role of education on poverty. In addition, results using highest education attainment of the head are also presented given its general use in the literature.

Most of the explanatory variables appear significant and are largely in accordance with theoretical expectations. The results of OLS and Probit estimations provide a consistent story and are largely similar for both countries with the exception of urban residence and female-headed household and informal employment indicators. Quantile regression results in general

confirm the significant relationships found in OLS estimations however, in some cases only for households at particular quantiles. Moreover, the impact of indicators in general differs depending on the welfare position of households.

The findings of the empirical analysis on this chapter provide support for the fourth research question. More precisely, as expected more education is found to increase consumption and reduce poverty risk for both Kosovo and Albania, irrespective of the education indicator or the estimation technique utilized. As expected, more education is found to increase consumption and reduce poverty for both Kosovo and Albania. In line with theory, returns to education are found to be non-linear and offer higher returns for the worse-off in Kosovo whereas for the better off in Albania. A possible explanation for higher effect of tertiary education on the richest in Albania could be that, individuals from richer households are more likely to have better connections and have more people belonging to their social network that occupy highly paid jobs. This as a result, may help them get better paid jobs than their poor counterparts hence contribute more to household welfare – have higher consumption.

Although returns to education are found to be positive for both countries, the results suggest that labour market tends to reward education more in Kosovo. A potential reason could be the higher wages in public sector in Kosovo which according to IMF (2015) since independence are considered to have outpaced not only private wages in Kosovo but even the public wages of other Western Balkan countries. According to UNDP (2014c) Kosovo is also considered to experience a high skill premium, with the salaries of postgraduate degree holders being almost double that of those holding a bachelor degree. Moreover, from the post-conflict period international missions have been present in Kosovo, and offer wages considerably higher than average wage in the country (Wählisch, 2010).

In addition, specific features of country under investigation are identified, including the relatively high importance of migration and the employment in informal sector. In addition, highest level of education attained by mother is included as proxy to fertility given the data availability and least limitations since most widely used indicators - households size and number of children – are direct measures of fertility thus are considered to be endogenously related to poverty.

In line with expectations, migration is found to be important across all models and exerts a poverty reducing effect (increases consumption) for both Kosovo and Albania. Moreover, the Quantile regression results for Kosovo confirm theoretical expectations that poorest households cannot afford migration. This finding is similar to findings in Möllers and Meyer (2014) who find that remittances have no effect on the extremely poor in rural areas in Kosovo. Regarding the rich households, results support expectations that they may not migrate as they have fewer incentives to do so.

Employment in informal sector is found to be important only in terms of consumption and the results confirm both lines of theory. Presence of informally employed member is found to have an increasing effect on consumption for Kosovo whereas a reducing effect for Albania. However, the Quantile regression results suggest that informal employment provides benefits only for households at the lowest quantiles whereas for Albania it only matters and has a decreasing effect for households at middle and top quantiles. This said, although it is not preferred to formal employment in terms of working conditions and the earning potential, informality seems to improve the welfare of poor households in Kosovo. Nevertheless, it is not enough to pull them out of poverty. These results support expectations that informal employment in Kosovo is an alternative to formal employment in presence of persistently the persistently high unemployment rates. Another explanation could be that returns to education in Kosovo primarily being in terms of employment rather than earnings premium. In Albania, this does not seem to be the case as the results highlight the negative (undesirable) impacts of informal employment in Albania (at the top end of the distribution).

The importance of education of the mother –as a proxy to fertility- has been underlined by results across the three models and for both countries. The households with less educated mothers are found to have a lower level of consumption and higher poverty risk. The results support theoretical expectations that households with less educated mothers are expected to have lower levels of welfare. The results also confirm the expectations regarding the effect of unemployment on consumption and poverty for both countries and the strong link is also confirmed by Quantile regression results. As expected, compared to households with no unemployed adults, those with up to two or three or more unemployed adults have higher poverty risk and lower levels of consumption and the effect is higher the higher the number of unemployed adults.

It is also found that in general households that belong to ethnic minority groups have a higher risk of poverty and lower levels of consumption compared to Albanian ones. Nevertheless, in general, the differences in consumption are statistically significant only for low and middle quantiles in both countries. The results also highlight differences in consumption and poverty risk amongst regions in both countries. Residing in other region (except for Gjakova) rather than Prishtina significantly lowers consumption level and increases poverty risk. The differences are also confirmed by Quantile regression results except for the poor in Peja and the top in Ferizaj. The results for Albania suggest that there are differences between households residing in regions other than Tirana however, generally only at certain consumption quantiles.

Results suggest that poverty is widespread in both countries as there are no statistically significant differences in poverty risk between urban and rural households. In terms of consumption results indicate that urban households have higher consumption compared to rural ones in Albania except for the poorest household. In Kosovo however, it is found that there are no differences in consumption amongst urban and rural households implying that poverty is a phenomenon also amongst urban households.

Finally, it should be noted that due to potential problem of sample selection due to using pre-determined variables, it is challenging to interpret the estimated parameters in terms of the effects on other households, as the effect could be overstated. Moreover, taking into account the limitations of some indicators, the results should be considered with caution and indicative at best.

CHAPTER 5

MODELLING SIMULTANEOUS DETERMINATION OF POVERTY, REMITTANCES AND POVERTY

Table of Contents

5.1 Introduction

Chapter 2 reviewed the theory behind different markets that the household makes decisions in as well as the empirical studies concerned with determinants of poverty. The theory suggests that poverty migration and remittances as well as fertility are co-determined. Given theoretical suggestions in Chapter 2, this chapter develops a model to estimate simultaneous determination of poverty, remittances and fertility. This estimation will enable exploring the impact of education on poverty via different channels. The method allows inclusion of endogenous explanatory variables in equations.

In addition to Chapter 4, this chapter further pursues the third research question considering the expectations on joint determination of poverty, remittances and fertility as well as the effect of education on poverty via different channels in addition to its direct effect. Drawing from theoretical links elaborated in Chapter 2, an illustration of simultaneous relation between poverty, remittances and fertility and the mechanism via which education affects poverty is provided in Section 5.2. Section 5.3 presents a detailed explanation of the empirical approach and the methodological issues related to it. Section 5.4 outlines the selection and measurement of the dependent variables in the system and limitations related to them given the nature of the Three Stage Least Square (3SLS) technique. Given the limitations of the Kosovar Household Budget Survey (HBS) 2011, the analysis in this chapter focuses only in Albania since LSMS 2012 dataset provides the necessary information for regression analysis (Section 3.3).

The choice of variables to be included in the remittance and fertility equations is based on the theoretical grounds that are discussed in Section 2.3, context of the country under investigation as well as the commonly used indicators in the literature. Therefore, given that the determinants of poverty are discussed in more detail in Chapter 4, Section 5.5 discusses the empirical determinants of remittances and fertility. Parallel to this the indicators to be included in respective equations and their expected effect are discussed. Different from previous analysis, this chapter includes measures of fertility and remittances and not their proxies given the estimation technique allows inclusion of endogenous variables as explanatory variables. The discussion is centred on the household level determinants of

poverty, migration and remittances and fertility, considering that the empirical analysis followed in this study has the household at its focus. Concluding remarks are summarised in Section 5.6.

5.2 Causality between poverty, fertility and remittances

Drawing from the theoretical considerations and the empirical review provided in Chapter 2, this section aims to illustrate the expected causal determination of poverty, remittances and fertility and the mechanism via which education affects poverty, which provides the base for the modelling approach. These relationships are illustrated in Figure 5.1. According to Rolleston (2011), the relationship between education and household welfare/poverty is considered to be co-determined. However, the highest level of education attained can be considered as pre-determined to poverty given the decision about it has been taken in the past and in a different household; moreover, it is the current level of education attained that matters most in terms of poverty. This said, a separate equation for education is not included in the system.

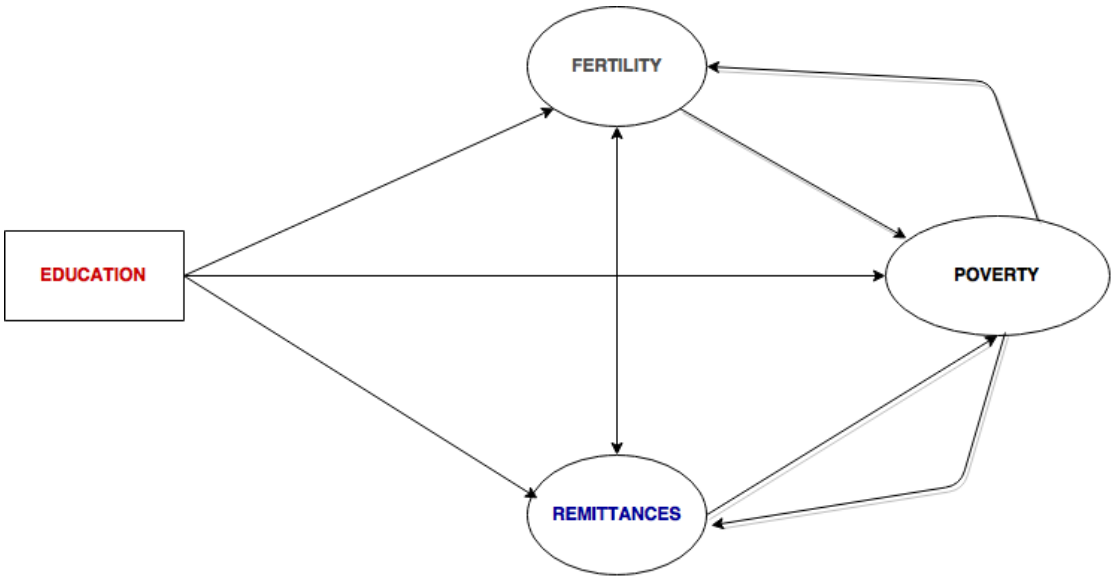

Figure 5. 1. Mechanisms via which education affects poverty

Relationship between migration, remittances and poverty

Migration is stimulated by both economic and political factors. In economic theory the migration decision is primarily motivated from wage differentials in the host and home countries as well as employment possibilities or security (Litchfield and Waddington, 2003). Household weighs the costs and the expected benefits of migration and decides to have a member migrating if the net present value of migration is positive. Migration may also serve as a risk diversification strategy of the household. The migrant on one hand is supported by the family until they find employment in a destination country while on the other hand migration may serve as income insurance for the household as it helps better dealing with shocks given that migrants send back remittances. In addition, migration may reduce credit constraints for the non-migrant household members thus help them engage in self-employment activities by financing their investment activities.

Migration, remittances and poverty are argued to be interrelated. Poverty may stimulate migration, the lower the household's income (or wealth), the higher the likelihood or incentive of sending a migrant (Stark et al., 1986; Garip, 2006). Poor households may use migration as a strategy to improve economic situation and risk strategy however may be too poor to fund it. As a result, they can be selected out of migration. Presence of migration networks increases the possibility of migration by lowering the costs of migration and increasing its benefits and this was the case in Kosovo and Albania in selected regions (Section 3.2.3).

Although poverty may affect migration decisions, it is only through remittances that migration affects current poverty/consumption of the household.[78] Remittances may help reduce household poverty, but the level of poverty may also influence the amount of remittances sent to a household. On the other hand, poor households are more likely to receive remittances (Stark et al., 1986; Garip, 2006) and if remittances are directed towards the poor they are expected to decrease poverty.

Education can also be an important factor determining the decision to migrate. Educated individuals are more likely to migrate given they are more likely to benefit from migration

[78] Migration could have affected welfare of household also in other ways when individual migrated such as take savings with him or the income he/she earned before migration. However, it seems reasonable to assume that migration affects current level of poverty mainly via remittances.

due to higher chances of employment and higher potential wages.[79] Despite affecting the migration decision, education is also expected to affect the amount of remittances sent, which in turn are expected to affect levels of poverty. The amount of remittances sent depends on wages the migrant earns. Migrants may not come from the lower income distribution thus remittances may not flow to the poorest households. More educated migrants are also more likely to migrate with the whole household or they may originate from a richer household whose demand for remittances may be lower than that of the poorer ones (Niimi et al., 2008; Bollard et al., 2009). That said, it is ambiguous apriori which of the above effects dominates. On the other hand, less educated migrants are expected to earn less thus have a lower sending potential than their counterparts.

Although there is a common understanding that migrants tend to remit to their families in the origin country, there is no conclusive evidence on impact of education on remittances. Empirical studies generally find that higher educated remit more than the less educated ones (Osili, 2007; Vanwey, 2004; Hagen-Zanker and Siegel, 2008; Bollard et al., 2009; De Brauw et al., 2013; Ramos and Matano, 2013; Hou et al., 2014) however Duval and Wolf (2010) find support for higher remittances from less educated. In addition, Bouoiyour and Miftah (2014) find no influence of the level of education of migrants on their transfer behaviour but find the employment status to have a significant effect.

Although more educated migrants are more likely to earn more (Sarwar and Sial, 2011; Hagen-Zanker and Siegel, 2008; Duval and Wolf, 2009), in terms of poverty what seems to matter is the motivation to remit. Different remitting motives are expected to affect poverty differently. According to the altruistic model, the amount remitted is affected by the welfare state and size of the household whereby, the amount remitted should increase in cases when the household income decreases – due to adverse economic shocks - whereas an increase in migrant's income increases it. The remittances sent for altruism are more likely to influence poverty directly, as they help households to smooth their consumption patterns and reduce the household expenditure burden of poor families. This type of remittances cannot be considered as exogenous to poverty. Under the 'tempered altruism' (a mix of both altruism and self-interest) remittances are expected to reduce household poverty as it is expected to

[79] Provided the skills and experience match with the requirements in the host country. However, skilled individuals may also migrate to do some unskilled work - mainly if no job opportunities are available in home country or for political reasons. This seems to highlight the importance of country specific case.

help them smooth consumption and also invest in projects with higher risk thus improve household utility. Remittances can be considered as exogenous to poverty if the reason for remitting is self-interest but as endogenous if the main reason has been altruism.

Self-interest and bequest motive is theoretically associated with wealth of the household (Shehaj, 2013). Thus, migrants with an inheritance motive should be more likely to remit and particularly send more if they have richer parents. Evidence suggests that better-off parents receive a larger share of migrants' earnings through remittances (Hoddinott, 1994; Lucas and Stark, 1985). In addition, consistent with the self-interest motive to remit Sayan (2006) and Lueth and Arranz (2007) find that remittances are pro-cyclical.

Empirical studies find support for all the three motives: altruism (Agrawal and Horowitz, 2002; Osili, 2007; Vanwey, 2004; Bouoiyour and Miftah, 2014; McDonald and Valenzuela, 2012), self-interest (Bohra-Mishra, 2014; Hagen-Zanker and Siegel, 2008; De Brauw et al., 2013; De la Briere et al., 2002), and tempered altruism (Lucas and Stark, 1985; De Brauw et al., 2013; Amuedo-Dorantes and Pozo, 2006; Bouoiyour and Miftah, 2014; Batista and Umblijs, 2014; De la Briere et al., 2002).

Considering the context of low-income countries, Albania and Kosovo in particular, it is expected that remittances are driven by altruist motives (Section 3.2.3); suggesting that remittances and poverty are endogenously related. According to Castaldo and Reilly (2007) and Blouchoutzi and Nikas (2014), the existing studies show that remittances in Albania are mainly used to fulfil basic consumption needs (to purchase food and basic necessities) and UNDP (2010; 2012a) suggests the same for Kosovo. Moreover, according to Hagen-Zanker and Siegel (2007) Albanian migrants generally migrate to remit. This is confirmed with the LSMS 2012 data, finding that only around 3 percent of migrants sent back money to the family for his/her own use, such as investing in a business, building or remodelling a house.

Given the theoretical considerations (due to selectivity issue), it is usually assumed that only households with migrants have access to international remittances (Jimenez and Brown, 2008). More precisely, when modelling remittance receipt it is expected that only households with migrants should be included in the sample given it is them that are expected to receive remittances. This is not the case in this analysis due to two main reasons which are elaborated further in the next section. First, due to requirements of the estimation technique for the

number of observations to be the same in each equation and second, due to prevalence of remittances from relatives and friends in Albania and their importance in terms of poverty.

Relationship between fertility, education and poverty

Education is considered to be one of the most important determinants of fertility. Parental education, especially that of the women is expected to lower fertility (Becker et al., 2012). Mothers with a higher level of education are expected to have a larger opportunity cost of bearing children compared to those with lower levels of education (Willis, 1973 in Miranda, 2010). An increase of the labour market participation and real wage of women can lead to an increase in the opportunity cost of having children, in particular if the mother is concerned about the quality of time that she spends with the children. This may lead to a reduction in fertility. Given households with lower fertility are expected to have lower chances of being poor, fertility is another indirect channel via which education affects poverty. The impact of education in reducing fertility may also work through improved knowledge about contraceptives and the effective use of contraceptive methods (Omariba, 2006 in Khattak et al., 2011) and better use of the health services (Al Riyami et al., 2004). Earlier motherhood can be expected to be related to more children (Mason, 1987). Also, it may increase women's bargaining power and independence in the household hence, increasing her participation in fertility decision-making (Gunes, 2013; Imai and Sato, 2014) namely women's empowerment. More educated women may delay marriage and/or the birth of first child hence, have a lower fecundity period and number of children.[80] In other words, it may have an impact on determining the age at marriage and number of children (Breierova and Duflo, 2004) as well as contraceptive use.

Literature suggests that poverty and fertility are jointly determined. Large households are more likely to be poorer (Arpino and Aassve, 2008; Dupta and Dubey, 2011) and poor households are more likely to be larger. Poverty may increase poor household incentives to have large number of children for several reasons (Becker and Lewis, 1973; Dupta and Dubey, 2011): as a source of support in old age; to counterbalance the expected higher infant mortality rates; as well as due to lack of information on preventive mechanisms (Olfa and El-Lahga, 2002). In addition, large households are more likely to have low per capita income

[80] In general women can be considered to have stronger preferences for lower number of children than men especially if the childbearing is predominantly done by them.

and although the child labour may to some extent attenuate it, the compensation is generally low. Large households are also more likely to pursue less educational investment (Arpino and Aassve, 2008) which in the long-term results in lower potential earnings for children, thus fostering intergenerational transmission of poverty. This said, it is not clear apriori which effect dominates and it seems to be country context-dependent.

The empirical studies on the impact of fertility on poverty generally find that an increase in fertility increases the probability of being poor or decreases consumption (Mussa, 2009; Kim et al., 2009; Dupta and Dubey, 2011; Aassve et al., 2005; Klassen et al., 2013; Arpino and Aassve, 2008; Arpino, 2014). Libois and Somwille (2014) find no effect of number of children on consumption. Empirical studies also find support for the effect of poverty on fertility. Olfa and El-Lahga (2002), Moeeni et al. (2014) and Jha (2013) find that if household income increases, households prefer to have less but higher quality children. Findings in Al Qudsi (1998) suggest that an increase in consumption increase fertility nevertheless the indicator is significant only at 10% level. Tadesse and Asefa (2002) on the other hand, find a statistically significant inverted U-shaped relationship between consumption and fertility. Aassve et al. (2005) in a cross sectional perspective find a positive association between poverty and number of children in Albania although in a dynamic one the poor households do not necessarily have a higher rate of fertility, but high fertility households tend to have a higher rate of entering and lower rate of exiting poverty.

Studies that take into account the simultaneous relationship between fertility and poverty is limited. The evidence from simultaneous analysis is inconclusive. Sharif (2007) finds that fertility decreases poverty whereas poverty increases fertility. Aasve et al. (2006) on the other hand, find very little support for the causal feedback mechanism from poverty onto fertility and a rather weak feedback from childbearing onto poverty once state dependence is controlled for. Mattei et al. (2009) find that high fertility is strongly related to poverty but only little evidence of any negative feedback of improved living standards on fertility.

Remittances and fertility

In addition to expected causality of poverty with fertility, literature suggests that fertility affects the decision to migrate and remit and vice versa; suggesting that there is a causal relationship also between fertility and remittances. Larger households - especially those with

more children- are more likely to receive remittances should the altruism motive prevail as the migrant feels responsible for their welfare (Hagen-Zanker and Siegel, 2007). Moreover, larger households are more likely to have excess labour therefore, more likely to send someone abroad.

However, remittances are also expected to affect fertility decision. Remittance receipt is expected to increase financial/income resources available to household without having an impact on relative opportunity cost of children to parents. Namely, remittance receipt increases household disposable income without affecting the time that a couple can spend in raising children. Therefore, an increase in income due to remittances is expected to increase the number of children, other things being equal. However, receiving households (couples) may decide to spend a portion of this additional income on investing in human capital of current children or household members (Naufal, 2015). As a result, remittances may not necessarily result in increased number of children.

Remittance inflows improve the receiving household's access to credit and also serve as informal credit especially when dealing with shocks such as those related to health (Ambrosius and Cuecuecha, 2013; Naufal, 2015). They can also provide means to start small businesses that may result in higher and potentially stable future earnings. This may as a result have an increasing effect on fertility because they can afford to, but also as a means to secure future help (Daz-Briquets, 2014; Naufal, 2015). However, this may increase employment opportunities for women in the household, therefore increase the opportunity cost of child rearing hence decrease fertility.

To conclude, this discussion suggests that poverty, remittances and fertility are simultaneously determined. Studies however, have estimated determinants of poverty, fertility and migration and remittances separately. To our best knowledge, to date there is no study that examines the simultaneous determination of poverty, migration (and/or remittances) and fertility. Therefore, the main scope of this chapter is to investigate simultaneous determination of the abovementioned relationships with poverty. In addition to its direct effect, education is likely to affect poverty via its effect on migration, remittances and fertility. This chapter explores the impact of education coming through different channels.

5.3 The empirical approach

Theory suggests that poverty, remittances, and fertility are simultaneously determined hence they should be estimated using a system of structural equations. Due to expected causality, the equations contain endogenous variables among the explanatory variables. Namely, dependent variables appear as explanatory variables in other equations in the system. These models are considered to be non-recursive (Stata, 2013). As noted in the previous section, education is treated as being pre-determined to poverty. Hence, a separate equation for determination of education is not included. This said, the system ends up having a set of three simultaneous equations namely, the determinants of fertility, remittances and poverty equations.

$$F_{i1} = \alpha_1 + \gamma_{11}C + \gamma_{31}R + \beta_{n1}E + \beta_{m1}S + \beta_{j1}CH + \varepsilon_1 \quad (9)$$

$$R_{i2} = \alpha_2 + \gamma_{12}C + \gamma_{22}F + \beta_{n2}E + \beta_{k2}A + \beta_{l2}N + \varepsilon_2 \quad (10)$$

$$C_{i3} = \alpha_3 + \gamma_{23}F + \gamma_{33}R + \beta_{n3}E + \beta_{m3}S + \beta_{k3}A + \beta_{o3}I + \varepsilon_3 \quad (11)$$

Where the endogenous variables F_i R_i and C_i are: the average number of children born to a mother in the household, a dummy variable for remittance receipt from family members, relatives or friends and natural log of per adult equivalent consumption for household i = 1…N, respectively. E is a vector of exogenous and pre-determined variables in all equations and includes indicators of education, unemployment, health, region and urban residence, household characteristics, asset index and social capital index. S is a vector of exogenous and pre-determined variables included only in fertility (9) and consumption equation (11) and include characteristics of mother and share of female children born. A is a vector of exogenous and pre-determined variables included only in remittance (10) and consumption (11) equation and include share of unemployed adults and regional indicators.

I, CH and N are vectors of poverty, fertility, remittance equation instruments. *I* includes informal employment indicator, *CH* includes religion and contraceptive use whereas *N* includes migration network indicator, relative deprivation index and migration period dummies.

Estimating each equation separately would produce inconsistent and biased estimates when the variables are jointly determined. Therefore it is more appropriate to estimate the set of abovementioned equations in a Simultaneous Equation Model (SEM). An estimation technique that allows estimating simultaneous equation system with endogeneity is Three Stage Least Square (3SLS) (Wooldridge, 2008) and can be estimated in STATA using reg3 command. 3SLS combines the properties of Two-Stage Least Squares (2SLS) with Seemingly Unrelated Regressions (SUR). Hence, an advantage of 3SLS approach is that both endogenous and exogenous variables are allowed to appear on right hand sides of equations. The third stage – which is the SUR part - accounts for the correlation between the error terms of each equation.

To apply the 2SLS to the system of structural equations, the reduced form equations are estimated by the Ordinary Least Squares method to obtain the fitted values for the endogenous variables in the first stage (Greene, 2012). The structural equations, in which the fitted values are used in place of the right-hand side endogenous variables, are then estimated in the second stage. Additionally, the 3SLS method provides a third step in the estimation procedure that allows for non-zero covariance between the error terms across equations. The essential advantage of the 3SLS estimation technique, therefore, is that it allows not only for simultaneity among the set of household decisions but also correlation between equations which occurs due to unobserved thus not included factors that are common to some or all equations. As long as the system of equations is properly identified, 3SLS provides estimates which are consistent and more efficient in the presence of simultaneity bias. Moreover, in cases when the error terms in each regression are heteroskedastically linked, 3SLS will produce more efficient estimates (Greene, 2003).

In order for an equation to be identified two conditions should be fulfilled, the order condition for identification and rank condition (Wooldridge, 2009). The order condition for identification is satisfied if the number of exogenous excluded variables from the equation is at least as large as endogenous number of right-hand side variables in the equation (Wooldridge, 2009). The equation is unidentified if the number of excluded exogenous variables is lower than the endogenous right-hand side variables hence, the parameters cannot be estimated. The three equations in the system satisfy the order condition yet the equations are overidentified because the number of excluded exogenous variables is greater than the number of endogenous variables. Thus, the Sargan-Hansen test for overidentifying

restrictions is applied. The Sargan-Hansen test is a test of the joint null hypothesis that the excluded instruments are valid instruments, i.e., uncorrelated with the error term and correctly excluded from the estimated equation (Baum et al., 2006). A strong rejection of null hypothesis of the test implies that one should doubt the validity of the estimates.

Although the purpose of the study is to investigate the simultaneity of poverty with remittances and fertility, it is desirable to first apply the single equation estimation technique to the abovementioned equations separately. The single equation estimation results presented in Chapter 6 are comparable to those provided by the previous studies which ignore the interdependence of the decision-making processes that this research aims to investigate. More precisely, in order to determine the potential simultaneity bias and find out if the SEM with 3SLS as an estimation method is justified, equations 9-11 are estimated separately with OLS. In addition, 3SLS and 2SLS estimates are also compared to determine presence of the simultaneity bias as well as to find out if there is a gain in using 3SLS.

The 3SLS requires complete information on the relevant variables in determining the relationships within the system. If information on a particular indicator is missing for a certain number of households, reg3 command in Stata drops missing observations across all equations rather than individually for each equation.

In order to satisfy the OLS assumptions it is necessary to test for heteroscedasticity. In presence of heteroscedasticity bootstrapping could be used in order to obtain heteroscedasticity consistent standard errors.[81]

5.4 Dependent variables and their measurement

5.4.1 Poverty indicator

The poverty indicator is the natural logarithm of monthly per adult equivalent consumption adjusted for regional price differences.

[81] In presence of heteroscedasticity Persson (2014) utilized Conditional (recursive) Mixed-Process estimator (CMP) with MLE which produces heteroscedasticity consistent standard errors. However, as it is explained in more detail below, CMP cannot be utilized with the same system as in 3SLS given it can only fit sets of equations with clearly defined stages, not ones with simultaneous causation.

5.4.2 Fertility indicator

Given the level of analysis in the estimations is the household and considering the presence of extended households in the sample, an average measure of fertility per family in the household is included. To construct the indicator, initially all the families living in extended households are identified in order to best represent the fertility decisions of families.[82] For the main family (household head and spouse), the indicator of the number of children born includes children present in the household but also children that are no longer living in the household. This information however, is not available for the rest of the families in the household. After identifying the number of children born in each family, an indicator of the average number of children born per family in the household is generated. The estimation technique utilized requires the units of observation to be the same in each model. Accordingly, the unit of observation has to be the same in each model. Despite measuring fertility more accurately, it also helps in focusing on the appropriate cohorts/generations hence, the results are pure and not mixed with the effects that may come from older generations. In this way we focus on individuals who are at the peak in terms of employment or labour market earnings.

It should be noted that due to data availability the indicator of the number of children born to a family does not include children that were born but later on have died. Albanian LSMS 2012 provides information on the number of children that have died however only amongst children that were born during the last three years before the survey. The data suggest that only in two households the child has died which suggests that over the last years child mortality is not prevalent. Child mortality could be more of an issue for households with older mothers –which we do not include in the sample (explanation provided below). Moreover, Miranda (2010) argues that economic models of fertility choice mainly consider that households make decisions regarding the number of surviving children rather than live births or number of pregnancies. That is, households decide about the total number of children at the end of their fertile life, regardless of the number of pregnancies required reaching such a number.

In order to model fertility as precisely as possible, the sample is restricted to include only households where the mothers belongs to the age group at which majority of women give

[82] For more details on the procedure of identifying and assumptions made see Appendix 5A

birth in the country (see also Ueda, 2007; Bhaumik and Nugent, 2005; Kamaruddin and Khalili, 2015; Imai and Sato, 2014; Miranda, 2010). The restriction helps avoid including mothers that are under the childbearing age or older mothers as the number of children in these households may be miscounted given some children may have already left the household. Moreover, potential generational differences could be an issue as older generations could have had a different view on fertility compared to younger ones.

Studies generally imposed specific restrictions on their sample to mothers aged from minimum 15 to maximum 50 years old. More precisely, Ueda (2007) restricts the sample to mothers aged 20-50 years whereas Bhaumik and Nugent (2011), Kamaruddin and Khalili (2015) and Imai and Sato (2014) to 18-49 and 18-45 and 15-49 years, respectively. Miranda (2010) on the other hand includes only mothers aged 40 or over given it argues the study is concerned with completed fertility. National data on age of mother at birth suggest that there is only a small share of mothers that give birth at 15 to 19 age interval whereas most mothers give birth during 20 to 40 age interval (INSTAT, 2015). Although it is impossible to measure fertility with perfect accuracy, considering age 15 as the lowest limit may result in miss measuring fertility. Most of very young mothers currently may have no children hence, would be treated in estimations as they have no preferences of having children at all; or may have only one although they might have more children in the future. Also the data suggest that the share of families with mothers belonging at this early age in the sample is very small (55 thus less than 1% of total sample). Given 18 is the earliest legal age to get married in Albania it seems reasonable to use it as the lower limit. The issue of some households with few children that could be getting more children in the future is still partly present although at lower extent, and this effect is partly captured by the age variable. This said, only households where average age of mothers is 18-45 years old are included in the sample.

In addition to age restriction, only families with married couples or those living together are included. Families with widows and divorced couples within the household are excluded given information on the spouse (generally father) is not available and it would not represent the decision making process between the couple. After these restrictions, the sample includes a total of 3,064 families from 3,022 households.

Another issue related to fertility indicator is that it is a count variable although theoretically it seems plausible to treat it as a continuous one.[83] Several studies in this literature treat and model fertility as a continuous variable (Hashmi and Mok, 2013; Imai and Sato, 2014[84]; Jha, 2013[85]; Rasul, 2008).

Count data are constrained to be non-negative. Fitting a linear model to these data can cause predicted negative counts (Wooldridge, 2002; Greene, 2003). Therefore, studies utilize estimation techniques that deal with count data such as Poisson (Moeeni et al., 2014; Tadesse and Asefa, 2002; Kamaruddin and Khalili, 2005) Ordered Logit/Probit (Imai and Sato, 2014)[86], Multinomial Logit (Jha, 2013)[87], Negative Binomial Distribution models (Al Qudsi, 1998; Rasul, 2008). Miranda (2010) on the other hand estimates a Poisson Double Hurdle Model. For strictly positive variables, the natural log transformation of the variable can be used however, this is not possible with variables that also have zero outcomes as it is the case with the fertility indicator.

In 3SLS responses are continuous and unbound and only generalized linear models with a Gaussian error distribution can be modelled. As a result, fertility equation cannot be estimated using appropriate techniques that deal with count data. This said, availability of alternative approaches is considered however, there seems to be no other estimator that allows estimation of non-recursive models. Conditional (recursive) Mixed-Process estimator (CMP) allows the equations to have different kinds of dependent variables. However, CMP only fits sets of equations in which there is simultaneity but instruments allow the construction of a recursive set of equations, as in 2SLS, that can be used to consistently estimate structural parameters in the final stage. What matters for the validity of CMP is that the system of equations is recursive, whether or not the model is (Roodman, 2007).[88]

[83] In addition to the number of children other examples include the number of accidents to a person or the number of visits to the doctor, the number of times someone is arrested during a given year, number of cigarettes smoked per day, and number of patents applied for by a firm during a year (Wooldridge, 2002).
[84] Ima and Sato (2014) also estimated the determinants of fertility using Ordered Logit estimation and 2SLS technique.
[85] Jha (2013) also takes more than one approach, in addition to OLS it estimates a Probit and Multinomial Ordered Logit. Rasul (2008) in addition to OLS as a baseline model estimates Ordered Probit and Negative Binomial models.
[86] The study also estimates the model using OLS as well as using an instrumental variable model to control for potential endogeneity of mother's education.
[87] Jha (2013) also estimated fertility determinants using OLS and Probit.
[88] 'Mixed process' means that different equations can have different kinds of dependent variables. 'Recursive' means, however, that CMP can only fit sets of equations with clearly defined stages, not ones with simultaneous causation. A and B can be modelled determinants of C, and C can be a modelled determinant of D, but D cannot be a modelled determinant of A, B, or C. Conditional means that the model can vary by observation (Roodman, 2007).

The typical case where the OLS assumptions are violated when dealing with count data is the normality assumption. Since the dependent variable is not normally distributed, the error term has the same property (Wooldridge, 2009). Figure 5.2 suggests that the distribution of the fertility indicator (number of children born to a family) is slightly skewed but still close to normal distribution. Moreover, if most of the variation in the model is explained by the independent variables, then the difference between the estimated and the true model will not be very large, implying a smaller bias in estimated coefficients. Furthermore, as the sample is large, the error term can still be close to normal distribution (Gudbrandsen, 2010). This said, acknowledging fertility indicator limitations, it seems most appropriate to proceed with 3SLS given the scope of the chapter and advantages of using it.

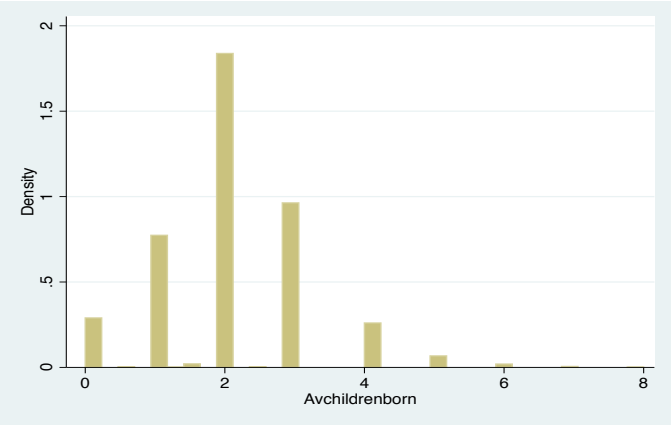

Figure 5. 2. Average number of children born to a family in Albania

5.4.3 Remittance receipt indicator

The empirical modelling strategies in migration and remittances literature generally treat migration and remittances as independent decisions. Moreover, most studies focus in testing specific parts of theory (Shehaj, 2012). Findings of research suggest that none of the theories of migration alone can explain all the dynamics of migration and receipt of remittances (Ibid). A number of studies concerned with determinants of remittances use data from surveys with migrants thus, in their estimations they only include individual migrants (Niimi et al., 2008; Roman, 2013; Goschin and Roman, 2012; Emanuel et al., 2012; Germenji et al., 2001; Amuedo-Dorantes and Pozo, 2006). Some other studies that analyse decision to remit

utilize household living standard measurement surveys but base the analysis on a sample of migrant households only (Agrawal and Horowitz, 2002; Garip, 2006; Gubert, 2002).

Garip (2006) argues that theoretical considerations and empirical findings suggest that migration and remittances could be interrelated. However, treatment of these two phenomena as interrelated is almost non-existent in the literature. The abovementioned study investigates interrelation of migration with remittances and findings support the need for jointly modelling migration and remittance behaviour, while taking into account potential endogeneity and sample selection biases.[89] Shehaj (2012) on the other hand, argues that it is more appropriate to analyse the two phenomena as one decision as it would yield to more accurate determinants of remittances. Focusing only on the determinants of remittances thus omitting the importance of factors that affected the migration decision may bias the results in addition to leaving out important factors. Moreover, the study argues that linking both decisions can be argued to be more appropriate empirically for two main reasons: First, it makes it possible to control for potential endogeneity of the two decisions, considering the decision to remit as an important determinant of migration itself. According to Hagen-Zanker and Siegel (2007) most of the migrants in Albania migrate in order to remit. Second, it also allows modelling migration as a selection mechanism for remittances thus correcting for the selection-bias of the estimates.

Given the theoretical considerations (due to selectivity issue), it is usually assumed that only households with migrants have access to international remittances (Jimenez and Brown, 2008). More precisely, when modelling remittance receipt it is expected that only households with migrants should be included in the sample given it is them that are expected to receive remittances. This is not the case in this analysis for two main reasons:

First, 3SLS requires the number of observations in each regression to be the same hence, similar to poverty and fertility equations, all households have to be included in remittance receipt equation.

[89] The study adopts three other approaches: first, it treats migration and remitting decision as independent decisions and estimate two separate Probit equations; second, to take into account the possibility for endogeneity of the two decisions it estimates a Bivariate Probit. In the third approach, it models migration as a selection mechanism for remittances, and test whether the partial observability of remittance decisions leads to biased estimates of the effects of the explanatory variables.

Second, despite remittances received from family members, it has been suggested that receipt of remittances from relatives and friends is quite prevalent in low-income countries (Shaorshadze and Miyata, 2010; Adams, et al., 2008). Similar to the case for other countries such as Kosovo, Ghana and Tongo, households in Albania receive remittances from relatives and close friends. More precisely, a total of 1,184 households (18%) in the sample received remittances from relatives and friends in Albania during the last 12 months. Inclusion of remittances from non-members is further reinforced when 15.9 out of 18% receive remittances from friends and relatives and a very small share of such households (7%) have someone abroad (a migrant). Remittances from non-members can be assumed to be sent for pure altruism, generally directed to those in need therefore, can be important in terms of poverty**.** Leaving out their impact on poverty may underestimate the effect of remittances on poverty but also the role of poverty in motivating migrants to remit. This said, households that received remittances from household members but also friends and relatives are treated as recipient household. Finally, focusing only on the sample of households with migrants would reduce the number of observations considerably given out of 3,022 households only around 6.3 percent report to have international migrants whereas only 11.6 percent have both internal and international migrants. Although the survey collects information on internal migrants, only households with international migrants are asked to report remittances received from family members abroad. Therefore, there is no information on remittance receipt and the amount received by internal migrants.

Given the above noted arguments, in line with Shehaj (2012) the main approach in this analysis is to include in the sample all households, irrespective of whether they have someone abroad or not. Remittances are modelled as a discrete 0 or 1 indicator. Although the monthly amount of remittances could be used in another modification due to dominance of zeros in this case it may lead to unreliable results.[90] Another limitation relates to discrete nature of the dependent variable in remittance equation. In 3SLS different equations with different kinds of dependent variables cannot be included. The remittance receipt indicator takes only values of zero and one hence will be treated as Linear Probability Model (LPM) although it would be more appropriate to model it with Probit or Logit estimators. This said, remittance equation

[90] The households in Albania are asked if they received remittances from family members abroad at any point during the last year. If yes what has been the total amount received during the year. Hence, the household may have received remittances during the last year but not necessarily received remittances every month (a regular flow of remittances). In addition, even if they did receive remittances every month the amount may fluctuate from one month to another. As a result, the average amount of remittances per month calculated from total amount of remittances received during the previous year may not be a perfect indicator.

using OLS and Probit regression are estimated separately to see if the results are affected from modelling it this way. The estimation results suggest that the sign and significance level of independent variables remain the same, indicating that the results are not affected by modelling remittance decision as LPM (Table 6A.1).

Given it is not possible to control for selectivity within 3SLS, estimation of a Heckman two-step selectivity model is considered as a robustness check. More specifically, testing whether there is selection in migration and remittance receipt. The selection terms would then be included in remittance and poverty equations in 3SLS. The sample of households with migrants is very small to give sensible results. Nevertheless, a Heckman selectivity model is estimated to at least assess if there is selectivity into migration and amount of remittances received. In addition to sample of households with migrants being very small, a challenge in adopting this approach is that it is hard to say which variables would matter for one decision and not the other. Migration network proxy and previous migration experience of the household are used as exclusion restrictions given they are expected to affect migration decision but not remittances. The results suggest that inverse mills ratio is insignificant showing no evidence of selection bias (Table 6A.2). However, the model is not identified given both exclusion restrictions appear insignificant. As determinants of migration and remittances are largely the same we are unable to utilize other indicators.

5.5 Independent variables and their measurement

The selection of the explanatory variables is guided by the theoretical considerations outlined in earlier chapters and the empirical review presented in the following section, but it also reflects the Albanian context. A brief review of the most commonly used indicators as well as the findings related to their sign and significance level are provided. Parallel to this, the indicators to be included in respective equations and their expected effect are also discussed. Table 5.1 presents a description of the variables that will be used in each equation and their expected signs.

5.5.1 Determinants of poverty

Determinants of poverty and measurement of the variables are discussed in Section 4.4. The

indicators to be used in the poverty equation in 3SLS remain largely the same as those in the previous estimation with some exceptions which are elaborated in this section. In the previous analysis four different education indicators are used given some measures are argued to be more appropriate than others.

For the purpose of the analysis in this chapter, highest level of education by parents is used. It seems reasonable to assume that parents' education is what matters most to a household's state of poverty. Children for most families could still be pursuing education since the sample includes only mothers aged 18-45 years.

Given 3SLS allows endogenous variables to appear on the right-hand site of the equation, direct measures of fertility and remittances are included. The fertility indicator which is discussed in more detail in the next subsection, is the average number of children born to family in the household. The indicator is expected to have a negative effect on poverty/consumption. Households with higher number of children are more likely to be poor and have lower levels of consumption (Section 2.3.2.3). The remittance indicator takes value of one if the household received remittances from members abroad and friends and relatives during the last 12 months. Remittance receipt is expected to positively affect household consumption.

Given this analysis is concerned only with Albania, different from estimations in previous chapter, it is possible to include additional indicators that LSMS 2012 provides information for. An asset index is included instead of land area given it is considered as a more appropriate indicator of household wealth. Households with more assets are less likely to be poor and have higher levels of consumption. Moreover, it is likely to help households to smooth consumption in presence of shocks. To control for its effect studies included indicators of land ownership or its size, the ownership of a car (Bruck et al., 2007); livestock holdings (Geda et al., 2005; Andersson, 2006). An asset index is constructed using PCA following Shehaj (2012). To avoid potential endogeneity between poverty and the asset indicator, assets purchased during the last 12 months are excluded as they are likely to be related by current level of consumption.

The asset index is constructed using Principal Component Analysis (PCA) in Stata[91] using several assets on which the questionnaire contains information. The survey provides information on ownership of durable and semi durable assets, housing characteristics, and water supply system. Initially dummy variables are generated indicating whether the household owned the following: colour TV, black and white TV, DVD player, tape/CD player, camera/video camera, refrigerator, freezer, washing machine, dishwasher, electric or gas stove, kerostene stove, wood stove, microwave, radiator electric, generator, sewing/knitting machine, conditioner, water boiler, computer, satellite dish/cable receiver, bicycle, motorcycle/scooter, car, truck, dumdum tractor. In addition, categorical variables indicating the type of dwelling, the main source of water in the household as well as per capita number of rooms are included. In this process, only the first component is used to represent the household asset index. Following this, eigenequations weights are assigned to the indicator variables. Given the aim of PCA is to explain a maximum amount of variance of the variables, assets that are possessed by a high number of households are given lower weights and vice versa. Due to potential non-linearities in the effect of wealth on consumption the squared term of the asset index is also included. Households with different wealth levels may have different consumption behaviour in presence of shocks. Less wealthy households are more likely to reduce consumption when facing shocks than wealthier ones.

In addition, a social capital index is constructed following the same approach as with asset index using PCA. The categorical variables used for construction of the social index are derived from the information collected in Module 16 on Social Capital within Albanian LSMS 2012. The first part of the module gathers information on social participation such as the groups and networks where the members of the household belong, number of close friends, and whether the latter are expected to provide support in difficulties. The second, third and fourth part collects information on trust and solidarity, collective action and cooperation and empowerment and political action, respectively. Similar to asset index only discrete indicators are included or ordered responses that where turned into binary indicators.[92]

[91] PCA was first introduced by Filmer and Pritchett (2001).

[92] It should be noted that in few questions households had the possibility to answer Yes, No or No answer. When dummy indicators are generated also those that did not answer are considered as 0s. Also, some questions (following a yes or no question) where asked only to those that answered Yes. Therefore for households that answered No such questions where irrelevant. However, when 0-1 dummy indicators are generated for such questions, the indicator is zero also for those households for whom questions where irrelevant. If such households would be excluded it would not be able to utilize a social capital index given a very high number of

Also different from the previous approach, an indicator of health is included. Presence of a member or members suffering a chronic disease may not necessarily influence per capita consumption levels should the individual receive payment for disability or retirement from social services. Given presence of social benefit schemes are almost inexistent or insufficient in most developing countries and this is also the case with Albania, presence of chronically ill members is expected to negatively affect household consumption.

Regarding household characteristics, different from the approach in previous analysis the age of the head instead of the median age of adults is included given it is the most commonly used age indicator in remittance equation. In addition, it is possible to utilize the dependency ratio indicator as the empirical technique controls for expected endogeneity between fertility and consumption. Dependency ratio is defined as the share of children and elderly in total household members.

5.5.2 Determinants of migration and remittances

Education

Education of migrants is considered an important determinant of decision to migrate and remit as it is expected to proxy for differences in earning potential between home and host country as well as the amount of remittances sent. According to human capital theory, increased levels of education are likely to increase the likelihood of migration because more educated individuals enjoy greater employment and expected income-earning possibilities in destination areas. Given the households that received remittances from relatives and friends are treated as remittance recipients thus all households are included in the sample, a direct measure of migrants' education cannot be included. Moreover, migrants are assumed to be self-selected, and their decision to migrate may be driven by the same unobserved variables as their human capital, such as ability and motivation. As a result, endogeneity bias may occur hence using the education of the migrant is not appropriate. An important data limitation of many household level studies is that in general no information is available for the migrant(s) since information is collected about the household and present members.

households would be lost. The other alternative would be to leave out questions that were not asked to every household and construct another social capital index. Both indexes will be included in the regression separately to see if the results are affected.

Studies overcome this shortcoming, by using highest level of education or years of schooling of the head of the household or other adult members as a proxy for migrants' education. Moreover, it may help in addressing the endogeneity problem[93] (Germenji et al., 2001; Adams et al., 2008; Zhu and Luo, 2008; Acosta et al., 2007; Shehaj, 2012).

Education of the parents seems an appropriate measure also for remittance equation. On the one hand, theoretically more educated parents may prefer having more educated children (quality rather than quantity of children). Thus, if the returns to education in the origin compared to host countries are relatively low, migration propensities may increase (Shehaj, 2012). However, the effect of parents' education on remittance receipt is expected to differ with motives to remit. More educated parents are more likely to be employed and earn more hence, if the altruism or tempered altruism motive prevails they are less likely to receive remittances whereas the opposite if remittances are sent for inheritance.

Empirical findings indicate that education has a statistically significant impact on migration, but there is no conclusive evidence on the direction of the impact. Some studies have found that education increases the likelihood to migrate (Garip, 2006; Palloni et al., 2007; Zhu and Luo, 2008; Germenji et al., 2001). Findings in Mora and Taylor (2006) and Boucher et al. (2005) on the other hand suggest that education decreases the likelihood of migration. With regards to remittances, Hagen-Zanker and Siegel (2008) do not find a significant effect of migrant's education on remittances whereas Niimi et al. (2008); Holst and Schrooten (2006); Emanuel et al. (2012) find a positive effect. Findings in Shehaj (2012) for Albania suggest that education is negatively related to migration and remittances and other studies for Albania find similar results (De Coulon and Piracha, 2005; Germenji and Swinnen, 2005; Piracha and Vadean, 2010). Carletto et al. (2004) on the other hand finds that education is not a statistically significant determinant of migration in Albania.

[93] In addition, studies have generally used education of the head as a proxy for migrants' education also given data limitation as the information is collected about the household and present members generally no information is available for the migrant(s).

Household welfare

Discussions in Section 2.3 suggest that current level of welfare level is considered an important determinant of migration and remittance decision and vice-versa. More precisely, the theory suggests that poverty and migration/remittances may be endogenously related. Studies in this literature have been concerned with the effect of welfare and asset ownership of the household. However, expected causality between remittances and poverty in general has been ignored. Some of the main indicators used are household asset index, household income, area or ownership of (farm)land, and home or durable assets' ownership (Garip, 2006; Zhu and Luo, 2008; Margolis et al., 2013; Germenji et al., 2001; Phuong et al., 2008; Shehaj, 2012). The evidence however is inconclusive. Some welfare indicators are found to have a significant and negative effect (Germenji et al., 2001; Garip, 2006; Zhu and Luo, 2008) some positive effect (Pleitez-Chavez, 2004; Hagen-Zanker and Siegel, 2008) whereas some no statistically significant effect on remittances (Hagen-Zanker and Siegel, 2008; Osaki, 2003; Germenji et al., 2001). Similarly, Shehaj (2012) finds an insignificant effect of welfare measures on remittance receipt whereas an increase in household income decreases probability of receiving remittances (Germenji et al., 2001; Duval and Wolf, 2009; Lianos and Cavounidis, 2008[94]) in Albania. Findings in Konica and Filler (2009) suggest that low-income households are more likely to migrate in Albania whereas Germenji and Swinnen (2008) find that migrants do not come from the poorest (rural) households.

Given 3SLS allows including endogenous variables on the right hand-side of the equation an indicator of per adult equivalent monthly consumption of household is included in the model. Poorer households have more incentives to migrate although poorest may not be able to afford it. Rich households on the other hand may be able to afford migration but may not have incentives to migrate as their advantage lies in staying (Lucas, 2005; Phoung et al., 2008). Households with lower welfare are more likely to have someone abroad especially considering the presence of migration networks especially in some regions in Albania. Moreover, they are also more likely to receive remittances should the altruistic motive prevail, given migrants feel responsible for their wellbeing. The same may also be expected for households with high levels of welfare however, in this case remittances are likely to be sent for inheritance and insurance motives (Shehaj, 2012). Therefore, a negative sign of the consumption indicator supports the altruistic motive to remit whereas a positive sign would

[94] Level of migrants' income.

be in support of the inheritance and/or insurance motives to remit.

Asset ownership of the household is theoretically considered to be related to self-interest and the bequest motives for sending remittances (Shehaj, 2012). More precisely, migrants with a bequest motive are considered to be more likely to send remittances and send higher amounts if they have wealthier parents. However, assets may be a result of past remittances hence partly endogenous to remittances (Osili, 2007; Shehaj, 2013). Moreover, Carling (2008) argues for endogeneity of asset indicators based on the argument that asset ownership and remittance behaviour may be a results of the same unobserved reasons (Shehaj, 2013). Regarding Kosovo, the results from UNDP (2012) suggest that household level of income has a negative effect on plans to migrate.

Shehaj (2012) tests for endogeneity of asset index using an index based on asset ownership of the household in 1990 given pre-1990 migration was not a phenomenon in Albania as the country was under the communist regime.[95] The module on dwelling, utilities and durable goods of Albanian LSMS 2012 includes questions regarding asset ownership of households in 1990 however, this information is not included in the dataset available online for unknown reasons. Moreover, consumption and wealth indicator may control more or less for the same effect. This said in the main model only consumption indicator is included.[96]

Research has suggested that improvement of household relative welfare is also an important determinant of migration (Stark and Taylor, 1991; Shehaj, 2012; Carletto et al., 2004; Garip, 2006) and remittances. The relative deprivation index is constructed as the difference of the household asset index from the median of the same index at the community level -primary sampling units (PSU). Households with a low negative relative deprivation index are more likely to migrate and receive remittances, as an attempt to improve their rating relative to other households (Garip, 2006; Shehaj, 2012), especially if the altruistic motive dominates. Similarly, households with high positive levels of relative deprivation are more likely to receive remittances however, in this case due to remittances being sent for insurance and inheritance motives (Shehaj, 2012). Relative deprivation index is expected to have inverse U-shape relationship with migration and remittance decision therefore, the squared term is

[95] Using data from LSMS 2008.
[96] Moreover, in another specification asset index indicators are also included and the results suggest that both asset index and consumption indicators appear statistically insignificant and the model is not identified (Table 6A.4 in Appendix 6).

included as well. The results in Shehaj (2012) confirm this effect for Albania whereas findings in Carletto et al. (2004) and Lianos and Cavounidis (2010) in general suggest an insignificant effect of relative deprivation indicator. This indicator is not expected to affect poverty and fertility therefore, it serves as an instrument for remittance equation.

Household demographic characteristics

Age of the head is also expected to be an important determinant of migration and remittances. Households with older heads are in general more likely to produce migrants but at the same time more likely to receive remittances. More precisely, households with older heads are more likely to have individuals on migration age span 15-30 years (Adams et al., 2008; Shehaj, 2012). From differences in earnings potential perspective, young individuals can be argued to be more mobile than the old, hence an increase in migration costs, other things being equal, is more likely to decrease migration more for older than for younger individuals. Moreover, a young member may be seen as a source of surplus labour or more useful as a potential remitter. As a result, he/she can be more likely to migrate –especially in presence of high unemployment rates in the country and higher employment opportunities and earning perspective in destination countries. The effect of age on remittances may be positive or negative depending on the motive to remit (Shehaj, 2012). Households with older heads are more likely to receive remittances if the altruistic motive preserves. This is expected to be the case for Albania especially when migrant's parents left behind in the home country have low or no pensions or other sources of income/financial support. An unimportant effect of the age indicator on the other hand may indicate support for the investment-remitting motive. The empirical results suggest that age of head does not have a statistically significant effect on the decision to remit (De la Briere et al., 2002: Agrawal and Horowitz, 2002; Pleitez-Chavez, 2004; Pfau and Giang, 2010). This result is more in line with the investment motive for sending remittances. Shehaj (2012) finds higher international migration and remittance propensities for heads over 65 years old in Albania, supporting altruism motive.

Experience is also considered as a key determinant of earnings in human capital models (Sjaastad, 1962; Mincer, 1974; Shehaj, 2012) however, in general information on duration of migration is not available. In such cases, the age of head is used as a proxy for it. Given the expected non-linearities on the effect of age, the quadratic term is also included. As it is explained below, migration wave dummies also may control for the effect of the experience

on decision to remit.

Household demographic characteristics are also expected to affect the probability of migration and the receipt of remittances. Some of the most commonly used indicators are the number of children of different age groups and the dependency ratio (Garip, 2006; del Rey Poveda, 2007; Acosta et al., 2007; Zhu and Luo, 2008; Rainer and Siedler, 2008). In the regression dependency ratio and average number of children born to a family in the household are included. In addition, share of adult male members is also included (Zhu and Luo, 2008; Garip, 2006; Shehaj, 2012). Households with higher fertility or the dependency ratio may also be positively related with remittances if the motive behind sending remittances is altruism (Hagen-Zanker and Siegel, 2007). Larger households and especially those with more children and elderly may be more likely to receive remittances given the migrant feels responsible for their welfare. Moreover, households with more members and high dependency ratio are expected to be more likely to have migrants and receive remittances because theoretically they are also likely to be poorer.

Household size is generally found to have a positive effect in estimations of the probability and size of remittances (Lucas and Stark, 1985; Osili, 2007)[97], whereas number of children under 15 years is found to have a negative effect and U-shaped effect (Shehaj, 2012). Dependency ratio is found to have a negative effect (Agrawal and Horowitz, 2002; Osaki, 2003) and insignificant effect for Albania (Shehaj, 2012). Others report insignificant effects of these variables (Craciun, 2006; Hagen-Zanker and Siegel, 2007). Results in Shehaj (2012) and Carletto et al. (2004) suggest that number of children exerts a negative effect on likelihood of migration and remittances in Albania.

Households with higher share of young members (especially male)[98] are also more likely to have someone abroad also due to possibilities of having higher surplus labour (Phuong et al., 2008; Shehaj, 2012).[99] Higher adult male ratio on the other hand, is expected to negatively influence remittance receipt given they are more likely to be engaged in income generation

[97] Shehaj (2012) finds an unexpected negative effect.
[98] King et al. (2006) argues that women are expected to have a lower migration propensity in the Albanian context, given they generally are in charge of taking care of children and household, whereas men are considered as the bread-earners (Vadean and Piracha, 2009).
[99] Moreover, it may also be argued that if there are more adult females (lower males) in the household then the propensities of the household to have someone abroad increases as it may be indicative that male migrant adult might have migrated.

activities. However, this may not necessarily be the case for low-income and developing countries such as Albania due to presence of high unemployment rates and poor income generation opportunities. Shehaj (2012) finds a positive relationship of gender ratio with migration and remittances in Albania whereas Kotorri (2010) finds a negative influence of the gender composition on the household migration behaviour in Kosovo.

Research has also included an indicator of female headship in explaining migration and remittance decisions. Female-headed households are more likely to receive remittances compared to those headed by males (Carling, 2008; Shehaj, 2012; Pfau, 2008). In many cases it could be that the husband has migrated but it may also reflect stronger ties of children with their mothers than with their fathers (Niimi et al., 2008). In addition it could be that female heads, generally widows, may receive remittances (also from relatives or friends in addition to children) as a kind of support for these women in absence of strong social safety networks (Pfau and Giang, 2010). Findings in Pfau (2008) suggest that female-headed households receive more remittances whereas Shehaj (2012) finds an insignificant effect for Albania. These indicators are included also in poverty regression whereas are not considered as important for fertility decision in the literature.

Labour market

Employment or unemployment status of adults present in household is also likely to affect migration and remittance decision. Studies generally include measures such as the share of household members working in wage employment (Phuong et al., 2008; Zhu and Luo, 2008; Shehaj, 2012) and the number of economic activities a household is involved in, the number of crops planted by the household (Garip, 2006). The first two studies however do not find employment to have a significant effect on remittance receipt. Similar to consumption equation, an indicator of the share of unemployed adult members is included. Households with higher share of unemployed individuals are more likely to have someone migrating. The sign of the indicator however is not clear apriori with respect to remittance receipt. A positive sign could be an indication of altruism motives whereas a negative for the self-interest one. Moreover, remittances are also argued to create dependence hence decrease labour market participation of adults and the findings in Pfau and Giang (2010) support these expectations. Carletto et al. (2004) finds that household unemployment ratio has a positive effect yet only on decision to migrate temporary in Albania. The results from UNDP (2012a) suggest that

proportion of adult unemployed members increases the probability of a household head planning to migrate in Kosovo.

Health/Shock indicator

Following Shehaj (2012) a dummy variable indicating the presence of at least one member that suffers from a chronic disease in the household is included, which is expected to have a negative impact on migration incidence since the ill person needs to be taken care off. On the other hand, in line with coinsurance motive behind migration, presence of chronically ill member may increase incentives for poorer households to migrate especially if the individual does not receive any financial support from social services. As a result, the household is also expected to receive remittances. Finding from De la Briere et al. (1997, 2002) also support expectations that shock indicators lower migration propensities and increase chances of remittance receipt. Shehaj (2012) on the other hand, finds an insignificant effect of shock indicator on likelihood of migration and remittances for Albania.

Ethnicity

Studies have also included an indicator of ethnicity generally to control for historically dominant patterns, social norms or different migration behaviour by different ethnic groups (Agrawal and Horowitz, 2002; Adams et al., 2008). In the model, an indicator of Albanian headed household to assess potential differences in migration and remitting behaviour between majority Albanian and other ethnic groups is included.[100]

Geographic indicators

Dummy variables for urban area and regional dummies are included to control for other geographical differences affecting the incentive to migrate and remit. It is expected that urban households are less likely to migrate and also send less remittances given they are in general better off then rural ones. To test this preposition a dummy variable indicating urban location is included in the model. Data suggest small differences in migration behaviour whereas no clear differences in remittance patterns and this may be largely a result of remittances from non-household members (Section 3.4.7). Empirical findings suggest that households in the urban areas have significantly lower remittance receipt propensities in comparison to the

[100] One could also expect to observe different propensities of receiving remittances amongst Albanian ethnic households and those of other ethnicities, as migration is more prevalent amongst the former ethnic group.

rural households (Hagen-Zanker and Siegel, 2007; Niimi et al., 2008; Pfau and Giang, 2010) and findings in Shehaj (2012) and Duval and Wolf (2009) suggest this also for Albania.

The regional location of recipient may also partly account for the unexplained variation in remittance patterns by household or individual factors given location indicators are considered to control also for other socio-economic factors at the community level. In line with findings of Carletto et al. (2004) it is excepted that households living in other regions are more likely to migrate internationally as compared to those in Tirana and in particular migrating permanently. Similarly, households in other regions are expected to have a higher probability of receiving remittances than those residing in Tirana and this is also suggested by the data (Section 3.4.7).

Social capital

The existence of migration networks and previous experience with migration are important determinants in the decision to migrate internationally, while community level networks are important only for temporary migration. According to migration network theory, migration networks encompass a kind of social capital that is likely to lower the costs, risks and the extent of uncertainty involved in the process of international migration hence, increase the possibility of international movement (Massey et al., 1993; Shehaj, 2012). Current migrants may help prosperous ones with information about available destinations, funds for travel as well as assistance in finding employment and securing housing. In this way, presence of migration networks is considered to enable even the migration of the poor. It may also control for higher probability of remittances given as noted above the data suggest that a relatively good share of households receive remittances from non-household members, especially those residing in Mountain region.

Following Shehaj (2012; 2013) the effect of two kinds of social capital is controlled namely, social capital in the home and in the host country. The indicator of migration network includes an interaction of the percentage of households that received remittances in respective region in 2005 with number of members aged 18-29 years old given according to ETF (2007) age groups planning to migrate are 18-24 and 25-29 years old.[101] Acosta (2007)

[101] Other indicators such as household's history of migration (Palloni et al., 2007; Richter and Taylor. 2008) and the percentage of community's households receiving remittances, and the frequency of visits paid by the

and Acosta et al. (2007) also include interaction between migrant networks with household assets or the number of adult males if the former is missing. Their findings suggest that migration network has a positive effect on probability of receiving remittances and findings in Carletto et al. (2004) and Germenji and Swinnen (2005) suggest the same for Albania. However, findings in Shehaj (2012) indicate no statistically significant effect for Albania.

In addition, a social capital index is included in remittance equation as well. Social capital is also expected to have a positive relationship with migration and remittances. Non-linear effects may be expected (Shehaj, 2012), thus this is controlled in the model by including the quadratic term.

Given Albanians migrated during different periods, the remitting behaviour may also differ. One argument is that migration wave indicators would capture earning potential of migrants as those that migrated in earlier waves are more likely to send more given they have higher experience (hence earn more), at least in the destination labour market. The indicators may also reflect the remitting behaviour of migrants. Remittances also are expected to reflect the family ties of the migrant in their country of origin and/or the degree of assimilation in the destination country (Garip, 2006). According to Hagen-Zanker and Siegel (2008) the ties are expected to be weaker the longer the migrant has been abroad, especially if frequency of visits in the home country is, thus the lower the importance of altruism is expected to be. Hence, to control for this effect indicators of migration period/waves are included. This said, three dummy variables are constructed based on three main migration waves (Barjaba, 2000; King and Vullnetari, 2003). The first migration wave happened after end of the communist regime after 1990 - during which regime migration was not a phenomenon amongst Albanians. The second important migration peak is considered to have occurred in 1997 with the collapse of a pyramid savings scheme whereas the third wave is considered to be that of 1998-2012 period. Thus, negative effect of migration wave dummies may reflect weakened family ties whereas positive sign would indicate higher earning potential and strong family ties. In addition to relative deprivation index, migration period dummies and migration network indicator are expected to affect decision to migrate however, are not correlated with the unobserved components of consumption and fertility equation. Hence, serve as instruments for remittance equation.

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migrants in the last 10 years, which is also expected to affect remittances (Garip, 2006) are used in literature to control for migration network.

5.5.3 Determinants of fertility

Although fertility determinants have not attracted much attention in the Western Balkan countries and SEE countries in general, several studies have investigated the factors that affect fertility in developing or low income countries (Bhaumik and Nugent; 2005; Kamaruddin and Khalili, 2015; Rasul, 2008; Odusola, 2002; Miranda, 2010; Imai and Sato, 2014; Jha, 2013; Moeeni et al., 2014; Ueda, 2007; Al Qudsi, 1998).

Education

Theory suggests that education is an important determinant of fertility and is expected to reflect employment and income opportunities. Similar to remittance equation, education indicator allows us to also explore the indirect effect via which education affects poverty. According to theoretical suggestions discussed in Section 2.3.2.3, education of mother is one of the most important determinants of fertility. More educated mothers are expected to have less children, as they are more likely to value more quality (investing in them) rather than quantity of children.

Given different country specifics as well as data availability studies include different measures of mother's education. Some of the most common indicators included are highest level of education attained (Ueda, 2007; Odusola, 2002; Bhaumik and Nugent, 2005; Kamaruddin and Khalili, 2015; Imai and Sato, 2014); completed years of schooling at age 12 (Miranda, 2010) or years of schooling of mother (Tadesse and Asefa, 2002); illiteracy (Imai and Sato, 2014) some or completed primary education (Rasul, 2008); number of years of schooling of females in the household (Moeeni et al., 2014) [102]. The findings of these studies confirm the theoretical expectations that the impact of increased level of education attainment of mother has a significant and decreasing effect on fertility. More precisely, the results suggest that substitution effect dominates the income effect. Bhaumik and Nugent (2005) on the other hand find a positive effect[103] suggesting that in post-reunification period 1992-2002 in Germany the income effect dominated the substitution effect result from higher opportunity cost of time. Similarly, Rasul (2008) finds that having some or completed

[102] The study also uses per capita household educational expenditure in real price based on CPI of the provinces in 2010 which express parent's preference for the educated children as an indicator for the quality of children.
[103] Of higher education level relative to primary education attainment.

primary education reduces number of children for Chinese households. Although it is not possible to control for it, it is of note that mother's education might be endogenously related to fertility decisions. More precisely, the effect of education on fertility may depend on unobserved characteristics (ability and preferences) that may determine simultaneously fertility choices and investment in human capital (De Paoli, 2009).[104] Evidence for Albania also highlights the importance of female education in reducing fertility in Albania (Aassve et al., 2006; Lerch, 2013).

Education of the father may be also an important factor in fertility decisions although its link to fertility may be weaker compared to mother's education. However, its importance in terms of fertility has been relatively neglected in the literature. More educated fathers are expected to be more open-minded and cooperate with mother in family planning and contraceptive use (Bhat, 2002; Imai and Sato, 2014). The empirical findings suggest that father's education has a negative significant effect on fertility (Imai and Sato, 2014; Tadesse and Asefa, 2002) whereas Bhaumik and Nugent (2005) find a positive effect similar to that of mother's education. Based on this evidence it is expected that households with highly educated fathers are expected to have a lower number of children.

As noted earlier, the difference between most frequent mode of education and the maximum level of education attained by mothers as well as fathers in the household is negligible. Hence, to be consistent with the approach regarding other variables of this nature, indicators of maximum level of education attained by mothers and fathers in the household is included. Due to restriction imposed in the sample the same dummy indicators of mother's education as in the previous chapter cannot be constructed as the share of illiterate mothers or those with less than primary education attainment is very small. Therefore, three dummy variables indicating less than primary or primary, secondary and tertiary education attainment of mothers and father respectively are created.

Occupation

Following theoretical suggestions, an indicator of employment of mothers in the household is also included. The estimated coefficient for employment is expected to reflect the opportunity

[104] Women with a greater preference for participating in the labour market simultaneously may invest more in education and vice versa. Hence, given theoretical suggestions they may prefer a lower number of children. In addition, childbearing may prevent mothers from continuing their education.

cost for a woman. As the opportunity cost of raising children increases, couples are likely to prefer less children. More precisely, households with employed mothers are more likely to have a lower number of children, given the trade-off they face in the labour market. As the education level increases, the mother is expected to earn more. Due to increased income women may prefer to work less as due to the higher wage, the same income-level can be reached with fewer working-hours, hence giving them the opportunity to raise more children. Nevertheless, it is in general expected that the substitution effect to dominate the income effect. This said, a negative significant effect would support the neoclassical theory of demand for children (Becker, 1981; Becker and Lewis, 1973).

To control for the effect of employment of mother in fertility decisions studies used indicators of occupation/employment status of mother (and father) (Odusola, 2002; Kamaruddin and Khalili, 2015; Rasul, 2008; Moeeni et al., 2014), women's wage (Al Qudsi, 1998) as well as probability of unemployment of mother (Bhaumik and Nugent, 2005). Rasul (2008) also included an indicator of mother's non-earned income to capture the opportunity cost of having children[105]. Imai and Sato (2014) included indicators of non-agricultural or agricultural self-employment given it is not expected to be affected by unemployment and as children may be more valuable inputs in self-employed households than other households. The findings from Qudsi (1998) and Imai and Sato (2014) suggest that employment of mother is negatively and significantly related to fertility although in the former study only at 10% significance level. Other studies however, find an insignificant effect (Bhaumik and Nugent, 2005; Kamaruddin and Khalili, 2015; Tadesse and Asefa, 2002; Moeeni et al., 2014).

In the model a household level indicator of employment of mothers is included more precisely, the indicator takes value of 1 if majority of mothers in the household are employed and zero if otherwise. Although mother's employment status is not discussed in literature as potential determinant of poverty and remittances, it is not clear whether it can be treated as exogenous especially to poverty. Thus consumption equation is estimated with and without this indicator to see if it appears to be important or not. The estimation results without mother's employment indicator remain largely the same however, the overidentification test is rejected at 5% level (Table 6A.3). This said, the results are estimated including this indicator in consumption equation as well. In addition, inclusion of a regional indicator of

[105] The indicator is significant only for Chinese households yet only at 10% significance level. Employment of husband on the other hand has a positive significant effect on Malay households.

forgone income is also considered namely, the average wage in the region for women with up to primary, secondary and tertiary indicator. However, there are no data on average earnings of women according to their education level neither at regional or national level.

Age of mother

In general, the effect of the age of the mother in the number of children is expected to follow an inverted U-shape. A woman is likely to get more children as her life evolves, therefore, she is expected to have more children after some years of marriage than in early years of marriage. However, another way age affects fertility is through generational differences. Younger generations may view fertility choices different than older ones. The demographic figures suggest that the fertility-rates in Albania have declined dramatically over the last years according to (INSTAT, 2015). A potential explanation for decline in fertility is that younger generations do not tend to marry young and on average are more educated than the older generations hence, their fertility level may also be lower. This means that, on average, older respondents may have more children than younger respondents for any period of life.

Age also may reflect autonomy of the women. Younger mothers (early marriage) are expected to have higher fertility (Al Qudsi, 1998) however, female autonomy is likely to decrease the relative importance of early marriage (Mason, 1987). Studies have also included other indicators such as dummies of certain age periods when mother is born (Miranda, 2010) or age groups (Al Qudsi, 1998; Tadesse and Asefa, 2002; Jha, 2013[106]). Empirical results suggest that the age of the mother has a positive sign (Al-Qudsi, 1998; Jha, 2013; Rasul, 2008) although it does not always affect fertility decisions (Tadesse and Asefa, 2002). Findings in Imai and Sato (2014) confirm non-linear inverted U shaped effect of mother's education on fertility. Evidence in Aasve et al., (2006) for Albania suggests that hazard ratios for 1st, 2nd and 3rd child are higher for mothers in older cohorts.

In line with Bhaumik and Nugent (2005) and Imai and Sato (2014) an indicator of age of mothers is included as well as its quadratic term to control for potential non-linearities. However, a household level indicator is constructed for the same reasons as for education or fertility indicator. Given there are no substantial differences in mean and median age of mothers thus there seems to be no outliers, mean age of mothers in the household is included.

[106] Number of females in different childbearing age groups.

Marriage duration and age at first birth

Marriage duration or age at first birth are also considered to be important determinants of fertility. Al Qudsi, (1998) includes an indicator of marriage duration in years whereas Moeeni, et al., (2014) includes age of the oldest child in the household plus one as a proxy for marriage duration. In addition, studies also include indicators of age at first birth (Al Qudsi, 1998; Kamaruddin and Khalili, 2015) or age at marriage (Rasul, 2008). Studies find both positive (Kamaruddin and Khalili, 2015) and negative significant effect (Tadesse and Asefa, 2002; Rasul, 2008; Al Qudsi, 1998). Aasve et al., (2006) find a positive effect of the age on the first and second birth respectively, on the next childbirth in Albania. Findings in Lerch (2013) support the theoretical predictions that marriage at a young age leads to larger families in Albania.

Information on marriage duration or age at marriage is not provided in LSMS 2012. Studies construct age at first birth indicator by subtracting the age of the first child from mother's age. Given there are households with no children it is not possible to utilize this indicator. However, considering provided discussion above, mother's age indicator is expected to partly control for this.

Household welfare/poverty

As argued in previous sections poverty is expected to be endogenously related to fertility. Thus despite fertility being an important determinant of poverty, the latter is also considered to be an important determinant of fertility. Studies include indicators of household's welfare such as total income (Ueda, 2007; Al Qudsi, 1998), log monthly per capita consumption (Jha, 2013) or annual consumption (Tadesse and Asefa, 2002) as well as a categorization of households into groups of income deciles (Moeeni et al., 2014). Given the theoretical suggestions, fertility is expected to be negatively related to household's welfare. According to Becker (1960), an increase in income is expected to lead to a decrease in the demand for number of children whereas an increase in the amount spent on children. That is, the richer the family is, the fewer children they are expected to have. The welfare indicator in the model is natural logarithm of per adult equivalent monthly consumption of the household, which is the dependent variable on the poverty equation.

In addition to household consumption, an indicator of asset ownership of the household is also included given the impact of an increase in household income on fertility may dependent on the source of income (Schultz, 2005). If a rise in total family income is a result of an increase in the returns to physical assets-financial or business assets or land then it is expected that the increase will be associated with higher fertility keeping other factors equal; given these sources of income add to family resources whereas are not expected to affect the relative opportunity cost of children to parents (Schultz, 1981, 1994; Schultz, 2005). Studies include a variety of indicators such as size of residence (Bhaumik and Nugent, 2005) securing a home (Kamaruddin and Khalili, 2015) ownership of land (Imai and Sato, 2014) or an indicator whether the household has its own supply of running water and electricity (Rasul, 2008). As expected, the empirical findings in general suggest a positive relation between asset ownership and fertility decisions (Al Qudsi, 1998[107]; Tadesse and Asefa, 2002; Kamaruddin and Khalili, 2015; Imai and Sato, 2014[108]). To control for the impact of asset ownership, in line with the approach in other equations an asset index is included.

Contraceptive use

Given the theoretical considerations on the importance of birth control on fertility, a measure of contraceptive use in the respective region is included given data on household level are not available. Data availability can be also an important constraint why its use in the literature has been neglected.[109] More precisely, the indicator is defined as the percentage of couples that used any type of contraceptive in the region where the household resides. Improving birth-control techniques is expected to reduce pecuniary and psychic costs of effective control. As a result, fertility is expected to decline and similarly the uncertainty regarding the timing of births, henceforth help women to better plan their families and careers (Gertler and Molyneaux, 1994; Schultz, 2005). This indicator is expected to affect only household fertility decision therefore serves as instrument for fertility endogenous variable.

[107] Except for indicators of heating with charcoal and kerosene that have a negative effect.
[108] The results of this study regarding asset ownership differ in respect to year analysis is concerned more precisely the effect of land owned was negative in 1992/1993 and 1998/1999 whereas positive in 2005. Also the indicator is insignificant in Fixed Effect model in comparison to cross section model results.
[109] Moeeni et al. (2014) includes the percentage of unmet needs for contraception at the province level.

Preference for sons

Some studies in the literature on fertility determinants have also been concerned with the effect of son preference on fertility decisions (Imai and Sato, 2014; Al Qudsi, 1998; Moeeni et al., 2014). Households with high share of female children are more likely to be after a male child. This behaviour is known as 'stopping rule' as couple may have as many children as it takes until they have a son (Al Qudsi, 1998). Boys may be preferred given their net economic productivity could be higher than that of girls (Al Qudsi, 1998) and they could be a better old age insurance for parents (Schultz, 1997). Also boys may be preferred due to cultural reasons such as continuation of family name and inheritance. According to UNFPA (2012) report, the demographic analyses confirm son preference as a distinctive feature of the households in Albania. Findings in Lerch (2013) support the expectations on son preference in Albania. Namely, the number of boys born exerts a statistically significant and positive effect on fertility. To control for this effect, the share of female children in total number of children to a family is included. More precisely, the average number of children is expected to be higher the higher the share of females per family. [110]

[110] Share of female children is included in the consumption equation in addition to the adult male ratio. Although at first they seem to measure the same thing, this is not the case given the restriction on the age of mother imposed in our sample. Share of female children is basically a gender ratio of children born to a family. Different from adult male ratio which includes only adults, the share of female children indicator includes children most of which are not likely to be adults or may still be attending school/university. Therefore, adult male ratio is expected to reflect the labour inputs of the household whereas the share of female children indicator may reflect the lower calories women need to achieve the same levels of welfare of men.

Urban/rural location

Fertility rates are expected to differ in urban and rural areas. INSTAT (2015) and INSTAT et al. (2010) suggest that fertility rates in rural areas over the last years are considerably higher than in urban ones. Moreover, the views on family and fertility may be more traditional in the rural areas. Given the theoretical suggestions, it is reasonable to assume that the overall benefits of parents having a high number of children are particularly lower in urban than in rural areas (Shapiro and Tambashe, 2000).[111] Families in rural areas may have different returns from investment in their children than urban ones. Moreover, availability of opportunities such as those related to schooling and jobs may also differ in urban than in rural areas thus investment in schooling for instance may be more in the former than the latter. In addition, the quality-quantity trade off could be more pronounced in urban areas due to greater opportunities for schooling in urban areas and higher trade-off in the labour market especially for mothers. Thus, it is expected that households residing in urban areas have lower number of children compared to their rural counterparts. The findings from studies support theoretical expectations (Al Qudsi, 1998; Imai and Sato, 2014; Kamaruddin and Khalili, 2015; Jha, 2013) whereas for Moeeni et al. (2014) find no statistically significant difference in fertility behaviour between rural and urban households. Findings in Lerch (2013) suggest that fertility is higher in urban when compared to rural areas which according to the study could be due to better amenities and social services for family maintenance in urban areas. Findings in Aasve et al. (2006) however, suggest that rural households have higher fertility rates compared to urban ones in Albania.

Social Capital

The concept of social capital and its wide range of indicators have drawn little attention from fertility studies yet theory suggests that social capital could be important in terms of fertility decisions as well (Section 2.3.2.3). An increase in social capital is expected to positively influence number of children especially if informal childcare is provided or potential monetary and non-monetary support from friends and relatives (Di Giulio et al., 2012). More precisely, involvement of household's in structures of social exchange such as supportive personal relationships may ease their constraints related to time and money. Therefore,

[111] For instance, families with farms are more likely to face lower costs in raising children because children may contribute to the farm from a relative young age. In general, food is cheaper for farmers. This effect however is expected to diminish with modernization of the farming industry. Moreover, the cost of sending children to school may be higher for rural households, as the population is less dense, and the travel-cost increases with distance to school.

households may be able to produce more commodities or commodities of higher quality –in this case have more children- without having to increase time spent at work or investing more money (Di Giulio et al., 2012). Couples who possess more social capital may feel more secure as higher perceived social capital might help reducing uncertainty and costs of childbearing, and therefore are more likely to realize fully their fertility intentions (Balbo and Mills, 2011; Philipov et al., 2006). However, it may help couples learn about new evaluations of fertility and the use of modern contraceptives (Bühler and Philipov, 2005) which may negatively affect fertility. Another strand in the literature suggests that parents may consider children as means to acquire social capital. Children may create social capital by establishing new relations among persons or extending them as well as by providing security in old age for their parents (Balbo and Mills, 2011; Philipov et al., 2006).

Studies have used a number of indicators of social capital. Di Giulio et al. (2012) include indicators more specifically related to fertility as well as presence of social capital in general. Bühler and Philipov (2005) and Bühler and Fratzcak (2004) include the amount of experienced and potential transfers of resources[112] such as small help, important support and borrowing money. Balbo and Mills (2011) include a family social capital, parental disruption indicator and information about relations with siblings. In line with remittance and poverty equation an indicator of social capital in general is included more precisely, a household social capital index.[113] This said, an increase in social capital is expected to have a positive effect on household fertility. A negative effect on the other hand would reflect the effect of social capital on fertility via increasing knowledge on fertility issues as we all modern contraceptive use.

Empirical findings suggest that social capital is an important determinant of fertility decisions. More precisely, it is found that social capital measured by exchange relationships that transfer all-purpose resources is positively related to fertility intensions (Philipov et al., 2006; Bühler and Fratzcak, 2005; Philipov and Shkolnikov, 2001). Furthermore, there is evidence that social networks influence reproductive desires and planning by processes of social learning and interpersonal influence (Balbo and Mills, 2011). Bühler and Philipov

[112] The size of three different networks that provide them with three different kinds of resources during the last two years: **'**small help**'**, **'**substantial and important support**'**, and **'**borrowed money'. If the respondents reported that no network partners of a particular network provided them with the particular resource, they were asked to name the number of network partners from whom they would receive this resource if needed.

[113] Also indicators such as if they received informal help with their first or previous child is not provided in LSMS.

(2005) find support for the relevance of multipurpose social capital on fertility intentions however, only for particular resources.[114] Di Giulio et al. (2012) investigate the impact of supportive resources, like money, active help or childcare, provided by network partners. The study finds support for the positive role of social capital for the intention to have a second child however only for Bulgaria and not Germany whereas findings for Italy contradict theoretical propositions.

Religion

Studies also include indicators of religion to control for potential differences in fertility behaviour amongst different religious groups (Al Qudsi, 1998; Aasve et al., 2006; Miranda, 2010; Kamaruddin and Khalili, 2015; Imai and Sato, 2014; Jha, 2013; Moeeni et al., 2014) and find statistically significant differences. According to Westoff and Frejka (2007), there are no major differences in fertility rates between two biggest religious groups in Albania. More precisely, fertility of the Muslim majority is similar to the Catholics who compromise 11 percent of the country's population (Ibid). Empirical findings in Aasve et al. (2006) suggest that religion is in general not important as the effects of religion on first and second births appear statistically insignificant and differences among different religious groups are significant only for the third birth. This could be mainly due to abolishment or prohibition of religion for almost 30 years during communism (1963 – 1991 period). However, to explore if there are any statistically significant differences in fertility behaviour of religious groups a dummy indicator which equals 1 if a Muslim majority household and 0 if other religious groups is included. There are no expected differences in consumption and remittance receipt behaviour between Muslims and other religious groups hence this indicator also serves as instrument for fertility endogenous variable.

[114] Having access to network partners that provide **'**important and substantive support**'** positively influences the quantum and the timing of fertility intentions. However, an increasing number of network partners that provide **'**small help**'** in daily activities shows, with the exception of the intention to have a third child, a negative or no effect; whereas having access to borrowed money is not significant.

Table 5. 1. List of variables to be included in the system of equations and their expected sign

Variable	Description	Consumption	Fertility	Remittances
Log Consumption	Log of per adult equivalent monthly consumption (in lek)		-	Negative or positive
Average no. of children born to a family	(Number of children born by mothers aged 18-45/number of families)	-		+
Remittance recipient	1 if household received remittances from family members or friends and relatives; 0 otherwise	+	+	
Age of head in quadratic form	Age of the head of the household	U-shaped		U-shaped
Mother's education	Maximum education of mothers in the household => education dummies: no education or less than primary; primary; secondary and tertiary (base group)	-	+	+
Father's / head's education	Maximum level of education of fathers. Dummy indicators same as those for mothers education	-	+	+
Asset Index	All assets that households listed plus per capita number of rooms, type of dwelling and source or water	Inverted U-shaped	+	
Ethnicity	Albanian or other (Roma/Egyptian, Greek etc)	+	-	+
Health/shock indicator	1 if at least one member has a chronic disease in the household; 0 otherwise	-	-	+
Share of unemployed individuals	(Number of unemployed adults in the hh/no. of adults)*100[115]	-		+

[115] Derived from questions 4A.9 Looking for a job and 4A.10 believes cannot find work in Module 4.

Table 5.1. List of variables to be included in the system of equations and their expected sign (Cont.)				
Social capital in quadratic form	Discrete variables or those which could be turned into 1/0 (from 1-5) from Module 16 are used to construct the index	+	+	Inverted U-shaped
Region	Central, Coastal, Mountain and Tirana (base group)	-		+
Urban	1 if household resides in urban areas; 0 if in rural ones	+	-	-
Informal proxy	1 if none of the employed members is entitled to the benefits of social security; 0 otherwise	Positive or negative		
Relative Deprivation	Asset Index/The median of primary sampling units (PSU)			Inverted U-shaped
Migration network	Percentage of household that received remittances in the region in 2005*no. of adults aged 18-29			+
Migration period	Dummies if migrant migrated in: a) 1990-1996; b) 1997 and c) 1998-2012 (base group)			Positive or negative
Mothers age in quadratic form (median)	Mean years of mothers in the household and its squared term	Inverted U-shaped	Inverted U-shaped	
Employment of mothers	Most frequent mode of mother's employment status. 1 if most of the mothers in the household are employed; 0 if otherwise	+	-	
Share of female children (Sons preference)	((Average number of female children present and female migrants to a family)/Average number of children born to a family))*100	+	+	
Contraceptive use in the region	Use of any kind of contraceptive methods in the respective region (in 2008/2009)		-	
Religion	1 if Muslim majority household; 0 if otherwise		+	

5.6 Conclusions

This chapter develops an empirical model for estimation of the simultaneous determination of poverty, fertility and remittances in Albania that is carried out in Chapter 6. Given the theoretically expected causality, estimating each of the relationships separately is not appropriate. As a result, the three decisions should be modelled within a simultaneous equations system using 3SLS where they are treated as endogenous. 3SLS technique allows inclusion of endogenous variables on the right-hand side of the equations, direct indicators of fertility and remittances are used instead of their proxies.

In addition to illustrating the causality between poverty, remittances and fertility, this chapter also provides a literature review on the empirical determinants of migration and remittances and fertility to complement the review of empirical determinants of poverty provided in Chapter 2. This review and theoretical review in Chapter 2 as well as the context of the country provide the basis for the selection of the dependent, explanatory and identification variables for the empirical model.

However, in order to model fertility properly, the sample also has to be restricted to mothers at fecundity period namely, 18 to 45 years and also only families with married couples or those living together are included. Given 3SLS requires the same units of observation in each model, the same number of observations as in fertility equation is used in the other two equations as well. Despite measuring fertility more accurately, it also helps in focusing on the appropriate cohorts/generations hence, the results are pure and not mixed with the effects that may come from older generations. In this way we focus on individuals who are at the peak in terms of employment or labour market earnings. Another issue related to fertility indicator is that it is a count variable whereas in 3SLS responses are continuous and unbound and only generalized linear models with a Gaussian error distribution can be modelled. As a result, fertility equation cannot be estimated using appropriate techniques that deal with count data. Given alternative approaches are not available and the data suggest that the distribution of the fertility indicator is slightly skewed but still close to normal distribution; acknowledging its limitations it seems most appropriate to proceed with 3SLS considering the scope of the chapter and advantages of using it.

Regarding remittance receipt, given the theoretical considerations it is usually assumed that only households with migrants have access to international remittances given they are expected to receive them. However, in this analysis this is not the case due to two main reasons. First, given the sample should be the same in each equation in 3SLS. Second, receipt of remittances from relatives and friends is quite prevalent in low-income countries and this is the case with Albania as well. Moreover, the share of households that receive this type of remittances is higher than that of households who received from family members. Leaving out their impact on poverty may underestimate the effect of remittances on poverty but also the role of poverty in motivating migrants to remit. Moreover, focusing only on the sample of households with migrants would reduce the number of observations considerably. This said, households that received remittances from family members but also friends and relatives are treated as potential remittance recipients.

In addition, in order for the system to be identified, each equation should include a variable that appears in that particular equation but not in the rest of equations in the system. For the consumption equation, informal employment indicator serves as instrument whereas contraceptive use in the region and relegion in fertility equation. The migration network proxy and the migration wave dummy indicators serve as instruments in the remittance equations.

CHAPTER 6

SIMULTANEOUS DETERMINATION OF POVERTY, REMITTANCES AND POVERTY

Table of Contents

6.1 Introduction

This chapter aims to explore the fifth research question by empirically investigating the simultaneous determination of poverty, remittances and poverty in Albania. Chapter 5 has developed a model to simultaneous relations between poverty, remittances and fertility. It illustrated the simultaneous determinations between the three relationships and the mechanism via which education affects poverty. The methodological approach presented in Section 5.3 forms the basis for the empirical estimation.

Given variables are jointly determined, estimating each equation separately would produce inconsistent and biased estimates. Therefore an estimation technique that allows estimating simultaneous equation system with endogeneity is used. More precisely, Three Stage Least Square Technique (3SLS) is utilized given it allows inclusion of endogenous indicators as explanatory variables in equations. The system of equations contains a set of three simultaneous equations namely, the determinants of fertility, remittances and poverty.

Equations are also separately estimated using OLS and the results are compared with those of 3SLS in order to determine the potential simultaneity bias and assess whether SEM with 3SLS as an estimation method is justified. 3SLS estimation is considered to be asymptotically more efficient however, may be more vulnerable to specification errors when compared to 2SLS. Hence, in addition to comparing 3SLS with separate OLS regression, 3SLS and 2SLS estimates are also compared to determine presence of the simultaneity bias as well as to check if there is a gain in using 3SLS.

Section 6.2 presents descriptive statistics of the variables used in estimations as well as results of preliminary diagnostic tests. The estimation results of simultaneous determination of poverty, fertility and remittances are presented in Section 6.3 whereas concluding remarks are summarised in Section 6.4.

6.2 Descriptive statistics and estimation results

6.2.1 Descriptive statistics

Chapter 3 provides more detailed descriptive statistics and cross tabulation regarding the abovementioned relationships. This section presents descriptive statistics of the data to be used in analysing the simultaneous determination of poverty, remittances and fertility, given a different sample is used for this analysis. The sample is different due to the necessity to restrict the sample in fertility equation according to the age where mothers in Albania generally give birth at (Section 5.4.2).

Table 6.1 presents descriptive statistics of continuous variables to be used in the estimations. Average per adult equivalent monthly consumption of the household is 8,604.37 lek[116] whereas the average amount of monthly remittances received from household members and relatives and friends is 28,248.56 ALL[117]. The average age of household head is 47 years whereas mean age of mothers in the household is 35 years. On average, 45 percent of adults in the household are males suggesting a higher share of adult females whereas the opposite holds for gender ratio of children ever born to a mother. The average dependency ratio in the sample is 63 percent whereas the mean household size is around 5 members. The average share of unemployed adults is only around 10 percent whereas only around 29 percent of mothers (aged 18-45 years) in the household are employed.

The data also indicate that a maximum number of families within the household with mothers aged 18 to 45 years is 3 whereas the average is 1.10.

[116] Around 62€.
[117] Around 202€.

Table 6. 1. Descriptive statistics of continuous variables

Variable	Obs	Mean	Std. dev.	Min	Max
Natural logarithm of per adult equivalent monthly consumption	3,018	8.97	0.41	7.44	10.64
Per adult equivalent monthly consumption (in lek)	3,018	8,604.37	3,855.64	1,698.35	41,761.53
Average number of children born to a family	3,018	2.10	1.09	0	8
Total monthly remittances (in ALL)	3,018	28,248.56	67,0453.9	0	35,000,000
Monthly remittances from household members	3,018	18,643.64	66,8985.1	0	35,000,000
Monthly remittances from relatives	3,018	9,604.92	4,7313.5	0	1,375,000
Age of household head	3,018	47.12	12.20	18	92
Dependency ratio	3,018	63.01	47.93	0	350
Share of unemployed adults	3,018	9.51	20.29	0	100
Adult male ratio*	3,018	44.90	15.27	0	100
Household size	3,018	4.74	1.41	1	16
Share of employed mothers	3,018	28.52	45.12	0	100
Share of female children born	3,018	43.12	37.71	0	350
Average age of mothers in the household	3,018	35.00	7.12	18	45
Median age of mothers in the household	3,018	34.99	7.07	18	45
Migrant households	354	53.39	49.96	0	1
Recipient households	189	0.50	0.50	0	1
Asset index	3,018	-0.001	2.01	-4.74	8.82
Relative deprivation index	3,018	1.09	48.8	2	5
Social capital index	3,018	49.3	53.4	-0.78	3.73
Social capital index (restricted)	3,018	12.26	1.64	-0.08	3.37
Number of families within the household	3,018	1.10	0.13	1	3

* Adult male ratio equals 100 because for three households spouse is not present has migrated. In two cases it is the mother therefore only husband is present in the household whereas for one household it is the mother and son present and the spouse has migrated.

Table 6.2 and 6.3 present the proportions of dummy indicators to be utilized in the regression. The data suggest that 11 percent of households are poor. Only around 12 percent (354) of households have migrants and out of them only 6 percent (189) have international migrants. Around 18.8 percent received remittances from family members and friends and relatives. Moreover, 15.9 out of 18 percent of households receiving remittances from relatives and friends have no member abroad, highlighting their importance in terms of the welfare of households.

Table 6. 2. Proportion of categorical variables, in percentages

Variable	Percent
Poor households	11.00
Households with international migrants	6.26
Remittance recipient households	18.75
Remittances from household members	3.9
Remittances from friends and relatives	15.98
Female headed household	4.97
Albanian head	98.54
Presence of chronic ill member	26.64
Presence of informal employed member	55.70

Regarding headship, 98.5 percent of heads are Albanian and only 5 percent of households are headed by females. Considering geographic indicators, households are almost equally distributed in rural and urban areas while the highest share of households reside in the Central region whereas the lowest in Tirana (Table 6.3).

Table 6. 3. Proportions of geographical indicators, in percentages

Variable	Percentage
Urban	48.77
Rural	51.23
Total	**100.00**
Coastal	27.93
Central	43.34
Mountain	20.25
Tirana	8.48
Total	**100.00**

With regards to education, the data in Table 6.4 suggest that households generally have up to primary or secondary education attainment. More precisely, in more than 50 percent of households the maximum level of education of head, mothers and fathers is less than primary or primary attainment.

Table 6. 4. Distribution of the maximum level of education of mothers[118] and fathers in the households and highest level of education of the head, in percentages

Education level	Mothers in the household	Fathers in the household	Head of the household
Primary or less	51.99	50.00	52.38
Secondary	33.33	37.51	34.22
Tertiary	14.68	12.49	11.02
Total	**100.00**	**100.00**	**97.62**

[118] Although only 41 households have more than one mother aged 18-45 years we generated both maximum and most frequent mode of education of mothers in the household. The data suggest that they do not differ and similarly for father's education.

6.2.2 Preliminary diagnostics

Before proceeding with estimations of the system of equations some checks are performed to ensure that correct set of variables are included in the equations. In addition to overidentification test, it is also considered whether theoretically any of the variables seem plausible to be included in such equation and also perform an F-test to test if its coefficient is statistically different from zero. The F-test results are presented in Table 6.5.

The three sets of equations in the system include a number of explanatory variables motivated from theory, country context as well as commonly used variables in the literature. More precisely, equations in the system include three groups of independent variables. The first group is that of commonly used variables in the three equations. In addition, each equation includes one or more variables, which are theoretically considered to determine its dependent variable but not other endogenous variables in the system (other dependent variables) known as instruments.

Informal employment indicator is considered as an instrument for consumption given it is theoretically expected to determine consumption/poverty directly but not remittance receipt and fertility. As instruments for remittance equation migration network proxy is utilized which is also commonly used in the literature (Acosta et al., 2007; Adams et al., 2008; Shehaj, 2012) as exclusion restriction to identify non-remittance recipient equation when estimating the impact of remittances on poverty. In addition, migration period dummies are used as they are considered to affect remittance receipt directly but not consumption and fertility.

In fertility equation a measure of contraceptive use in the region as well as religion are used as instruments given both are expected to affect fertility directly but are not considered as determinants of consumption and remittance receipt. Inclusion of religion indicator is not evident in consumption and remittance literature and differences in consumption or remittance receipt patterns are not expected to directly affect poverty and remittances in Albania.

The third group is that of common variables for consumption and remittance equation that have not been generally used in fertility literature; and vice versa. Age of the head, share of

adult males, share of unemployed adults, female headship and dependency ratio are some of the most commonly used variables in poverty and migration and remittances literature however, not in fertility. This could be mainly due to studies analysing determinants of fertility at family level thus generally focusing on family indicators.

Age of the head can be considered to have an effect on fertility as it can reflect intergenerational differences in fertility behaviour (view towards fertility). Households with older heads are more likely to be larger/extended and have a more traditional view on fertility compared to households with younger heads. The share of adult male ratio is not generally observed in fertility literature. Bhaumik and Nugent (2005) however, include the number of adults in the household to assess whether the space-related and other costs of sharing a household with other adults offset the benefits of additional adults in sharing expenses and childcare. Therefore, it seems plausible to include the share of adult males also in fertility equation and the indicator also may reflect potential gender differences. The abovementioned indicators are included in a separate fertility equation and an F-test is performed which suggests that their coefficients are jointly significantly different from zero. Hence, the indicators are included in the fertility equation as well. Bhaumik and Nugent (2005) also include an indicator of the number of children in the household. However, that may not be appropriate given number of children in the household can be endogenous to household fertility decisions; as couples take into consideration number of current children when deciding to have another child. On the other hand, dependency ratio, which is constructed by dividing the number of children up to 14 years old and number of elderly (65 years and over) by number of household members, is considered as an important determinant in poverty and remittance equations whereas it cannot be included in fertility equation given it itself reflects fertility of the household.

Share of unemployed adults is another indicator commonly used in other two equations however it is not theoretically expected to be a determinant of fertility decisions. The F-test also suggests that the hypothesis that its coefficient is different from zero in fertility equation can be rejected at 5 percent significance level.

On the other hand, the indicators specifically used in fertility literature are mother's age, employment status and preference for sons. Mother's age and employment can also affect household poverty/consumption. Younger mothers may have different consumption

behaviour compared to older ones either in terms of spending in general or for their children. Also employment of every adult in the household can be considered as important in terms of consumption although in general studies use a measure of the household employment situation. Moreover, the Sargan test null hypothesis that the instruments are valid cannot be rejected at 5% significance level if this indicator is not included in consumption equation (where it also appears significant). Also, mother's employment could be endogenously related to poverty thus it should be interpreted with caution. The share of female children can be considered to matter in terms of consumption. It may reflect lower consumption needs for females to achieve the same level of welfare as males. The results of the F-test in separate consumption regression also suggest their inclusion, as joint effect of these variables is significantly different from zero. This indicator however is not expected to affect migration and remittance decision. The F-test for the share of female children can be rejected only at 5% significance level nevertheless; the indicator appears insignificant when included in remittance equation in 3SLS estimation.

Given the limitation of social capital indicator discussed in Section 5.5, in another specification the model is estimated by including a more restricted measure of social capital, namely using the social capital index constructed by leaving out questions that were not asked to every household (Table 6B.1). In this specification the (restricted) social capital index appears insignificant and Sargan's test for overidentification is rejected although, the results are largely similar to those of the main model (Table 6.7).

As discussed in Section 5.5.3 the indicator of the mother's age at first birth cannot be included given there are households with no children. The indicator is constructed using information only for households with children and in another specification this indicator is included to assess whether it has an effect on fertility. The indicator appears insignificant whereas in general the results remain largely similar (Table 6B.2).

Relative deprivation index is theoretically expected to affect remittance decision however, when included in 3SLS estimations both the index and its squared term appear insignificant. Moreover, the null hypothesis of the Sargan-Hansen test of overidentification is rejected in this specification whereas it cannot be rejected in the specification which excludes relative deprivation index and its squared term (Table 6B.3). Hence this indicator is excluded from estimations.

Table 6. 5. F-test results for specific indicators

Regressors tested	**Fertility equation**	**Remittances equation**	**Consumption**
Age of the head & its squared term	F(2, 2998) = 16.87 Prob > F = 0.0000		
Adult male ratio	F(1, 2999) = 2.80 Prob > F = 0.0942		
Age of the head & its squared term and Adult male ratio =0	F(3, 2997) = 11.30 Prob > F = 0.0000		
Share of unemployed adults[119]	F(1, 2996) = 5.23 Prob > F = 0.0223		
Dependency ratio	F(1, 2996) = 966.74 Prob > F = 0.0000		
Female-headed household	F(1, 2996) = 4.29 Prob > F = 0.0385		
Employment status of mothers		F(1, 2992) = 0.24 Prob > F = 0.6229	F(1, 2995) = 16.88 Prob> F = 0.0000
Share of female children		F(1, 2992) = 4.00 Prob > F = 0.0457	F(1, 2995) = 4.84 Prob > F = 0.0279
Mothers age and its squared term		F(2, 2991) = 2.37 Prob > F = 0.0940	F(2, 2994) = 30.38 Prob > F = 0.0000
Mothers age; Employment status of mothers and share of female children=0			F(4, 2992) = 18.49 Prob > F = 0.0000
Muslim		F(1, 2992) = 0.24 Prob > F = 0.6253	F(1, 2991) = 3.71 Prob > F = 0.0541

[119] After adult male ratio and age of head are added to other theoretically expected and most commonly used indicators.

Test for endogeneity of consumption, fertility and remittance receipt variables

Although the potential simultaneity among poverty and fertility and remittance decisions has been rationalised from a theoretical perspective, it is still important to test the hypothesis explicitly before proceeding to the simultaneous equations analysis of these decisions. If the variables specified as endogenous can in fact be treated as exogenous, the coefficients estimated using simultaneous analyses are likely to be inefficient.

To empirically justify the simultaneity of household decisions, an enhanced test for endogeneity -Durbin-Wu-Hausman endogeneity test (DWH)[120] is applied to household decision variables that are specified as endogenous in the simultaneous equations system. DWH test for endogeneity is equivalent to the Hausman test under conditional homoscedasticity. Under the null hypothesis of the endogeneity test, the might-be-endogenous variables can actually be treated as exogenous, and the test statistic follows a Chi-squared distribution with degrees of freedom equal to the number of might-be-endogenous variables being tested. If the null hypothesis of exogeneity is rejected, the necessity of a simultaneous equations model can be statistically justified. The results in Table 6.6 suggest that the exogeneity of the three potentially endogenous variables namely, consumption, fertility and remittances is strongly rejected in respective equations. An important implication is that it is inappropriate and invalid to treat these variables as exogenous hence, a simultaneous equations model is necessary/appropriate.

[120] The Stata code is developed by Baum et al. (2006).

Table 6. 6. Test for endogeneity of consumption, fertility and remittance indicator

	Consumption equation (CONS)	**Remittance equation (REM)**	**Fertility equation (FER)**
Regressors tested	**REM/FER**	**CONS/FER**	**CONS/REM**
Instrumental variables used	Contraceptive use, Muslim Migration wave dummies, Migration network	Informal employment, Muslim, Mothers age, Employment status of mothers, Asset index Share of female children, Muslim	Informal employment, Migration wave dummies, Migration network, Share of unemployed adults, Female-headed household, Dependency ratio
Hausman test for endogeneity	F(2, 2990) = 10.32 Prob > F = 0.000	F(2, 2991) = 5.93 Prob > F = 0.0027	F(2, 2995) = 499.57 Prob > F = 0.0000

6.3 Estimation results

The significance level of the coefficient estimates is examined in order to determine if there exists a simultaneous determination of the aforementioned decisions. For instance, to accept a two-way causality between poverty and fertility the coefficient estimates for poverty and fertility should appear significantly different from zero in respective equations and similarly for the causality between poverty and remittances and the latter with fertility.

The diagnostic tests presented in Table 6.7 suggest that the model is correctly specified. The Breusch-Pagan LM Diagonal Covariance Matrix Test rejects the hypothesis that each equation could be estimated independently thus indicating that estimation of 3SLS is more appropriate. For an equation to be identified, also the order condition must be satisfied (Wooldridge 2009). The structure of the three equations suggests that the order condition is satisfied. The equations are overidentified because the number of excluded exogenous variables is greater than the number of endogenous variables. Therefore, the Sargan-Hansen

test for overidentifying restrictions has been applied and the test cannot be rejected suggesting that the instruments are valid.[121] In addition, the results of the test for rank condition suggest that this condition is satisfied as well (Table 6C.1).

The overall system heteroscedasticity tests suggest that the system suffers from heteroscedasticity. In presence of heteroscedasticity, reg3 command in Stata does not have a robust option but bootstrap is used in order to obtain heteroscedasticity consistent standard errors using 150 replications.

The reported R^2 for fertility equation is negative and this is possible with 3SLS or other IV estimators. According to Sribney et al. (2015) when the 2SLS/3SLS parameters are estimated some of the regressors enter the model as instruments. Given the aim is to estimate the structural model, in order to determine the model sum of squares (MSS), the actual values are used and not the instruments for the endogenous right-hand-side variables. Hence, "*the model's residuals are computed over a set of regressors different from those that are used to fit the model. This means a constant-only model of the dependent variable is not nested within the two-stage least-squares model (3SLS), even though the two-stage model estimates an intercept, and the residual sum of squares (RSS) is no longer constrained to be smaller than the total sum of squares (TSS). When RSS exceeds TSS, the MSS and the R^2 will be negative*". Moreover, the authors suggest that the R^2 does not really have a statistical meaning in the context of 3SLS or other instrumental variable estimators.

Comparison of 3SLS, 2SLS and separate OLS regression results

Comparison of results between 3SLS, 2SLS and separate OLS regression are presented in Tables 6.8-6.10. An important advantage of the 3SLS estimation technique is that it allows for correlations among the error components in addition to simultaneity among the set of household decisions. Hence, 3SLS estimation is considered to be asymptotically more efficient. 3SLS however may be more vulnerable to specification errors when compared to 2SLS. This said, 2SLS estimation results are compared to 3SLS to determine if there is a gain in using 3SLS.

[121] The joint null hypothesis that the excluded instruments are valid instruments, i.e., uncorrelated with the error term and are correctly excluded from the estimated equation is tested. A rejection casts doubt on the validity of the instruments (Cameron and Trivedi, 2009)

The results suggest that 2SLS regression provides similar results to those in 3SLS in terms of sign and statistical significance except for few indicators.[122] The main difference is that in consumption equation region dummies appear statistically insignificant in 2SLS estimations compared to significant coefficients in 3SLS. Regarding fertility equation, the only difference is the statistical significance of religion indicator in 2SLS compared to insignificant coefficient in 3SLS.

Different from 3SLS, the results from separate OLS regressions suggest that causality between endogenous variables of remittance receipt and consumption does not hold, as both indicators appear insignificant in respective equations. Moreover, the results also indicate that there is only one-way causal relationship between remittances and fertility. More precisely, only fertility is found to significantly affect remittances whereas the remittance receipt indicator appears insignificant in fertility equation. This could be due to simultaneity bias given when appropriate technique namely, 3SLS is utilized to control for endogenous determination, the relationships hold and confirm theoretical expectations. The separate OLS results however suggest that there is causality between fertility and poverty as both indicators appear significant in respective equations; however, the difference in size of the coefficient is notable in fertility equation.

The results also highlight differences between the two models with respect to exogenous and pre-determined variables. More precisely, in consumption equation regional indicators appear statistically insignificant in OLS[123] in contrast to 3SLS whereas dependency ratio and female-headed household indicators appear significant. Moreover, in general the size of coefficients differs and is generally higher in 3SLS (Table 6.8). Concerning remittances equation, the comparison of results in Table 6.9 suggests that results remain largely the same. The differences are rather more pronounced in fertility equation (Table 6.10). In terms of statistical significance, contrary to 3SLS mother's education appears significant in OLS. On the other hand, only primary or less than primary education attainment of fathers is found to matter. In addition, asset index, chronic ill, adult male ratio and age of head appear insignificant in OLS regression and the size of coefficients also differs between the two models.

[122] See Section 5.3 for a discussion on differences between 2SLS and 3SLS.
[123] Except the Coastal region dummy, which is significant at 10%.

3SLS results

The results from the 3SLS estimation to the system of equations are reported in Table 6.7. The results suggest that as expected poverty, fertility and remittances are jointly determined. More precisely, the endogenous indicators appear statistically significant in respective equations. A detailed interpretation of results for each equation within 3SLS is provided in the following subsections.

Table 6. 7. 3SLS estimation results

VARIABLES	(1) FERTILITY	(2) REMITTANCES	(3) CONSUMPTION
Ln monthly per adult eq consumption	-7.115***	0.164***	
	(0.731)	(0.056)	
Average nr. of children born		0.043***	-0.139***
		(0.012)	(0.017)
Remittance receipient hh	1.958***		0.276***
	(0.544)		(0.077)
Max education of mother -primary	0.051	0.009	0.007
	(0.170)	(0.027)	(0.026)
Max education of mother- secondary	-0.140	0.021	-0.019
	(0.155)	(0.027)	(0.024)
Max education of father- primary	-1.062***	0.020	-0.149***
	(0.214)	(0.029)	(0.028)
Max education of father-secondary	-0.658***	0.0085	-0.092***
	(0.164)	(0.025)	(0.022)
Female headed hh		0.185***	0.0004
		(0.037)	(0.001)
Age of head	-0.126***	-0.000	-0.018***
	(0.032)	(0.004)	(0.004)
Age of head sq.	0.001**	-0.000	0.000***
	(0.000)	(0.000)	(0.000)
Adult male ratio	0.019***	-0.003***	0.003***
	(0.004)	(0.001)	(0.001)
Presence of chronic ill	-0.430***	0.052***	-0.061***
	(0.123)	(0.016)	(0.017)
Dependency ratio		-0.001***	-0.000
		(0.000)	(0.000)
Dependency ratio sq.		0.000***	
		(0.000)	
Share of unemployed adults		0.000	-0.000
		(0.000)	(0.000)
Albanian Head	0.900**	0.019	0.127*
	(0.451)	(0.052)	(0.067)
Urban location	-0.964***	0.022	-0.135***
	(0.127)	(0.015)	(0.016)
Migrants9096		0.395***	
		(0.072)	
Migrants1997		0.478***	
		(0.088)	
Social capital index	0.515***	0.129***	0.072***
	(0.088)	(0.034)	(0.012)

Table 6.7. 3SLS estimation results (Cont.)

VARIABLES	FERTILITY	REMITTANCES	CONSUMPTION
Social capital index sq.		-0.059***	
		(0.013)	
Central region		0.038	-0.012***
		(0.024)	(0.003)
Coastal region		0.038	-0.062***
		(0.025)	(0.018)
Mountain region		0.122***	-0.049***
		(0.027)	(0.014)
Migration network		0.000	
		(0.000)	
Mothers age	0.324***		0.046***
	(0.061)		(0.010)
Mothers age sq.	-0.004***		-0.001***
	(0.001)		(0.000)
Employment of mothers	0.292***		0.041***
	(0.095)		(0.014)
Share of female children	0.005***		0.001***
	(0.001)		(0.000)
Contraceptive use in the region	0.066***		
	(0.020)		
Asset index	0.479***		0.067***
	(0.059)		(0.005)
Muslim	-0.009		
	(0.013)		
Informal proxy			-0.001
			(0.003)
Constant	57.16***	-1.355**	8.702***
	(6.516)	(0.550)	(0.226)
Observations	**3,018**	**3,018**	**3,018**
Sargan-Hansen test			0.116
Breusch-Pagan LM Diagonal Covariance Matrix Test			P-Value > Chi2(3)= 0.000
Overall System Heteroscedasticity			
Breusch-Pagan LM Test			P-Value > Chi2(3)= 0.000
Likelihood Ratio LR Test			P-Value > Chi2(3)= 0.000
Wald Test			P-Value > Chi2(3)= 0.000

*Note: ***, **, * Significant at 1%, 5% and 10% level*

Table 6. 8. Comparison of OLS, 2SLS and 3SLS results for consumption equation

VARIABLES	CONSUMPTION OLS	CONSUMPTION 2SLS	CONSUMPTION 3SLS
Ln monthly per adult eq consumption	0.009	0.247***	0.276***
	(0.017)	(0.093)	(0.077)
Average nr. of children born	-0.069***	-0.196***	-0.139***
	(0.008)	(0.041)	(0.017)
Female headed hh	0.060*	-0.030	(0.077)
	(0.031)	(0.039)	0.000
Max education of mother -primary	-0.013	0.025	0.007
	(0.025)	(0.034)	(0.026)
Max education of mother -secondary	-0.029	-0.007	-0.019
	(0.024)	(0.029)	(0.024)
Max education of father -primary	-0.146***	-0.145***	-0.149***
	(0.025)	(0.028)	(0.028)
Max education of father -secondary	-0.092***	-0.089***	-0.094***
	(0.023)	(0.027)	(0.022)
Age of head	-0.022***	-0.014***	-0.018***
	(0.004)	(0.004)	(0.004)
Age of head sq.	0.0002***	0.000**	0.0001***
	(0.000)	(0.000)	(0.000)
Dependency ratio	-0.001**	0.001*	-0.000
	(0.002)	(0.001)	(0.000)
Adult male ratio	0.002***	0.003***	0.003***
	(0.001)	(0.001)	(0.001)
Share of unemployed adults	0.000	0.000*	-0.000
	(0.000)	(0.000)	(0.000)
Albanian head	0.156***	0.113*	0.127*
	(0.054)	(0.063)	(0.067)
Presence of chronic ill	-0.053***	-0.055***	-0.061***
	(0.0152)	(0.0192)	(0.0168)
Asset index	0.073***	0.067***	0.067***
	(0.004)	(0.005)	(0.005)
Central region	0.042*	0.042	-0.012***
	(0.026)	(0.028)	(0.003)
Coastal region	-0.027	-0.028	-0.062***
	(0.026)	(0.027)	(0.018)
Mountain region	0.006	0.024	-0.049***
	(0.028)	0.042	(0.014)
Urban location	-0.119***	-0.135***	-0.135***
	(0.015)	(0.017)	(0.016)
Informal proxy	-0.007	-0.016	-0.001
	(0.015)	(0.017)	(0.003)
Social capital index	0.073***	0.068***	0.072***
	(0.012)	(0.012)	(0.012)
Employment of mothers	0.046***	0.046***	0.041***
	(0.016)	(0.015)	(0.014)
Share of female children	0.0004**	0.001***	0.001***
	(0.000)	(0.000)	(0.000)
Mothers age	0.037***	0.042***	0.046***
	(0.009)	(0.012)	(0.010)
Mothers age sq.	-0.0004***	-0.0004**	-0.001***
	(0.000)	(0.000)	(0.000)
Constant	8.914***	8.575***	8.702***
	(0.195)	(0.230)	(0.226)
Observations	**3,018**	**3,018**	**3,018**

*Note: ***, **, * Significant at 1%, 5% and 10% level*

Poverty/consumption equation

Table 6.7 suggests that the results for consumption equation in general are in accordance with theoretical expectations. Regarding endogenous variables, as expected, fertility is found to exert a negative effect on consumption. Holding other factors constant, it is estimated that, one percentage point increase in average number of children born to a family decreases per adult equivalent monthly consumption (henceforth consumption) by around 13.9 percent[124]. The coefficient of remittance receipt indicator as expected, is positively related to consumption indicating that being a remittance recipient household compared to non-recipient one, increases consumption by 31.8 percent[125], *ceteris paribus*. The results for remittance receipt and fertility indicators are in line with those in previous estimations of consumption equation (Section 4.5). Although proxies rather than direct indicators are included in previous estimations, they appear statistically significant and have the expected sign.

Regarding education, the results are in accordance with human capital theory however only father's education appears important and has a strong statistically significant effect on consumption. The effect is non-linear, being higher for increased levels of education. More precisely, holding other factors constant, compared to a household where highest level of education of fathers is tertiary those with primary or less than primary and secondary attainment have 16.1 and 9.7 percent lower consumption, respectively. This suggests that secondary and tertiary levels of education are more important in terms of consumption and more educated fathers are more productive hence contribute more to household consumption. This result is in agreement with results of consumption equation in the previous estimations in Chapter 4.

From the set of household demographic characteristics, only the share of adult males, share of female children born and age of the head matter in terms of consumption. As expected, one percentage point increase in the share of adult males on average increases household consumption by around 0.3 percent, *ceteris paribus*. Similarly, the results for the indicator of share of female children born supports expectations that females need less calories thus,

[124] 100*(-0.139). $\%\Delta emsh = 100 * \beta 1 * \Delta sedu$

If the indicator of average number of children born changes by 1 percentage point, the emsh ratio is expected to change by 100* β1 percent.

[125] 100*(exp(0.276)-1)).

consume less in order to achieve the same level of wellbeing as males. However, the magnitude of the effect is very small.

Different from estimations in Chapter 4, age indicators appear statistically significant and have the expected signs. More precisely, age of the head of the household exerts a U-shaped effect on consumption. Age of the head has a negative effect on consumption until age of 67.6 and a positive effect afterwards.[126] Regarding mother's age, the results support expectations that spending/consumption attitude of young and older mothers is different, younger ones having higher spending tendency. More precisely, the effect of the average age of mothers on consumption is estimated to be positive until the age of 44 and negative afterwards, holding other factors constant. A potential reason could be the inclusion of different age cohorts in this analysis.

The indicator of mother's employment also appears statistically significant and exerts a positive effect on consumption. More precisely, if majority of mothers in the household are employed consumption increases by around 4.1 percent compared to households where majority of mothers are unemployed. Besides reflecting the contribution of mothers' employment to consumption the indicator also reflects the attitude of mothers towards fertility and family planning. Employed mothers are more likely to marry later and have lower number of children hence, have a higher level of welfare. Other household characteristics such as dependency ratio, share of unemployed adults and female headship do not appear to be significant predictors of consumption in simultaneous analysis. The former two indicators are included as explanatory variables in the previous empirical analysis and in contrast to these results appeared statistically significant.

In line with expectations, asset index and social capital index have strong and positive effect on consumption. It is estimated that, on average, one percentage point increase in asset index and social capital index increases consumption by 6.7 and 7.2 percent, respectively, *ceteris paribus*. The result suggests that as expected households with more assets and social capital have higher level of welfare. The results concerning health/shock indicator as expected suggest that having chronic ill members decreases consumption. It is estimated that on average, households with at least one chronic ill member have 6.2 percent lower consumption

[126] ((ageofHead/(2*ageofHead2))

when compared to those without chronic ill members, *ceteris paribus*.

In line with previous estimations, the coefficient for the ethnicity indicator is significant yet only at 10% significance level. The indicator however has the expected sign, suggesting that Albanian households have higher levels of consumption compared to other minor ethnic groups.

In line with the results in previous estimations, the results in Table 6.7 suggest that region indicators impose a strong and statistically significant effect on consumption. In line with expectations, households residing in Central, Coastal and Mountain region on average have 0.1, 0.6 and 0.5 percent lower household consumption, respectively compared to those residing in Tirana, *ceteris paribus*. On the other hand, the coefficient of urban residence indicator exerts a counterintuitive negative effect on consumption. The unexpected sign is also in contrast with results in previous estimations. This result however is in line with the descriptive analysis in Chapter 3. The data suggest that rural poverty rate in Albania has considerably decreased over 2002-2012 period whereas urban poverty has increased in 2012. The decrease in poverty rate could be a result of increased efforts towards rural development and the phenomenon of population shifts from rural to urban areas; in addition, the aftermath of the crises is considered to have mainly impacted the urban areas (INSTAT and World Bank, 2015b). The urban residence dummy may also represent the effect of factors that are not controlled in the model but that could really have a negative effect on consumption.

In addition, in contrast to results of the previous empirical analysis informal employment proxy appears insignificant.

Remittance equation

Different from other two equations, the dependent variable in remittance equation is a binary indicator thus the indicator takes only values of zero and one. OLS regressions with binary dependent variables are known as Linear Probability Models as the response probability is linear in the parameters. Hence, to interpret the indicators it should be noted that a change in independent variables changes the probability that household has someone abroad or is a remittance recipient, holding other factors constant (Wooldridge, 2009).

Overall, the results are in line with theoretical predictions. As noted earlier both endogenous variables appear statistically significant and exert a strong effect on remittance receipt. The coefficient of consumption indicator exerts a positive effect on remittance receipt, which supports inheritance motive to remit. Under this motive, altruism may prevail thus remitter sends remittances when recipients face poverty shock and adverse conditions; but continues to remit even when household welfare improves, due to self-interest motive as well. It is estimated that, on average, one percent increase on per adult equivalent monthly consumption increases probability of receiving remittances by around 0.002 percentage points[127], holding everything else constant. In line with theory, fertility is positively related to remittance receipt. One percentage point increase in the average number of children born to a family on average increases the household probability to receive remittances by 0.4 percentage points[128], *ceteris paribus*.

Contrary to other two equations, education indicators appear insignificant. From the set of household characteristics, most of the indicators appear statistically significant. As expected, probability of being a remittances recipient is higher for female-headed than male-headed households which supports altruism or tempered altruism motive to remit. Also in line with expectations, dependency ratio and its squared term appear statistically significant and exert a U-shaped effect on remittances. This result suggests that as the dependency ratio further increases the remitter may feel responsible for the wellbeing of members in the home country thus remits more; which is in line with altruism motive to remit.

[127] (0.164/100); $\Delta y=(\beta 1/100)\%\Delta$LnConsumption.
[128] $\Delta y=\beta 1\ \Delta$Avnrchildren.

An increase in the share of adult male members as expected is found to decrease the probability to receive remittances given they are more likely to work and provide income for the household.

From social capital indicators only the social capital index of the household in the home country and its squared term appear significant. The effect of social capital as expected is non-linear and exerts an inverted U-shaped effect on the probability to receive remittances.

In line with expectations the results suggest that there are statistically significant differences in remittance behaviour amongst those that migrated in different waves of migration. Households that have at least one member that migrated in 1990-1996 and 1997 period compared to 1998-2012 are found to have a higher likelihood of remittance receipt. The results support the argument that those who migrated in earlier waves have a higher sending potential given they are likely to be more established and experienced (at least in the market of host country) hence, earn more. This is also in line with cross tabulation statistics in Chapter 3 and suggests that the ties of Albanian migrants have not decreased, on the contrary remain strong.

Table 6. 9. Comparison of OLS, 2SLS and 3SLS estimation results for remittances equation

VARIABLES	REMITTANCES OLS	REMITTANCES 2SLS	REMITTANCES 3SLS
Ln monthly per adult eq consumption	0.020	0.155***	0.164***
	(0.019)	(0.053)	(0.056)
Average nr. of children born	0.021***	0.046***	0.043***
	(0.008)	(0.015)	(0.012)
Max education of mother -primary	-0.000	0.009	0.009
	(0.026)	(0.029)	(0.027)
Max education of mother -secondary	0.0093	0.0205	0.0206
	(0.024)	(0.026)	(0.027)
Max education of father -primary	-0.013	0.018	0.020
	(0.027)	(0.027)	(0.029)
Max education of father -secondary	-0.010	0.007	0.008
	(0.025)	(0.023)	(0.025)
Female headed household	0.201***	0.200***	0.185***
	(0.034)	(0.035)	(0.037)
Dependency ratio	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)
Dependency ratio sq.	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)
Adult male ratio	-0.002***	-0.003***	-0.003***
	(0.001)	(0.000)	(0.001)
Albanian head	0.039	0.022	0.019
	(0.058)	(0.05)	(0.052)
Presence of chronic ill	0.0447***	0.051***	0.052***
	(0.016)	(0.018)	(0.016)
Age of head	0.000	-0.001	-0.000
	(0.004)	(0.004)	(0.004)
Age of head sq.	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
Share of unemployed adults	-4.38e-05	-6.90e-05	0.000101
	(0.000)	(0.000)	(0.000)
Urban location	0.0091	0.0173	0.022
	(0.015)	(0.015)	(0.015)
Migrants9096	0.433***	0.423***	0.395***
	(0.067)	(0.066)	(0.072)
Migrants1997	0.476***	0.457***	0.478***
	(0.100)	(0.088)	(0.088)
Social capital index	0.157***	0.135***	0.129***
	(0.035)	(0.032)	(0.034)
Social capital index sq.	-0.065***	-0.061***	-0.059***
	(0.016)	(0.013)	(0.013)
Central region	0.023	0.015	0.038
	(0.0280)	(0.026)	(0.024)
Coastal region	0.0266	0.0220	0.0378
	(0.029)	(0.028)	(0.025)
Mountain region	0.0998***	0.0997***	0.122***
	(0.029)	(0.029)	(0.027)
Migration network	-0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)
Constant	0.0120	-1.233**	-1.355**
	(0.218)	(0.518)	(0.550)
Observations	**3,018**	**3,018**	**3,018**

*Note: ***, **, * Significant at 1%, 5% and 10% level.*

The presence of at least one household member suffering from a chronic disease appears statistically significant and positively influences the probability to receive remittances, which supports the coinsurance motive behind migration. More precisely, households with at least one chronic ill member have a higher likelihood of receiving remittances compared to households without any.

Regional indicators and urban location appear statistically insignificant except for the Mountain region indicator. As expected, households residing in the Mountain region compared to Tirana have a higher probability of being a remittance recipient. Indicators of age of the head and its squared term, ethnicity and share of unemployed adult members also appear statistically insignificant.

Fertility equation

The results for fertility equation presented in Table 6.7 indicate that all indicators except for education of mothers and religion appear statistically significant and are mostly in accordance with theory. Considering endogenous variables, the results suggest that holding other factors constant, compared to non-recipient households, being a remittance recipient increases the average number of children born to a family by around 2 percentage points. The coefficient of the poverty indicator is negative and exerts a statistically significant effect on fertility. In line with theory, this result suggests that as income/consumption increases, households prefer less but higher quality children (invest more in them). In other words, the substitution effect due to higher price associated with high quality children is larger than the income effect. Holding other factors constant, it is estimated that on average, one percent change in per adult equivalent monthly consumption decreases the average number of children born to a family by 0.07 percentage points[129]. Similarly, the coefficient of asset ownership is positive supporting the theoretical expectations that assets expand the financial resources available to household whereas do not affect relative cost of children, hence increasing fertility.

Although theoretically it is expected to be one of the most important determinants of fertility, the results suggest that mother's education does not appear significant. This suggests that

[129] $\Delta y=(\beta 1/100)\%\Delta$LnConsumption.

there are no significant differences in fertility attitude between less or no educated and more educated mothers. One reason could be low labour market participation of women in Albania (Section 3.2.3). The indicators of the maximum level of education of fathers in the household however are found to exert a strong statistically significant effect yet with an unexpected (negative) sign. Hence, the result is not in support of the neoclassical theory of demand for children but rather suggests that income effect dominates the substitution effect. In other words, the improved economic opportunities increase the demand for children, suggesting that education is not strong enough to reverse/change cultural preferences in terms of fertility. *Ceteris paribus*, households where maximum level of education of fathers is less than primary or primary and secondary on average have lower average number of children ever born when compared to those with tertiary education.

Employment of the mother however is found to matter and similar to results for father's education it exerts a positive effect on fertility. More precisely, the results suggest that due to increased level of income from employment, income rather than substitution effect dominates; thus, higher income leads to higher time dedicated to raise children. This result supports the argument that family policies which reduce the direct or indirect (opportunity) cost of children increase fertility (Gerseter and Lappegård, 2010). Although theory highlights the importance of employment in addition to education, as a robustness check in another specification the model is estimated by excluding mother's employment indicator to assess whether employment indicator could have captured the effect of both education and potential earnings (Table 6B.4). The results suggest that indicators of mother's education become statistically significant whereas those of father's education insignificant yet, the sign remains negative. Another possibility could be that father's education indicators could have captured the effect of education of both spouses. Despite being considered important in terms of fertility, the model is estimated by excluding father's education indicators whereas including mother's education and employment indicators. The results indicate that education of mothers and employment indicators appear statistically significant supporting the abovementioned expectation whereas the signs remain negative (Table 6B.5). The model in both abovementioned specifications however is not identified, as the results of Sargan test suggest that joint null hypothesis that the excluded instruments are valid instruments is rejected, which casts doubts on the validity of estimates.

The effect of age indicators is statistically significant and non-linear. The coefficient of

mother's age exerts an inverted U-shaped effect on fertility. In line with theory, the number of children a mother has increases but on a diminishing rate as age increases. More precisely, average number of children born to a family increases until the age of 44.6 years, after which it begins to decrease. As expected, age of the head exerts a U-shaped effect on fertility decision namely, households with older heads have higher tendencies towards fertility. The average number of children decreases for households where head is up to 68 years old and increases afterwards.

An increase in adult male ratio as expected exerts a positive effect on fertility. More precisely, the results suggest that the benefits of additional adults in sharing expenses and childcare offset the space-related and other costs of sharing a household with other adults. Also the findings suggest that Albanian households have higher fertility levels when compared to other ethnic groups whereas no differences are found between religious groups in fertility decisions.

The results also confirm preference for sons as a phenomenon amongst households in Albania. More precisely, an increase on the average share of female children born to a family increases the average number of children to a family in the household. Surprisingly, the indicator of contraceptive use in the region exerts a counterintuitive positive effect on fertility. This could be due to indicator being measured on regional level rather than a direct indicator of contraceptive use in the household. The indicator may reflect other regional developments such as improvements in health system namely declining or very low child mortality rate and decreased unsuccessful pregnancies (miscarriages) due to improved medical care offered to mothers.

The coefficient of social capital index is statistically significant and in line with theory it exerts a positive effect on fertility. The results also confirm expected negative effect of the presence of chronic ill members in the household. Urban residence is also found to have a strong and statistically significant effect on fertility. As expected, residing in urban compared to rural areas decreases the average number of children born to a family in the household.

Table 6. 10. Comparison of OLS, 2SLS and 3SLS estimation results for fertility equation

VARIABLES	FERTILITY OLS	FERTILITY 2SLS	FERTILITY 3SLS
Ln monthly per adult eq.consumption	-0.500***	-7.059***	-7.115***
	(0.0450)	(0.770)	(0.731)
Remittance recipient hh	0.044	1.944***	1.958***
	(0.042)	(0.505)	(0.544)
Max education of mother -primary	0.356***	0.054	0.051
	(0.063)	(0.206)	(0.170)
Max education of mother -secondary	0.214***	-0.134	-0.140
	(0.059)	(0.189)	(0.155)
Max education of father -primary	-0.125**	-1.050***	-1.062***
	(0.0629)	(0.188)	(0.214)
Max education of father -secondary	-0.088	-0.653***	-0.658***
	(0.058)	(0.172)	(0.164)
Employment of mothers	-0.029	0.299***	0.292***
	(0.039)	(0.101)	(0.095)
Mothers age	0.318***	0.360***	0.324***
	(0.022)	(0.069)	(0.061)
Mothers age sq.	-0.004***	-0.004***	-0.004***
	(0.000)	(0.001)	(0.001)
Age of head	0.0141	-0.122***	-0.126***
	(0.009)	(0.033)	(0.032)
Age of head sq.	-0.0002**	0.001***	0.001***
	(0.000)	(0.000)	(0.000)
Adult male ratio	-0.001	0.019***	0.019***
	(0.001)	(0.005)	(0.004)
Albanian head	-0.058	0.891**	0.900**
	(0.134)	(0.414)	(0.451)
Share of female children	0.005***	0.004***	0.005***
	(0.000)	(0.001)	(0.001)
Contraceptive use in the region	-0.026***	0.063***	0.066***
	(0.006)	(0.019)	(0.020)
Asset index	-0.00302	0.474***	0.479***
	(0.010)	(0.064)	(0.059)
Social capital index	0.0735**	0.518***	0.515***
	(0.031)	(0.083)	(0.088)
Muslim	-0.031	-0.278**	-0.009
	(0.044)	(0.121)	(0.013)
Presence of chronic ill	0.0465	-0.426***	-0.430***
	(0.038)	(0.134)	(0.123)
Urban location	-0.231***	-0.961***	-0.964***
	(0.036)	(0.134)	(0.127)
Constant	1.663**	56.45***	57.16***
	(0.759)	(6.814)	(6.516)
Observations	**3,018**	**3,018**	**3018**

*Note: ***, **, * Significant at 1%, 5% and 10% level.*

6.4 Conclusions

This chapter provides estimation of the simultaneous determination of poverty, fertility and remittances in Albania using data from Albanian Living Standard Measurement Survey 2012. Different to the previous estimations in Chapter 4, the three decisions are modelled within a simultaneous equations system using 3SLS where they are treated as endogenous. Namely, given 3SLS technique allows inclusion of endogenous variables on the right-hand side of the equations, direct indicators of fertility and remittances are used instead of their proxies.

The comparison of results between separate OLS and 3SLS regressions suggest that 3SLS is justified over the OLS estimation method due to several differences in terms of statistical significance as well as size of the coefficients of endogenously determined variables. In addition, the preliminary checks and diagnostic tests support estimation of 3SLS over OLS. On the other hand, the differences in results by using the 3SLS compared to 2SLS are negligible.

Findings of the empirical analysis in this chapter support the expectations of the fifth research question. In other words, the 3SLS estimation results suggest that poverty, fertility and remittances are jointly determined and confirm the indirect effect of education on poverty via fertility in addition to its direct effect. Being a remittance recipient household is found to improve household welfare, further reinforcing the importance of migration and remittances in terms of household's welfare in Albania. An increase in number of children, as expected, is found to decrease per adult equivalent consumption. An increase in the number of children is expected to decrease the share of household resources available for each member, as a result decreasing the overall welfare of the household.

With regards to fertility equation, the results confirm the importance of consumption and remittances. Being a remittance recipient household increases the average number of children to a family; confirming the expectations that remittances expand financial resources available to couples. In line with theoretical expectations, an increase in consumption/income is found to decrease the number of children indicating that as the income increases, the couple prefers less but higher quality children (invest more in them). However, given welfare is

approximated by consumption, another interpretation could be that as cost of living increases, so households spend more on per adult equivalent consumption, they cannot afford having more children.

The effect of consumption on remittances is found to be positive which supports inheritance motive behind remittances but may also be indicative of tempered altruism. An increase in fertility on the other hand is found to increase probability of sending someone abroad and receiving remittances, supporting theoretical expectations that larger households are more likely to have someone abroad and receive remittances.

The findings for other indicators are mostly in accordance with theoretical predictions. The results confirm importance of education however, only in terms of poverty and fertility. Moreover, only father's education attainment is found to matter. With regards to consumption, in line with theory the effect is non-linear, being higher for higher levels of educational attainment; suggesting that more educated individuals earn more than their counterparts hence contribute more to household consumption/welfare.

Surprisingly, mother's education is not found to be important even in fertility equation despite theoretically being considered as one of the most important determinant of fertility. Moreover, the findings are not in line with neoclassical theory of demand for children. On the contrary, it is found that compared to households with less educated fathers, those with highly educated ones have higher fertility rates; suggesting, that they are likely to have more children as their income increases meaning income dominates the substitution effect. This result is in line with Bhaumik and Nugent (2005) whereas in contrast to Imai and Sato (2013) and Tadesse and Asefa (2002) as their findings suggest that increased education of father reduces fertility. An explanation could be that the highly educated fathers (with higher earnings) may afford to have more children. Thus the results may suggest that the Albanian households do not seem to approach children as a means of creating extra income (hence getting out of poverty). Moreover, it suggests that education is not enough to reverse cultural preferences regarding fertility.

Employment of mothers however is found to matter and similar to father's education it exerts a positive effect on fertility; implying that as income generation prospect improves couples tend to have a preference for higher number of children. This result is similar to Rasul (2008)

who finds that employment of father increases fertility (number of children ever born). This result suggests that there are arrangements that allow women to combine both work and childbearing (Gerseter and Lappegård, 2010). Two central components in the Albanian setting are the paid annual leave and child support from household members. According to Code of Labour women are entitled to one year paid maternity leave which can be extended to 390 days if another child is born. It is a social norm in Albania that other mothers in the households such as mothers-in-law or sisters-in-law and even grandparents will help with a new baby for years to come (Gorenca and Milo, 2012).

Households with more assets are found to have higher levels of fertility which supports expectations that assets add to family resources whereas are not expected to affect the relative opportunity cost of children to parents. Increased social capital is also found to increase fertility and this result is in line with findings of other studies in the literature (Philipov et al., 2006; Bühler and Fratzcak, 2004; Philipov and Shkolnikov, 2001; Di Giulio et al., 2012). This could be a result of informal childcare provided or potential monetary and non-monetary support from friends and relatives. By possessing more social capital, couples may be more likely to realize fully their fertility intentions as they may feel more secure given higher perceived social capital might help reducing uncertainty and costs of childbearing (Balbo and Mills, 2011; Philipov et al., 2006).

An increase in adult males is found to increase fertility, indicating that the benefits of additional adults in sharing expenses and childcare offset the space-related and other costs of sharing a household with other adults. Findings also confirm expected differences in fertility behaviour amongst Albanian and other ethnic households. Moreover, in line with expectations, compared to rural ones, urban households are found to have lower fertility rates.

Preference for sons is confirmed to be a phenomenon among households in Albania indicating that couples that have a preference for boys are likely to have higher number of children as they may keep trying until they have a male child. In addition, the results confirm different attitudes towards fertility between households with older and younger mothers, the number of children increasing with increased age of the mother, but on a diminishing rate as age increases. This result supports expectations that a woman is likely to get more children as her life evolves, therefore, she is expected to have more children after some years of marriage

than in early years of marriage. In addition, this could be an indication that younger generations may view fertility choices different from older ones. This is further supported by the results of age of head indicators, as households with older heads are found to have higher tendencies towards fertility.

Different from findings in Chapter 4, assets appear important in 3SLS estimations and one reason for this could be that a rather more comprehensive indicator of assets (asset index) is used compared to ownership of land in the first empirical chapter. Estimation of poverty, remittances and fertility simultaneously could be another reason. The results suggest that households with more assets have higher consumption/welfare. An increase in the adult male ratio is found to increase consumption supporting expectations that in general male adults have better access to productive assets such as education, employment opportunities and earnings than females.

Differences between ethnic groups are not found to be important in terms of consumption providing no indication for different labour market outcomes or access to production factors between Albanian and other ethnic groups. Results support expectations that in countries such as Albania with almost no social benefit schemes, presence of chronic ill members has a negative influence on household welfare - reduces per adult equivalent consumption.

Surprisingly and different from findings in Chapter 4, living in urban areas is found to lower consumption levels compared to living in rural areas. This result is however in line with poverty figures (Section 3.2.1). Rural poverty rates have significantly decreased over the last years whereas in 2012 the rate is reported to have increased in urban areas. This could be a result of increased efforts towards rural development and the phenomenon of population shifts from rural to urban areas; in addition, the aftermath of the crises is considered to have mainly impacted the urban areas (INSTAT and World Bank, 2015b). Another reason could be that other factors that would capture the higher consumption potential of urban households are already controlled. Besides, rural households may relatively be in a better position in terms of consumption compared to urban ones. Differences however are evident across regions where residing in other regions compared to Tirana is found to decrease consumption.

Female-headed indicator is found to be important only in terms of remittance receipt and in

accordance with expectations female heads are more likely to receive remittances compared to male ones. This result can be interpreted as a support for female heads in absence of strong social safety networks (Pfau and Giang, 2010). Another reasons could be the greater strength of children's ties with their mothers than with their fathers (Niimi et al., 2008; Carling, 2008).

Also, different from Shehaj (2012), the results also suggest that having a chronic ill member increases probability of receiving remittances and one reason could be that the migrant feels responsible to support the household members especially in countries such as Albania with almost no social benefit schemes. This result is in line with findings of De la Briere et al. (1997; 2002). Consistent with the altruism motive, an increase in the dependency ratio increases the likelihood of receiving remittances supporting expectations that the migrant feels responsible for their welfare.

Moreover, it is found that ties of Albanian migrants have not decreased, on the contrary remain strong and seem to reflect better integration and higher experience in the host country of migrants in earlier waves hence their higher sending potential. Differences in likelihood of being a remittance recipient are evident only between households residing in the Mountain region and Tirana, the likelihood being higher for the former.

Similarly, results do not support expectations on different likelihood of receiving remittances between Albanian and other ethnic groups providing no support for arguments on different migration behaviour or stronger ties of Albanian Diaspora from those of other ethnic groups.

CHAPTER 7

CONCLUSIONS

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7.1 Introduction

Kosovo and Albania have recorded positive GDP growth rates over the last decade, nevertheless, poverty in both countries remains double figured and is one of the highest in Europe. According to the latest official estimates, 29.7 percent of the population in Kosovo are reported to live below the national poverty line in 2011. Similarly, despite a decrease in poverty rate over the last decade, around a quarter of population in Albania are reported to be poor in 2012. In addition, both countries have also recorded a large share of inactive population, which indicates the high under-utilization of capacities and persistent high unemployment rates especially, among females and the youth.

Both countries have experienced large migration flows in the past hence have a sizable Diaspora. Remittances are one of the main sources of income and are reported to be overwhelmingly used for basic consumption. Thus migration and remittances are considered to have been an effective mechanism for mitigating poverty. The population of Albania has experienced a decreasing trend following the fall of Communist regime, with migration and fertility decline being the main reason behind the fall. Unlike most of Europe and Albania, the population of Kosovo is still growing, albeit at a slower pace and the population is young as more than half of population are reported to be under 25 years.

This thesis aimed to investigate the determinants of poverty in Kosovo and Albania with specific focus on the effect of education. Although there is a growing interest on research related to correlates of poverty in the SEE countries context, to our best knowledge to date there is no study concerned with the effect of education on poverty in Kosovo and Albania. The main hypothesis is that increased levels of education decrease poverty risk (increase consumption), the effect being higher for higher levels of education attained.

Both countries have continuously recorded high rates of poverty over the last decade. Despite its relevance however, the issue of poverty is under-researched in both countries similar to other Western Balkan countries. Hence, investigating the determinants of poverty and the effect of education in particular, in Kosovo and Albania is highly relevant. To the best of our

knowledge, to date there is no study that investigates the effect of education on poverty in Kosovo and Albania.

Although no major differences are expected, Kosovo and Albania share a number of similarities and characteristics that make the investigation of poverty determination interesting. Both countries have undergone in-depth restructuring of the economy and have a similar background in terms of labour market characteristics and education system. Large scale of informality is also a characteristic of both countries. Moreover, the labour market institution set-up is similar as both countries have a minimum wage setting system. Wages are reported to be higher in Kosovo than in Albania which suggests that labour market rewards education more in the former country than the latter; hence, the magnitude of the effect of education on poverty could be higher in Kosovo than in Albania. One reason for this could be that wages are higher in Kosovo than in Albania. Also, the extended presence of international institutions in Kosovo may also constitute an important source of differences in the wages between the two countries.

To that end, the main hypothesis is further elaborated into six main questions. How is poverty defined and measured and which are the most appropriate definitions and measures most relevant for this study?. Are there strong theoretical grounds concerning the relationship between education and poverty? Is there an explicit theory of poverty in economics and does the literature provide a fully articulated conceptual approach to investigate the determinants of poverty?. Given the theoretical suggestions/review, what is an appropriate empirical framework for investigating the impact of education on poverty in Kosovo and Albania?. To what extent have the education levels affected the poverty rates in Kosovo and Albania?. Does the theoretically expected simultaneous determination of poverty, remittances and fertility empirically hold (when using appropriate techniques that account for their simultaneous determination)?. In addition to its direct effect, does education affect poverty via different channels?. Based on the answers to the above questions, what education policy guidelines can be recommended so as to improve economic conditions in Kosovo and Albania? Shall the policy proposals be universal, or is there a need to treat Kosovo and Albania differently?

This chapter is organized as following: Section 7.2 recapitulates main findings of the thesis and its main contributions to the existing knowledge in the literature whereas Section 7.3

provides a set of policy recommendations for poverty reduction. In addition, Section 7.4 acknowledges the limitations of the thesis and provides implications of the findings for future research.

7.2 Main findings and contribution to knowledge

Aiming to address the first research question, namely to identify the most appropriate definitions and measurements of poverty for this study, Chapter 1 provides a review of different approaches to defining hence measuring poverty. Poverty is argued to have a multidimensional nature which has resulted in several definitions and measurement approaches which are mainly grouped according to the concepts that they embed. The discussion on the main approaches to defining poverty indicates that all approaches have their advantages and disadvantages. This thesis explicitly acknowledges the multidimensional nature of poverty and the importance of taking into consideration its various dimensions during its measurement. An absolute monetary approach is used to measure poverty considering the nature of the data, its simplicity as well as its use by several international organizations. The absolute monetary measure of poverty is also officially used to measure poverty in Kosovo and Albania; and this approach is considered appropriate given both are lower-middle income countries in which a considerable share of the population cannot meet basic consumption needs. The monetary approach is operationalized by poverty lines which are estimated using the cost-of-basic-needs methodology. Poverty line is set at €1.72 per adult equivalent per day in Kosovo whereas at 35€ per capita per month in Albania. The empirical models are estimated using data from the Kosovar Household Budget Survey 2011 and the Albanian Living Standard Measurement Survey 2012.

This thesis makes several contributions to existing theoretical and empirical literature on the determinants of poverty and the effect of education on poverty.

Pursuing the second research question, Chapter 2 explores whether there is an explicit theory of poverty in economics and whether the literature provides a fully articulated conceptual approach to investigate the determinants of poverty. A preliminary review of the studies, suggests that the theoretical basis of many studies is not made explicit and that there is no single unified theory of poverty. Hence, the literature does not provide a fully articulated

conceptual approach to investigate the determinants of poverty. That said, in Chapter 2 an untraditional approach in reviewing the literature is adopted. Although not a usual approach, the first section is concerned with the empirical review. The review concentrates on issues that are important for development of the model to be used in empirical analysis, as well as identifying issues that have not been investigated empirically and according to theory may be important.

Following the empirical review, theories related to measurement of welfare are reviewed. The economic theory of consumer behavior provides the basis for welfare measurement and its uses in economic analysis. According to traditional economic consumer theory, the objective of the individual is to maximize utility. Utility is a construct that represents nothing other than household welfare. Since utility is unobservable, for the purpose of empirical analysis an indirect indicator is used instead. Household consumption is a good candidate as it is both measurable and a good indicator of household welfare. Using duality in consumer theory, cost/expenditure function is used as a representation of preferences instead of utility function. Since consumer theory is formulated at individual level whereas living standard measurement datasets provide consumption at household level, utility of the household members is represented by a single household utility function known as the unitary approach. The unitary approach assumes that a household, even if it consists of different individuals, acts as a single decision-making unit. This is the approach taken in this thesis as well given the nature of Kosovan HBS 2011 and Albanian LSMS 2012.

Besides, the theories related to structural relations that affect welfare are reviewed, which provide the basis for the choice of the modelling approaches and the selection of independent variables in this thesis. In addition to this, there are many studies in the literature that discuss how each of these decisions relates to poverty and vice versa as theories seems to suggest that poverty, remittances and fertility are interrelated. Human capital theory provides the grounds concerning the relationship between education and income hence poverty. More precisely, it suggests that education is expected to increase consumption and decrease poverty risk and the effect is expected to be higher, the higher the level of education attained. In addition to education, theories of migration and theory of household fertility decisions highlight the importance of these two in terms of income hence household welfare/poverty. Moreover, these theories and many studies in the literature suggest that poverty, remittances and fertility are simultaneously determined. This said, an important contribution of this thesis is that in

efforts to answer the third research question it synthesizes the existing theories and empirical evidence into a conceptual and empirical framework for investigation of the links and joint determination of poverty, remittances and fertility.

Most empirical studies investigate the determinants of poverty at household level and this is the approach adopted in this thesis as well. Also in general the consumption and poverty approach are most commonly used by studies due to complementarity understanding deriving from them; whereas only few studies have adopted the quantile approach; although none of these studies focuses on Kosovo and Albania. To explore the fourth research question both consumption and poverty models are initially estimated utilizing OLS and Probit techniques, respectively. In addition, Quantile regressions are also estimated to account for non-linearities and to investigate the determinants of poverty across the entire consumption distribution and given this approach has been adopted only by few studies. However, due to expected causal determination of poverty, remittances and fertility the effect of endogenous variables is controlled by using only pre-determined and exogenous indicators/proxies. Given the focus of the thesis, regressions are estimated using four different education measures – one at a time - given the education attainment of the head might not be the most appropriate. Therefore, in addition to education of the head, indicators of maximum level of education attained in the household, share of adult members with respective education attainment and mean years of education of adults are considered given they tend to better reflect the role of education on poverty.

Theory also emphasizes the important role of education in terms of remittances and fertility in addition to poverty; suggesting that education affects poverty via different channels. Since the review suggests that poverty, remittances and fertility are jointly determined estimating each equation separately would produce inconsistent and biased estimates hence should be treated jointly. Many studies in the literature have been concerned with determinants of poverty or have estimated the relationship between poverty migration and remittances or poverty and fertility; however, to our best knowledge there is no study that estimates the simultaneous determination of poverty, remittances and fertility. This said, Chapter 5 develops a model to estimate the three relationships within a simultaneous equations system and investigate the impact of education on poverty from different channels; which is another important contribution of this thesis. To this purpose, Three Stage Least Squared (3SLS) estimation technique is utilized. 3SLS combines the properties of two-stage least squares

(2SLS) with seemingly unrelated regressions (SUR). Therefore, an advantage of 3SLS approach is that endogenous variables are also allowed to appear on right hand sides of equation hence direct indicators are used in the estimations instead of their proxies. Due to limitations of Kosovar dataset this analysis is done only for Albania.

The system of equations contains a set of three simultaneous equations namely, the determinants of fertility, remittances and poverty equations. The approach requires that each equation include one or more variables, which are theoretically considered to determine its dependent variable and not the other endogenous variables in the system (other dependent variables) known as instruments. Informal employment indicator is used as an instrument for consumption, migration network proxy and migration period dummies are used as instrument for remittances whereas a measure of contraceptive use in the region as well as religion are used as instruments for fertility.

The results of the empirical analysis, in both Chapter 4 and 6, provide answers to fourth and fifth research questions, respectively. More precisely, Chapter 4 explores the extent to which education levels affect the poverty rates in Kosovo and Albania; whereas Chapter 6 investigates whether the theoretically expected simultaneous determination of poverty, remittances and fertility empirically holds and if as expected education affects poverty via different channels.

As it is discussed in more details below, the empirical analysis in both chapters indicate that education reduces poverty risk and increases consumption in Kosovo and Albania, irrespective of the estimation technique used. Moreover, the results suggest that theoretical expectations regarding simultaneous determination of poverty, education and fertility hold empirically and in addition to its direct effect, education affects poverty also via affecting fertility decisions.

More precisely, more education is found to increase consumption and decrease likelihood of being poor. This is in line with findings of other studies in the literature (Garza-Rodrigues, 2016; Olaniyan, 2002; Mukherje and Benson, 1998; Glewwe, 1991; Geda et al., 2005; Jamal, 2005; Fagernas and Wallace, 2006; Bruck et al., 2007; Githinji, 2011). In line with theory, returns to education are found to be non-linear, the effect being higher for higher levels of education; suggesting that more educated individuals earn more than their counterparts hence

contribute more to household consumption/welfare. Although returns to education are found to be positive for both countries, the results suggest that labour market tends to reward education more in Kosovo. One reason could be the higher wages in public sector in Kosovo which according to IMF (2015) since independence are considered to have outpaced not only private wages in Kosovo but even the public wages of other Western Balkan countries. Kosovo is also considered to experience a high skill premium, with the salaries of postgraduate degree holders being almost double that of those holding a bachelor degree (UNDP, 2014c). In addition, from the post-conflict period international missions have been present in Kosovo, and offer wages considerably higher than average wage in the country (Koetter and Schuppert, 2010).

The quantile regression results also confirm the importance of education in terms of welfare and the impact of tertiary attainment being considerably higher than that of secondary attainment. The results also indicate that the estimated mean returns to schooling for Albania is not representative of the effect secondary education attainment has on consumption of households across the consumption distribution; as having secondary education compared to less than primary or primary matters only for households at 50^{th}-80^{th} percentiles. It is only tertiary education attainment that improves the welfare of the poorest households in Albania.

Moreover, although having tertiary compared to less than primary education improves consumption/welfare of household across the whole distribution, the benefits are largest for the poorest households in Kosovo whereas for the richest in Albania. Hence an increase in investment and access to tertiary education without particularly targeting the poor may increase inequality in Albania since education is a better investment for the better off. Increasing education in Kosovo on the other hand is most beneficial for the poorest suggesting that educational opportunities should be expanded for this group of households.

Higher returns to education of individuals from poor households in Kosovo could due to their unobserved ability which cannot be controlled in the analysis. A possible explanation for higher effect of tertiary education on the richest in Albania could be that, individuals from richer households are more likely to have better connections and have more people belonging to their social network that occupy highly paid jobs. This as a result, may help them get better paid jobs than their poor counterparts hence contribute more to household welfare – have higher consumption.

Regarding indirect effect of education on poverty, the simultaneous estimation results suggest that education affects poverty also via fertility although only father's education attainment is found to matter; however, the link via remittances does not hold. The findings regarding father's education do not support expectations that more educated fathers may prefer investing more in children rather than having more children. On the contrary, it is found that compared to households with less educated fathers, having highly educated ones increases number of children in Albania. This result is in line with Bhaumik and Nugent (2005) whereas in contrast to Imai and Sato (2013) and Tadesse and Asefa (2002) as their findings suggest that increased education of father reduces fertility.

Surprisingly, mother's education is not found to be important even in fertility equation despite theoretically being considered as one of the most important determinants of fertility; suggesting that there are no significant differences in fertility attitude between households with less educated and more educated mothers. One reason for this finding could be the traditionally low labour market participation of women in Albania. In contrast, Aassve et al. (2006) and Lerch (2013) find evidence to support the importance of female education in reducing fertility in Albania.

The results regarding the effect of mother's employment on fertility are in line with those of father's education; suggesting that as income generation prospect improves couples tend to have a preference for a higher number of children. In other words, in households where mothers are generally employed the number of children is higher compared to those where in general mothers are not employed. This result suggests that there are arrangements that allow women to combine both work and childbearing. It also supports the argument that family policies which reduce the direct or indirect (opportunity) cost of children increase fertility (Gerseter and Lappegård, 2010). Two central components in the Albanian setting are the paid annual leave and child support from household members. According to Code of Labour women are entitled to one year paid maternity leave which can be extended to 390 days if another child is born. It is an unspoken social norm in Albania that other mothers in the households such as mothers-in-law or sisters-in-law and even grandparents will help with a new baby for years to come (Gorenca and Milo, 2012).

Estimates also support expectations regarding the effect of remittances and fertility in terms of consumption and poverty. The importance of mother's education –as a proxy to fertility- has been underlined by results across the three estimates and for both countries. The

households with less educated mothers are found to have a lower level of consumption and higher poverty risk. The results may support expectations that less educated mothers have a higher number of children which consequently is expected to reduce the share of consumption available to each household member. Nevertheless, as it is noted below in more detail, the simultaneous estimation results do not find evidence to support this. However, the indicators of mother's education may also account for its effect on household consumption however it is not possible to make such a distinction given the nature of the data.

As expected, migration is found to reduce the risk of poverty and increase consumption in both Kosovo and Albania. This result is similar to findings of other studies in the literature (Shehaj, 2012; Shaorshadze and Miyata, 2010; World Bank; 2007; Mollers and Meyer, 2014). The quantile regression results for Kosovo confirm theoretical expectations that poorest households cannot afford migration whereas the rich ones may not do so as they have fewer incentives to migrate. This also suggests that the poorest households in Kosovo may not be able to benefit from migration unless if they receive remittances from non-family members.

In line with the estimates of the first empirical chapter, the simultaneous equation results also highlight importance of remittances and fertility in terms of consumption in Albania and confirm the theoretical expectations on joint determination of poverty, fertility and remittances. More precisely, remittance receipt is found to improve household consumption, further reinforcing the importance of migration and remittances in terms of household's welfare in Albania. An increase in fertility, as expected, is found to decrease per adult equivalent consumption/welfare. An increase in the number of children is expected to decrease the share of household resources available for each member, as a result decreasing the overall welfare of the household. On the other hand, improved welfare is also found to increase likelihood of receiving remittances supporting inheritance motive behind remittances. This result may also support expectations that households need to have a certain level of income to be able to send migrants abroad. Another explanation could be that remittances are sent with more than one motive in mind (known as tempered altruism) meaning altruism dominates when household is in need for remittances however the migrant continues to remit after the welfare improves having the inheritance motive in mind as well.

An increase in consumption/income is found to decrease the number of children indicating

that as the income increases, the couple prefers less but higher quality children (invest more in them). However, given welfare is approximated by consumption, another interpretation could be that as cost of living increases, so households spend more on per adult equivalent consumption, they cannot afford having more children.

Results also confirm expectations on causality between remittances and fertility. An increase in fertility is found to increase probability of sending someone abroad and receiving remittances, supporting theoretical expectations that larger households are more likely to have someone abroad and receive remittances. Being a remittance recipient household also increases the average number of children to a family; confirming the expectations that remittances expand financial resources available to couples.

The findings for other indicators are mostly in accordance with theoretical predictions. Employment in informal sector is found to be important only in terms of consumption and the results confirm both lines of theory. Although, it is not preferred to formal employment in terms of working conditions and the earning potential, informality seems to be improve welfare of the poor in Kosovo and this could be a result of persistently high unemployment rates in Kosovo and the returns to education primarily being in terms of employment premium (Hoti, 2011). However, it is not enough to pull households out of poverty. In Albania, this does not seem to be the case as the results highlight the negative (undesirable) impacts of informal employment in Albania (at the top end of the distribution).

The results also confirm the expectations regarding unemployment in terms of consumption and poverty for both countries and the strong link is also confirmed by quantile regression results. As expected, households with higher number of unemployed adults are found to have a higher poverty risk and lower consumption and as expected the effect is higher for increased number of unemployed members. However, when simultaneity between poverty, remittances and fertility is taken into account results do not provide evidence on the effect of informal employment and unemployment of adult members on consumption in Albania.

Differences in consumption and poverty risk amongst regions are found to be important in both countries. Residing in other region (except for Gjakova) rather than Prishtina lowers consumption level and increases poverty risk and differences in general are also confirmed by quantile regression results. In terms of Albania differences between households residing in

regions other than Tirana are evident and hold across all estimates however, only at certain consumption quantiles. The differences could be due to better opportunities in labour market given most of public institutions, large enterprises, international missions are located in the capital cities. Differences in likelihood of being a remittance recipient are evident only between households residing in Mountain region and Tirana, the likelihood being higher for the former.

Results suggest that poverty is widespread in both countries as there are no significant differences in terms of poverty risk between rural and urban areas. In terms of consumption results indicate that urban households have higher consumption compared to rural ones in Albania although no significant differences in consumption behaviour are found amongst (poorest) households at lowest quantiles. However, when simultaneity between poverty, remittances and fertility is taken into account the opposite effect is found namely, that urban households have lower levels of consumption compared to rural ones. This result is in line with the descriptive analysis in Chapter 3. The data suggest that rural poverty rate in Albania has considerably decreased over 2002-2012 period whereas urban poverty has increased in 2012. This could be a result of increased efforts towards rural development and the phenomenon of population shifts from rural to urban areas; in addition, the aftermath of the crises is considered to have mainly impacted the urban areas (INSTAT and World Bank, 2015b). Another reason could that other factors that would capture the higher consumption potential of urban households are already controlled. Besides, rural households may relatively be in a better position in terms of consumption compared to urban ones.

As expected, households with chronic ill members are found to have lower consumption compared to those without them and this result holds across all estimates. Also, different from Shehaj (2012), the results also suggest that having a chronic ill member increases probability of receiving remittances and one reason could be that the migrant feels responsible to support the household members especially in countries such as Albania with almost no social benefit schemes. This result is in line with findings of De la Briere et al. (1997; 2002). In addition, findings also confirm expectations that presence of chronic ill members reduces poverty.

Assets appear important only in 3SLS estimations and one reason for this could be that a rather more comprehensive indicator of assets (asset index) is used compared to ownership of

land in the first empirical estimates. Estimation of poverty, remittances and fertility simultaneously could be another reason. The results suggest that households with more assets have a higher welfare in Albania; and also have higher levels of fertility which supports expectations that assets add to family resources whereas are not expected to affect the relative opportunity cost of children to parents.

Preference for sons is confirmed to be a phenomenon among households in Albania indicating that couples that have a preference for boys are likely to have higher number of children as they may keep trying until they have a male child. In addition, the results confirm different attitudes towards fertility between households with older and younger mothers, the number of children increasing with increased age of the mother, but on a diminishing rate as age increases. This result supports expectations that a woman is likely to get more children as her life evolves, therefore, she is expected to have more children after some years of marriage than in early years of marriage. In addition, this could be an indication that younger generations may view fertility choices different from older ones. This is further supported by the results of age of head indicators, as households with older heads are found to have higher tendencies towards fertility.

An increase in social capital is found to increase household consumption and decrease the likelihood of receiving remittances. In addition, increased social capital is also found to increase the number of children and this result is in line with findings of other studies in the literature (Philipov et al., 2006; Bühler and Fratzcak, 2005; Philipov and Shkolnikov, 2001; Di Giulio et al., 2012). This could be a result of informal childcare provided or potential monetary and non-monetary support from friends and relatives. By possessing more social capital, couples may be more likely to realize fully their fertility intentions as they may feel more secure given higher perceived social capital might help reducing uncertainty and costs of childbearing (Balbo and Mills, 2011; Philipov et al., 2006).

The results also suggest that ties of Albanian migrants have not decreased, on the contrary remain strong and seem to reflect better integration and higher experience of earlier migrants in the host country hence higher sending potential. In terms of household demographic characteristics, results stress higher likelihood of receiving remittances for households with higher dependency ratio whereas an increase in adult male ratio is found to increase fertility and consumption.

7.3 Policy recommendations

Based on the findings of the empirical analysis developed in this thesis and aiming to address the sixth research question, a set of policy recommendations aiming at poverty reduction in Kosovo and Albania are proposed.

- The estimates provide strong evidence on the importance of education in improving the standard of living and reducing poverty risk in Kosovo and Albania. Thus, increasing investment and improving access to education is an important tool for poverty reduction and increasing welfare. Moreover, the exploration of the effect of education across different parts of consumption distribution suggests that the effect of education on consumption is highest for the poorest in Kosovo; which implies that reducing poverty may require increasing educational opportunities for the poor. The results for Albania however suggest that it is only tertiary education attainment that improves welfare of the poor households in Albania. Moreover, the returns to education are highest for the better off households; suggesting that increased education increases inequality in Albania. This said, investments in education should be carefully pursued as to prevent their concentration in the areas of higher income. More precisely, strategies for poverty reduction should incorporate investment in education and improving access to education for the poor –particularly tertiary education in Albania.

- The results also suggest that unemployment increases poverty risk and decreases consumption in Kosovo and Albania. Hence, investment in education is preferable but on its own may not be enough given the high unemployment, unless new jobs are created. To this purpose, government should support activities that stimulate job creation. Amongst other, government should create an enabling business environment that supports investments and growth of the private sector as well as eliminate barriers to investment such as corruption, bribe culture, effective rule of law as well as administrative bureaucracy. It is of high importance to also develop policies and offer incentives that stimulate and support production due to its potential for job creation; particularly in Kosovo as it is largely dependent on imports and has continuously recorded a large trade deficit.

- In addition, educated individuals also should be able to find jobs fitting to their level of education attained; as skills mismatch may raise (long-term) unemployment rates (Barlett, 2013). Thus, authorities should examine and identify the professions as well as skills that are in short supply compared to the demands of the labour market. This should then be followed with a scheme which ensures that in long-term workers with appropriate qualifications and skills are matched to vacancies available in the labour market.

- Given households in some regions are found to have a higher likelihood of being poor compared to capital city, poverty reduction policies should tackle poverty particularly in (certain) poorer region. Yet, the policies should be formulated based on detailed analysis of the poverty and development characteristics of the regions.

- Although families with more educated couples and employed mothers are expected to prefer investing more in their children rather than having a higher number of children, the results do not provide support for these expectations. Increased education of father and employment of mother are found to increase fertility suggesting that couples prefer having a higher number of children as their income generation prospect improves. On the other hand, an increase in fertility is found to lower consumption and increase poverty risk in both Kosovo and Albania. This highlights the need for better awareness and knowledge regarding importance of family planning. Hence, the policy-makers should consider offering direct support which entails provision of family planning services through public facilities/institutions such as hospitals, clinics and health centres as well as awareness campaigns.

- The results also confirm the importance of migration in terms of welfare in both countries; and poverty reducing effect of remittances in Albania. Thus, strategies and policies for poverty reduction can incorporate migration management more precisely, seasonal migration schemes or agreements and this policy can particularly have poorest regions at its focus. Although not a major concern in this thesis, both countries and Kosovo in particular experienced large illegal fluxes of migration during the last years. More precisely, according to Eurostat data, Kosovo and Albania

are the top five countries with highest number of asylum seekers in 28 EU countries in 2014 and 2015. Hence, seasonal migration opportunities could help diminish the occurrence of illegal fluxes of migration in the future. To ensure a better effectiveness, this policy should be formulated based on detailed analysis of poverty, migration and development characteristics of the regions but also the actual skills of the potential migrants to ensure whether such skills match those needed in the host country. Moreover, given the results suggest that the poorest may not afford migration in Kosovo, the government (with the help of donors) can consider supporting seasonal migrants from poor households by subsidizing their travel and/or social insurance in the destination country.

- As noted in more detail in Section 3.2.4 remittances in Kosovo and Albania are generally geared towards consumption and a very small portion of remittances is directed towards productive investments. The effect of remittances is higher and sustainable if they are invested in productive assets yet, what is productive may also depend on the welfare of the household. If it is richer households that in general receive more remittances than there are means to encourage their investments. However, if remittances are sent to poor households then they are more likely to be used for consumption and it is less probable that they will be sufficient to be channelled in feasible investments as well. The data indicate that in Kosovo and Albania it is generally households at top quantiles that receive remittances suggesting that there are means for channelling remittances in more productive investments. However, even if remittances mainly flow towards richer households or are invested by Diaspora directly, they may still affect the poor in the long-run through trickle-down effects of growth generated by the use of remittances.

7.4 Limitations and further research

This thesis has several limitations, and availability of the data and further research can be conducted to overcome them. One of the main limitations of this thesis relates to the restrictions of the datasets utilized in the analysis, the Kosovar HBS 2011 in particular. More specifically, the limitations lie in the design of the questionnaire as well as missing observations for certain indicators. For instance, the Kosovar HBS 2011 does not provide a direct indicator (question) of migration of household members that could be utilized, hence an indicator of presence of migrants is generated based on the receipt of remittances from household members during the last month. Yet, this proxy itself has some limitations as it is not the best indicator of migration given there could be households that have someone abroad but have not received remittances at the time of the survey. In addition, the Kosovar HBS 2011 does not provide information on indicators such as social capital, a migration module including year in which the member migrated and a detailed list of assets owned by household.

Indicators of informal employment are subject to limitations as well. For Albania, the question whether the individual is entitled to social security benefits has not been asked to all relevant groups of individuals, which may lead to underestimation of informality. The households in Kosovo have been asked if at least one of the members has paid income tax during the last month however, the self-employed and businesses are by law required to pay income tax on quarterly basis. Thus, there is a chance that at the time of survey they were not supposed to pay income tax, consequently are treated as informal. This said, it is desirable that in the future surveys ask this question to all types of employed individuals.

Also, the Kosovar dataset does not provide detailed relationship of the household members with the head. Hence it is challenging to identify families within the extended household and their members which is necessary to calculate indicators of fertility such as the number of children born to a family or mother's age at first birth. In the Albanian dataset, the relationship of household members with the head is detailed and clear except for the cases when more than one additional family lives in the household.[130] In that case, such households

[130] See Appendix 5 for more details as to how extended households are identified.

are listed and couples from additional families and their children are identified based on characteristics such as age and education attainment.

Further to the limitations listed above, another limitation relates to missing information for a small share of households regarding indicators such as education, informal employment or remittance receipt which is discussed in more detail in Section 4.3. Moreover, it is not clear the respondents refused to answer or that none of the alternative answers were applicable. For this reason, it is desirable to include another option in the questionnaire that addresses this limitation in the future.

This said, there are two main implication deriving from the limitations briefly discussed above. First, given Kosovar HBS 2011 is rather more limited than the Albanian LSMS 2012, for the sake of preserving comparability, the analysis in the first empirical chapter is restricted in using only information that is available for both countries. Second, given the limitations of the Kosovar datasets, the analysis on simultaneous determination of poverty, remittances and fertility is performed only for Albania. Thus it is desirable to estimate the analysis for Kosovo as well to assess whether the simultaneity between poverty, remittances and fertility holds for Kosovo and also whether education affects poverty from other channels as well.

Also, due to lack of data it is not possible to account for regional price differences in Kosovo analysis. Accounting for wage differences in addition to prices is also important but data restrictions again do not permit controlling for such differences in the analysis for both countries. Availability of data in the future would help account for such differences and as a result more accurate indicators of poverty. Having said this, it is proposed that the statistical agencies ensure that in the future the design of the survey addresses the abovementioned limitations and reflects the data requirements necessary to evaluate policy questions using methodologies such as those used in this thesis.

In addition to data restrictions, of note are also the limitations related to the estimation technique used for estimating the simultaneous determination of poverty, remittances and fertility. More precisely, 3SLS requires the same units of observation in each equation. Due to the necessity to restrict the sample on the fertility equation consequently the same restriction is applied for the other two equations as well.

Another issue related to fertility indicator is that it is a count variable whereas in 3SLS responses are continuous and unbound and only generalized linear models with a Gaussian error distribution can be modelled. As a result, fertility equation cannot be estimated using appropriate techniques that deal with count data. However, this limitation is unlikely to have had any major implications for the analysis as the distribution of the fertility indicator (number of children born to a family) is slightly skewed but still close to normal distribution. Furthermore, as the sample is large, the error term can still be close to normal distribution. Similarly, the remittance receipt indicator takes only values of zero and one hence, is treated as Linear Probability Model although it would be more appropriate to model it with Probit or Logit estimators.

The data suggest that disparities in poverty rates, migration and remittance receipt are evident across regions in both Kosovo and Albania. Given it is beyond the scope of this thesis, in future research the same analysis can be extended to estimate the determinants of poverty as well as simultaneous determination of poverty, remittances and fertility at regional level. Hence, it might be interesting to investigate whether the determinants of poverty and the effect of education in particular are different across regions given some regions face lower levels of education and employment and also are more disadvantaged in terms of climate and natural resources, etc.

It is generally acknowledged that poverty is not a pure static phenomenon since the poor is a human being that is growing and changing over time (Muller, 2002; Chant, 2003; INE, 2007; Dercon and Shapiro, 2007 in Teguh and Nurkholis, 2011). There is always a chance that at some point, in the future, households who are currently not poor may fall below the poverty line and this could be due to events such as crop loss, job loss, death and other shocks. However, there are also possibilities for households who are currently poor to escape from poverty due to gaining employment or a better job (Fields et al., 2003; Kedir and McKay, 2005; Dartano and Nurkholis, 2013), and improving infrastructure (Dartano and Nurkholis, 2013).

Empirical investigations of poverty in developing countries, in general, focus on the incidence of poverty at a particular point in time, which is the case with this thesis as well. This is largely dictated by the available data source, usually, extracting data from a household income or expenditure survey, which provides a snapshot picture of household welfare and poverty (at most over a one-year reference period). However, in addition to examining the

determinants of poverty and the effect of education in particular, it is also important to investigate the factors behind changes in poverty status and the characteristics associated with a higher probability of falling into this condition, as well as those related to leaving it behind. In other words, assessing what characteristics differentiate those who escape poverty from those who remain poor.

A limitation of examination of poor at one specific point in time is that there is no information about how many new poor have joined the existing poor and how many poor have escaped poverty. With this said, this research would be improved if the effect of education on dynamics of poverty rather than at a specific point in time is investigated. However, both the Albanian LSMS and the Kosovar HBS are cross- section dataset and this type of analysis requires longitudinal (panel) data. Repeated cross-section dataset could add some value in cases of unavailable panel however still does not allow exploring dynamics of poverty. Repeated cross-section datasets could be utilized in future research for exploring and comparing the effect of education on poverty or determination of poverty at different periods in time.

Given that some regions are more developed than others, hence have different poverty levels, the migration patterns and remittance receipt, differ across regions in both Kosovo and Albania, it is also important to investigate the spatial determinants of poverty and the joint spatial determination of poverty, remittances and fertility. In addition, employment opportunities may differ across regions and education may be rewarded differently. Hence, in future research it is also important to explore the effect of education on poverty across regions. The Albanian LSMS is representative at regional level and allows developing such analysis whereas to date that is not possible with the Kosovan HBS.

Finally, a separate analysis on the impact of education on inequality would also help in formulating better redistributive policies.

REFERENCES

Aassve, A., Burgess, S., Dickson, M., and Propper, C., 2005. Modelling Poverty by not Modelling Poverty: An Application of a Simultaneous Hazards Approach to the UK. Centre for Market and Public Organisation, University of Bristol, *Working Paper,* No. 05/134.

Abadian, S. (1996). Women's autonomy and its impact on fertility. *World Development*, Vol. 24(12), pp.1793-1809.

Achia, Th., Wangombe, A., and Khadioli, N., 2010. A Logistic Regression Model to Identify Key Determinants of Poverty Using Demographic and Health Survey Data. *European Journal of Social Sciences,* Vol. 13(1), pp. 38-45.

Acosta, P., Fajnzylber, P., and Lopez, H., 2007. The Impact of Remittances on Poverty and Human Capital: Evidence from Latin American Household Surveys. World Bank Policy Research, *Working Paper,* No. 4247.

Acosta, P., 2007. What is the Impact of International *Working Paper* Remittances on Poverty and Inequality in Latin America?. The World Bank, *Working Paper,* No. 4249.

Adams, R. H., Cuecuecha, A., and Page, J., 2008. The Impact of Remittances on Poverty and Inequality in Ghana. The World Bank Development Prospect Group, Development Economics Department. *Policy Research Working Paper*, No. 4732.

Agrawal, R., and Horowitz, A.W., 2002. Are International Remittances Altruism or Insurance? Evidence from Guyana Using Multiple-Migrant Households. *World Development*, Vol. 30(11), pp. 2033-2044.

Agarwal, M., and Dhakal, R., 2009. Socio-economic Determinants of Income Generation in the Informal Sector of Nepal – A Case of Chitwan District. Paper prepared for the Special IARIW-SAIM Conference on Measuring the Informal Economy in Developing Countries, Kathmandu, Nepal, 23-26 September.

Alkire, S., and Foster, J., 2007. Counting and Multidimensional Poverty Measurement. Oxford Poverty and Human Development Initiative OPHI, *Working Paper,* No.7.

Alkire, S., and Santos, M. E., 2010. Acute Multidimensional Poverty: A New Index for Developing Countries. *Human Development Research Paper,* No. 2010/11.

Alkire, S., 2011. Multidimensional Poverty and Its Discontents. OPHI, *Working Paper,* No. 46.

Al-Riyami, A., Arifi, M.M., and Mabry, R., 2004. Women's Autonomy, Education and Employment in Oman and their Influence on Contraceptive Use. *Reproductive Health Matters,* Vol. 12(23), pp.144-54.

Al-Qudsi, S., 1998. The Demand for Children in Arab Countries: Evidence from Panel and Count Data Models. *Journal of Population Economics*, Vol. 11(3), pp.435-452.

Ambrosius, Ch., and Cuecuecha, A., 2013. Are Remittances a Substitute for Credit? Carrying the Financial Burden of Health Shocks in National and Transnational Households. *World Development*, Vol. 46, pp.143-152.

Amin, S., Casterline, J.B., and Spess, L., 2007. Poverty and Fertility: Evidence and Agenda. Population Council, *Working Paper,* No. 4.

Arpino, B., and Aassve, A., 2008. Estimating the causal effect of fertility on economic. Dondena Centre for Research on Social Dynamics, *Working Paper*, No. 13.

Amuedo-Dorantes, C., and Pozo, S., 2006. Remittances as Insurance: Evidence from Mexican Immigrants. *Journal of Population Economics*, Vol. 19(2), pp.227-254.

Andersson, M., Engvall, A., and Kokko, A., 2006. Determinants of Poverty in Lao PDR. The European Institute of Japanese Studies (EIJS), *Working Paper Series*, No. 223.

Anand, S. and Sen, A., 1997. Concepts of Human Development and Poverty: A Multidimensional Perspective. In: *Poverty and Human Development: Human Development Papers*. New York: United Nations Development Programme; 1997.

Appleton, S., 1995. 'The Rich Are Just Like Us Only Richer' Poverty Functions or Consumptions Functions?. University of Oxford Centre for the Study of African Economies, *Working Paper Series*, No. 95-4.

Arpino, B., 2014. Estimating the effect of fertility on poverty in Vietnam: an example of causal inference with multilevel data in demographic research. Paper prepared for the Population Association of America Annual Meeting 2014, Boston, USA, 1-3 May.

Arvil, V., Johansson da Silva, S., and Razmara, S., 2013. *Improving Skills Development in the Informal Sector: Strategies for Sub-Saharan Africa*. Directions in Development. Washington, DC: World Bank.

Ashworth, J., and Ulph., D., 1981. Household model. in C. Brown (ed.), *Taxation and Labour Supply*. London, George Allen & Unwin.

Audet, M., Boccanfuso, D., and Makdissi, P., 2006. The Geographic Determinants of Poverty

in Albania. Groupe de Recherche en Economie et Developemment International, *Working Paper,* No. 06/12.

Awan, M., Malik, N., Sarwar, H., and Wawas, M., 2011a. Impact of Education on Poverty Reduction. *Journal of Sustainable Development*, Vol. 4 (1), pp. 143-150.

Awan, M. S., Nasir, I., and Waqas, M., 2011b. The impact of human capital on urban poverty: The case of Saragodha city. Munich Personal RePEc Archive (MPRA)*, Paper,* No. 31829.

Balbo, N., and Mills, M., 2011. The effects of social capital and social pressure on the intention to have a second or third child in France, Germany, and Bulgaria, 2004-05. *Journal of Population Studies*, Vol. 65(3), pp.335-351.

Barjaba, K., 2000. Contemporary Patterns in Albanian Migration. *South-East Europe Review*, Vol. 3(2), pp. 57–64.

Batista, C., and Umblijs, J., 2014. Do Migrants Send Remittances as a Way of Self-Insurance? Evidence from a Representative Immigrant Survey. Institute for the Study of Labour (IZA), *Discussion Paper,* No. 7984.

Baum, Ch.F., 2006. *An Introduction to Modern Econometrics Using Stata*. A Stata Press Publication, Texas, USA.

Baum, C.F., Schaffer, M.E., Stillman, S., Wiggins, V., 2006. overid: Stata module to calculate tests of overidentifying restrictions after ivreg, ivreg2, ivprobit, ivtobit, reg3. Stata. Accessed on 16.02.2016.

Barlett, W., 2013. Skill Mismatch, Education Systems, and Labour Markets in EU Neighbourhood Policy Countries. SEARCH, *Working Paper*, No. 5/20.

Becker, G., 1960. *An Economic Analysis of Fertility. In Demographic and Economic Change*, NBER. Princeton University Press for NBER, Princeton, NJ.

Becker, G., 1964. *Human Capital*. 2nd edition. Columbia University Press, New York.

Becker, G. S., 1992. Habits, Addictions, and Traditions. *Kyklos*, Vol. 45(3), pp. 327-345.

Becker, G.S., 1993. Nobel Lecture: The Economic Way of Looking at Behavior. *The Journal of Political Economy*, Vol. 101(3), pp.385-409.

Becker, G.S., and Lewis, H.G., 1973. On the Interaction between the Quantity and Quality of Children. *Journal of Political Economy*, Vol. 81(2), pp.279-288.

Becker, S.O., Cinnirella, F., and Woessman, L., 2012. Does parental education affect fertility? Evidence from pre-demographic transition Prussia. *Cliometrica,* Vol. 6(1), pp.29-44.

Behrman, J.R., 1995. The Action of Human Resources and Poverty on One Another What We Have Yet to Learn. The World Bank Living Standard Measurement Study, *Working Paper,* No. 74.

Bhaumik, S.K., Gang, I.N., and Yun, M., 2006. A note on poverty in Kosovo. *Journal of International Development*, Vol. 18(8), pp.1177-1187.

Bhaumik, S.K., and Nugent, J.B., 2005. Does Economic Uncertainty Affect the Decision to Bear Children? Evidence from East and West Germany. Institute for the Study of Labour (IZA), *Discussion Paper,* No. 1746.

Bhat, P.N. M., 2002. Demographic transition, family size and child schooling. National Council of Applied Economics Research, *Working Paper Series,* No. 86.

Blaug, M., 1985. Where Are We Now in the Economics of Education?. *Economics of Education Review,* Vol. 4(1), pp. 17-28.

Blouchoutzi, A., and Nikas, Ch., 2014. Emigrants' remittances and economic growth in small transition economies: The cases of Moldova and Albania. *Journal of Economics and Business*, Vol. 17(2), pp.97-117.

Blundell, S., 1993. *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education.* 3rd ed. Chicago: University of Chicago Press.

Blundell, R., Dearden, L., Meghir, C., and Sianesi, B., 1999. *Fiscal Studies,* Vol. 20(1), pp. 1–23.

Bollard, A., McKenzie, D., Morten, M., and Rapoport, H., 2009. Remittances and the Brain Drain Revisited: The Microdata Show That More Educated Migrants Remit More. Institute for the Study of Labour (IZA), *Discussion Paper,* No. 4532.

Boka, M., and Torluccio, G., 2013. Informal Economy in Albania. *Academic Journal of Interdiciplinary Studies*, Vol. 2(8), pp. 212-221.

Bohra-Mishra, P.B., 2014. Motivations to Remit - Evidence from Chitwan, Nepal. *Journal of Academy of Social Sciences*, Vol.9 (3), pp. 322-333.

Borici, A., and Gavoci, M., 2015. The impact of remittances on households wellbeing: Evidence from Albania. *International Journal of Economics, Commerce and Management,* Vol. 3(11), pp.80-103.

Bouoiyour, J., and Miftah, A., 2014. Why do Migrants remit? An insightful Analysis for Moroccan Case. CATT Université de Pau et des Pays de l'Adour (UPPA), *Working Paper,* No. 04.

Boucher, S., O., Stark, O., and Taylor, J.E., 2005. A Gain with a Drain? Evidence from Rural Mexico on the New Economics of the Brain Drain. UCD Department of Agricultural and Resource Economics, *ARE Working Papers*, No. 05-005.

Bourguignon, F., and Chiappori, P., 1992. Collective models of household behavior: An introduction. *European Economic Review*. Vol. 36(Issue 2-3), pp. 355-364.

Brajshori, M., and Jovanovic, I., 2013. Asylum seekers alarming for Kosovo officials. Southeast European Times [online] 23th July, Available at: http://www.setimes.com/cocoon/setimes/xhtml/en_GB/features/setimes/features/2013/07/22/feature-02.

Breierova, L., and Duflo, E., 2004. The Impact of Education on Fertility and Child Mortality: Do Fathers Really Matter Less Than Mothers?. NBER, *Working Paper,* No. 10513.

Browning, M., 2000. The saving behaviour of a two-person household. *Scandinavian Journal of Economics*. Vol. 102(2), pp. 235-251.

Bruck, T., 2001. Determinants of Rural Poverty in Post-War Mozambique: Evidence from a Household Survey and Implications for Government and Donor Policy. Queen Elizabeth House, University of Oxford, *Working Paper,* No. 67.

Bruck, T., Danzer, A., Muravyev, A., and Weißhaar, N., 2007. Determinants of Poverty During Transition: Household Survey Evidence from Ukraine. Institute for the Study of Labor (IZA)*, Discussion Papers,* No.3228.

Bühler, C., and Philipov, D., 2005. Social Capital Related to Fertility: Theoretical Foundations and Empirical Evidence from Bulgaria. Max Planck Institute for Demographic Research (MPIDR), *Working Paper,* No. 2006-016.

Bühler, Ch., and Fratczak, E., 2004. Social Capital and Fertility Intentions: The Case of Poland. Max Planck Institute for Demographic Research (MPIDR), *Working Paper*, No. 2004-012.

Cameron, C.A., and Trivedi, P.K., 2009. *Microeconomics using Stata*. Texas: USA. Stata Press.

Canagarajah, S., and Pörtner, C., 2003. Evolution of Poverty and Welfare in Ghana in the 1990s: Achievements and Challenges. The World Bank Africa Region, *Working Paper Series,* No. 61.

Carletto, C., Davis, B., Stampini, M., Trento, S., and Zezza, A., 2004. Internal Mobility and International Migration in Albania. FAO Agricultural and Development Economics Division, *Working Paper*, No. 04-13.

Carling, J., 2008. The Determinants of Migrant Remittances. *Oxford Review of Economic Policy*, Vol.24(3), pp. 581-598.

Castaldo, A., and Reilly, B., 2007. Do Migrant Remittances Affect the Consumption Patterns of Albanian Households?. *South-Eastern Europe Journal of Economics,* Vol.1(1), pp.25-54.

Chaudhry, I., Malik, Sh., Hassan, A., and Faridi, M., 2010. Does Education Alleviate Poverty? Empirical Evidence from Pakistan. *International Research Journal of Finance and Economics*. Issue 52. pp. 134-142.

Chant, S., 2003. New Contributions to the Analysis of Poverty: Methodological and Conceptual Challenges to Understanding Poverty from a Gender Perspectives. Women and Development Unit, United Nations, Santiago, Chile.

Chambers, R., 1994. The Origins and Practice of Participatory Rural Apprisal. *World Development,* Vol. 22(7), pp.953-969.

Chambers, R., 1997. *Whose reality counts? Putting the first last*. London: Intermediate Technology Publications.

Chevalier, A., Harmon, C., Walker, I., and Zhu, Y., 2004. Does Education Raise Productivity or Just Reflect it?. *The Economic Journal*, Vol. 114(499), pp. 499–517.

Chiappori, P., 1992. Collective Labor Supply and Welfare. *Journal of Political Economy,* Vol. 100(3), pp.437-467.

Chiappori, P., 1997. Introducing Household Production in Collective Models of Labor Supply. *Journal of Political Economy*, Vol. 105(1), pp.191-209.

Craciun, C., 2006. Migration and Remittances in the Republic of Moldova: Empirical Evidence at Micro Level. National University. Unpublished Master Thesis. National University Kyiv-Mohyla Academy.

Danielson, A., 2010. Exploring the process underpinning informality. A Research project about grey economy in Kosovo. Preliminary plan for a doctoral thesis. Presented at the Joint PhD Symposium on South East Europe, London, UK, 18 June 2010

Daz-Briquets, S., 2014. Accounting for recent fertility swings in Cuba. *Population and Development Review*, Vol. 40(4), pp. 677−693.

Deaton, A., and Muellbauer, J., 1980. *Economics of Consumer Behaviour*. Cambridge University Press.

_____. (1986). On Measuring Child Costs: with Applications to Poor Countries. *Journal of Political Economy*, Vol. 94 (4), pp.720-44.

Deaton, A., 1997. *The Analysis of Household Surveys: A microeconomic Approach to Development Policy.* Baltimore, Maryland: The Johns Hopkins University Press.

Deaton, A. 2003. Household Surveys, Consumption, and the Measurement of Poverty. *Economic Systems Research,* Vol.15(2), pp. 135-159.

De Brauw, A., Mueller, V., and Woldehanna, T., 2013. Motives to Remit: Evidence from Tracked Internal Migrants in Ethiopia. *World Development*, Vol. 50, pp. 13–23.

De Coulon, A., and Piracha, M., 2005. Self-Selection and the Performance of Return Migrants: The Source Country Perspective. *Journal of Population Economics*, Vol. 18(4), pp.779-807.

De la Briere, B., Janvry, A. D., Lambert, S., and Sadoulet, E., 1997. Why do migrants remit? An analysis for the Dominican Sierra. International Food Policy Research Institute, Food Consumption and Nutrition Division (FCND), *Discussion Paper*, No. 37.

De la Briere., B. Sadoulet, E., de Janvry, A., and Lambert, S., 2002. The roles of destination, gender, and household composition in explaining remittances: an analysis for the Dominican Sierra. *Journal of Development Economics*, Vol. 68, pp. 309– 328.

De Paoli, A.S.F., 2010. The Effect of Schooling on Fertility, Labour Market Participation and Children's Outcomes. Evidence from Equador. Università degli Studi di Milano, Department of Economics, Management and Quantitative Methods, *Departmental Working Papers*, No. 2010-30.

Dercon, S., and Shapiro, J. S., 2007. Moving on, Staying Behind, Getting Lost: Lessons on Poverty Mobility from Longitudinal Data. in *Moving Out of Poverty: Cross-Disciplinary Perspectives on Mobility*, Narayan, D., and Petesch, P. The World Bank and Palgrave Macmillan, New York.

Del Rey Poveda, A., 2007. Determinants and consequences of internal and international migration: The case of rural populations in the south of Veracruz, Mexico. *Demographic Research*, Volume. 16(A 10), pp.287-314.

Devicienti, F., Groisman, F., and Poggi, A., 2009. Informality and poverty: Are these processes dynamically interrelated? Evidence from Argentina. Society for the Study of Economic Inequality (ECINEQ), *Working Paper*, No. 2009-146.

Di Giulio, P., Bühler, C., Ette, A., Fraboni, R., and Ruckdeschel, K., 2012. Social capital and fertility intentions: The case of Italy, Bulgaria, and West Germany. Vienna Institute of Demography, *Working Papers*, No. 2/2012.

Docquier, F., Rapoport, H., and Salomone, S., 2011. Remittances, Migrants' Education and Immigration Policy: Theory and Evidence from Bilateral Data. IRES, Université Catholique de Louvain*, Discussion Paper, No.* 2011-12.

Dupta, N.D., and Dubey, A., 2011. Poverty and Fertility: An Instrumental Variables Analysis on Indian Micro Data‖. *Aarhus University*, Aarhus School of Business, Department of Economics*, Working Paper,* No. 03/11.

Duval, L., and Wolf, F., 2010. Remittances matter: Longitudinal evidence from Albania. *Post-Communist Economies*, Vol. 22(Issue 1), pp. 73-97.

Economic and Social Commission for Asia and the Pacific (ESCAP) (2006). Poverty and the Informal sector: Role of the informal sector in poverty reduction. United Nations. Third session.

Emmanuel, N. O., William, F. M., Gladys, A., and Denis, Y. N., 2012. Microeconomic determinants of migrant remittances to Nigerian household, *Economics Bulletin*, Vol. 32(4), pp.3425-3438.

ETF, 2007. The contribution of human resources development to migration policy in Albania. Torino: European Training Foundation

European Movement Albania (EMA). 2010. Brain Gain Policies and Their Impact on the European Integration Process of Albania. Policy Study.

Fagernas, S., and Wallas, L., 2007. Determinants of Poverty in Sierra Leone 2003. Overseas Development Institute London. Economic and Statistics Analysis Unit, *Working Paper*, No. 19.

Fields, G., Cichello, P., Freije, S., Menendez, M. and Newhouse, D., 2003. Household Income Dynamics: A Four-Country Story. *Journal of Development Studies*. Vol. 40(2), pp. 30-54.

Fiess, M. N., and Verner, D., 2004. The Dynamics of Poverty and its Determinants: The Case of the Northeast of Brazil and its States. The World Bank Policy Research, *Working Paper*, No. 3259.

Filmer, D., and Pritchett, L.H., 2001. Estimating Wealth Effects without Expenditure Data-or Tears: An Application to Educational Enrollments in States of India. *Demography*, Vol. 38(1), pp. 115-132

Fissuh, E., and Harris, M., 2004. Determinants of Poverty in Eritrea: A Household Level Analysis. Econometric Society 2004, Australasian Meetings 364.

Garza-Rodriguez, J., 2016. The Determinants of Poverty in the Mexican States of the US-Mexico Border. *Estudios Fronterizos, Nueva Epoca*, Vol. 17(33), pp.141-167.

Galli, R., and Kucera, D., 2003. Informal employment in Latin America: Movements over business cycles and the effect of worker rights. International Labour Organization (ILO), *Discussion Paper*, No. 145/2003.

Galor, O., and Weil, D.N., 1996. The Gender Gap, Fertility, and Growth. *The American Economic Review*, Vol. 86(3), pp.374-387.

GAP Institute (2010). A Brief on Private University Education in Kosovo. Analysis 01/2010, pp.3.

Garip, F., 2006. Social and Economic Determinants of Migration and Remittances: An Analysis of 22 Thai Villages. Presented at the 2006 Annual Meeting of the Population Association of America, Los Angeles, California, March 30- April 1.

Geda, A., Jong, N., Kimenyi, M., and Mwabu, G., 2005. Determinants of Poverty in Kenya: A Household Level Analysis. University of Connecticut Department of Economics*, Working Paper,* No. 2005-44.

Germenji, E., and Gedeshi, I., 2008. Highly Skilled Migration from Albania: An Assessment of Current Trends and the Ways Ahead. Development Research Centre on Migration, Globalisation and Poverty, *Working Paper,* No. T-25.

Germenji, E., Beka, I., and Sarris, A., 2001. Estimating remittance functions for rural-based Albanian emigrants. ACE research project, *Working paper*, No. P97-8158-R.

Germenji, E., and Swinnen, F.M., 2008. Human Capital, Market Imperfections, Poverty, and Migration: Evidence from Rural Albania. Presented in: World Bank Conference on Development Economics (ABCDE), Tirana, 10-11 June.

Gertler, P.J., and Molyneaux, J.W., 1994. How Family Planning and Economic Development Combined to Reduce Indonesian Fertility. *Demography*, Vol. 31(1), pp. 33-63.

Gerseter, W., Wiggins, V., and Drukker, D., 2015. Negative and missing *R*-squared for 2SLS/IV. StataCorp [online] Available at: http://www.stata.com/support/faqs/statistics/two-stage-least-squares/.

Gerseter, M., and Lappegård, T., 2010. Mother's employment and fertility in Norway. Statistics Norway, Research Department. *Discussion Papers,* No. 624.

Githinji, M., 2011. Land, Poverty and Human Development in Kenya. University of

Masachusets AMHERST Department of Economics, *Working Paper,* No. 2011-30.

Glewwe, P., 1991. Investigating the determinants of household welfare in Côte d'Ivoire. *Journal of Development Economics*. Vol. 35(2), pp. 307-337.

Gorenca, Sh., and Milo, A., 2012. International Comparative Legal Guide: Employment & Labour Law 2012. Kalo and Associates Office Publications.

Goschin, Z., and Roman, M., 2012. Determinants of the remitting behaviour of Romanian emigrants in an economic crisis context. *Eastern Journal of European Studies*, Vol. 3(Issue 2), pp. 87-103.

Grosh, M., and Glewwe, P., 2000. *Designing Household Survey Questionnaires for Developing Countries: Lessons from 15 Years of the Living Standards Measurement Study*. Washington DC: The World Bank.

Gudbrandsen, N.H., 2010. The impact of Wealth and Female autonomy on Fertility Decisions in Nepal: An Econometric Analysis. Unpublished Master Thesis. University of Bergen, Department of Economics.

Gubert, F., 2002. Do migrants insure those who stay behind? Evidence from the Kayes Area (Western Mali). *Oxford Development Studies*, Vol. 30, pp. 267–287.

Gunes, P.M., 2013. The Impact of Female Education on Fertility: Evidence from Turkey. *GCC, Working Paper Series*, No. 13-01.

Greene, W.H., 1997. *Econometric Analysis*. New York, NY: Prentice Hall.

Greene, W.H., 2003. *Econometric Analysis* (5th ed.). New York, NY: Prentice Hall.

Greene, W.H., 2003. *Econometric Analysis* (7th ed.). New York, NY: Prentice Hall.

Greene, W.H., 2012. *Econometric Analysis* (7th ed). Stern School of Business, New York University.

Hagen-Zanker, J., 2008. Why do people migrate? A review of the theoretical literature. Munich Personal RePEc Archive (MPRA), *Paper,* No. 28197.

Hashmi, A.R., and Mok, W.J., 2013. Determinants of Low Fertility in Singapore: Evidence From A Household Survey. *The Singapore Economic Review*, Vol. 58(4), pp. 1-26.

Hatton, T.J., and Williamson, J.G., 2002. What fundamentals drive world migration?. National Bureau of Economic Research (NBER), *Working Paper,* No. 9159.

Harris, M., and Fissuh, E., 2004. Modeling determinants of poverty in Eritrea: A new approach. Australasian Meetings, *Working Paper,* No. 364. Econometric Society.

Hick, R., 2012. The capability approach: insights for a new poverty focus. Paper accepted for publication and will appear in revised form (following editorial input from Cambridge University Press) in the Journal of Social Policy, published by Cambridge University Press.

Himaz, R., and Aturupane, H., 2011. Education and Household Welfare in Sri Lanka from 1985 to 2006. University of Oxford, *Economics Series Working Papers,* No. 527.

Hoddinott, J., 1994. A Model of Migration and Remittances Applied to Western Kenya. *Oxford Economic Papers, New Series,* Vol. 46(3), pp.459-476.

Holst, E., and Schrooten, M., 2006. Migration and Money – What Determines Remittances? Evidence from Germany. DIW Berlin, *Discussion Papers*, No. 566.

Hoti, A., 2011. Returns for Education in Kosovo: Estimates of Wage and Employment Premia. *South East European Journal of Economics and Business,* Vol. 6(Issue 1), pp. 71-84.

Hou, F., Picot, G., and Qiu, Th., 2014. Analytical Studies Branch Research Paper Series – The Human Capital Model of Selection and the Long-run Economic Outcomes of Immigrants. Government of Canada, *Research Paper,* No. 361.

Hunger, U., 2002. The 'Brain Gain' Hypothesis: Third-World Elites in Industrialized Countries and Socioeconomic Development in their Home Country. Center for Comparative Immigration Studies, University of Muenster, *Working Paper,* No. 47.

IOM, 2006. *A Global Strategy of Migration for Development. Beyond the MIDA Approach to Mobilizing and Sharing of Human and Financial Resources of the Overseas African Community*, *2006-2010.* [online] Available at: http://www.iom.ch/jahia/webdav/site/myjahiasite/shared/shared/mainsite/microsites/mida/global_strat_mida.pdf.

IOM, 2008. *Migration in Albania: A Country Profile 2008*. Geneva, Switzerland: International Organization for Migration. [online] Available at: http://iom.hu/PDF/migration_profiles2008/Albania_Profile2008.pdf.

ILO, 2010. *Profile of the Social Security System in Kosovo (within the meaning of UNSC Resolution 1244 [1999]*. International *Labour Office. [online] Available at: http://www.ilo.org/wcmsp5/groups/public/---europe/---ro-geneva/---sro-budapest/documents/publication/wcms_168770.pdf.*

ILO, 2011. *A Comparative Overview of Informal Employment in Albania, Bosnia and Herzegovina, Moldova and Montenegro*. International Labour Office. [online] Available at:

http://www.ilo.org/wcmsp5/groups/public/@europe/@ro-geneva/@sro-budapest/documents/publication/wcms_167170.pdf.

IKS, 2011. *Udhes per n'BE: Mundesite e Zhvillimit me baze ne zone*. Kosovar Stability Initiative. [online] Available at:http://www.iksweb.org/sq/publikimet/Udhes-per-nBE-Mundesite-e-Zhvillimit-me-baze-ne-zone-287.

Imai, K.S., and Sato, T., 2014. Recent Changes in Micro-Level Determinants of Fertility in India: Evidence from National Family Health Survey Data. *Oxford Development Studies*, Vol. 42(1), pp.65-85.

IMF, 2015. Country Report, Republic of Kosovo. International Monetary Fund, *Report*, No. 15/131**.** [online] Available at: https://www.imf.org/external/pubs/ft/scr/2015/cr15131.pdf.

INSTAT, UNDP and the World Bank, 2009. Albania: Poverty trends 2002, 2005 and 2008. [online] Available at: http://www.instat.gov.al/media/37906/living_standard_measurement_survey_2008.pdf

INSTAT and SFO, 2010. Socio-Demographic Statistics in Albania: Selected Topics and Future Developments. [online] Available at: https://infoscience.epfl.ch/record/161396/files/albanie.pdf.

INSTAT, IPH, ICF Macro and ICF International, 2010. Albania Demographic and Health Survey 2008-09. [online] Available at: https://dhsprogram.com/pubs/pdf/FR230/FR230.pdf.

INSTAT, 2012a. Labour Market 2011-2012. [online] Available at: Available at: http://www.instat.gov.al/media/208016/tregu_i__punes_2011-2012.pdf.

INSTAT, 2012b. Albania Population and Housing Census 2011. [online] Available at: http://www.instat.gov.al/media/177354/main_results__population_and_housing_census_2011.pdf.

INSTAT, 2014. Migration in Albania. [online] Available at: http://www.instat.gov.al/media/242045/migration_in_albania.pdf.

INSTAT, 2015.__Women and Men in Albania 2014. [online] Available at: http://www.instat.gov.al/media/257796/femra_dhe_meshkuj_2014_.pdf.

INSTAT and World Bank, 2015. Albania: Poverty trends 2002-2005-2008-2012. [online] Available at: http://www.instat.gov.al/media/288399/living_standart_measurement_survey__2012_revised.pdf.

Jamal, H., 2005. In Search of Poverty Predictors: The Case of Urban and Rural Pakistan. *The Pakistan Development Review,* Vol. 44(1), pp. 37-55.

Jha, R., 2013. The Determinants of Household Level Fertility in India. Australian National University, Australia South Asia Research Centre (ASARC) *Working Paper Series*, No.2013/13.

Jimenez, E.V., and Brown, R., 2008. Assessing the poverty impacts of remittances with alternative counterfactual income estimates. University of Queensland, School of Economics, *Discussion Paper,* No.375.

Jolliffe, D., 2002. .Whose Education Matters in the Determination of Household Income? Evidence from a Developing Country. *Economic Development and Cultural Change*, *University of Chicago Press,* Vol. 50(2), pp. 287-312.

Jungho, K., Engelhardt, H., Prskawetz, A., and Aassve, A., 2005. Does Fertility Decrease the Welfare of Households? An Analysis of Poverty Dynamics and Fertility in Indonesia. Vienna Institute of Demography, Austrian Academy of Sciences*, Working Paper,* No. 06/2005.

Kamaruddin, R., and Khalili, J.M., 2015. The Determinants of Household Fertility Decision in Malawi: An Econometric Analysis. *Procedia Economics and Finance*, Vol. 23(1), pp. 1308 – 1313.

Kanbur, R., and Mukherjee, D., 2007. Poverty, relative to the ability to eradicate it: An Index of poverty reduction failure. *Economic Letters*, Vol. 97(1), pp.52-57.

Karpestam, P., 2011. Informal and formal sector participation and earnings in LDC: the importance of time and migration. Lund University, Department of Economics *Working Papers.*

Keeley, B., 2007. *Human Capital: How What You Know Shapes Your Life*. Paris: OECD.

Khattak, N.R., Khan, J., Tariq, M., Naem, M., and Tasleem, S., 2011. The Impact of Education on Total Fertility Rate in Pakistan (1981-2008). Munich Personal RePEc Archive (MPRA), *Paper,* No. 56010.

Kedir, A. M., and McKay, A., 2005. Chronic Poverty in Urban Ethiopia: Panel Data Evidence. *International Planning Studies*. Vol. 10(1), pp. 49–67.

Kim, J., Engelhardt, H., Prskawetz, A., and Aassve, A., 2009. Does fertility decrease household consumption? An analysis of poverty dynamics and fertility in Indonesia. *Demographic Research*, Vol. 20(Article 26), pp.623-656.

King, R., and Vullnetari, J., 2003. Migration and Development in Albania. Sussex Centre for Migration Research, *Working Paper*, No. C.5.

King, R., Dalipaj, M., and Mai, N.,2006. Gendering Migration and Remittances: Evidence from London and Northern Albania. *Population, Space and Place*, Vol. 12(6), pp.409-434.

Kjelland, J., 2008. Economic Returns to Higher Education: Signaling v. Human Capital Theory -An Analysis of Competing Theories. *The Park Place Economist,* Vol. 16(Issue 1), pp. 70-77.

Koenker, R., and Hallock, K.F., 2001. Quantile Regression. *The Journal of Economic Perspectives,* Vol. 15(4), pp.143-156.

Kokolj, Z., 2003. Explaining Households' Reproductive Behaviour: An Analysis of Competing Models. *Saskatchewan Economics Journal,* Vol. 5(1), pp. 83-102.

Kolenikov, S., 2008. Survey Bootstrap and Bootstrap Weights. Summer North American Stata Users' Group Meetings 2008 19, Stata Users Group, Revised 28 Aug 2008.

Konica, N., and Filler, R., 2009. Albanian emigration: causes and consequences. *South-Eastern Europe Journal of Economics*, Vol. 1(1), pp.75-98.

Kosovo Agency of Statistics (KAS), 2006. Education Statistics 2005-2006. [online].

Kosovo Agency of Statistics (KAS), 2010. Kosovo in figures 2009. [online] Available at: https://ask.rks-gov.net/media/2162/kosovo-in-figures-2009.pdf.

Kosovo Agency of Statistics (KAS), 2011a. Women and Men in Kosovo 2010. [online] Available at: https://ask.rks-gov.net/media/1703/grate-dhe-burrat-ne-kosove-2010.pdf.

Kosovo Agency of Statistics (KAS), 2011b. Demographic, Social and Reproductive Health Survey in Kosovo 2009. [online] Available at: https://ask.rks-gov.net/en/kosovo-agency-of-statistics/social/demography-and-migration.

Kosovo Agency of Statistics (KAS), 2012. Kosovo in figures 2011. [online] Available at: https://ask.rks-gov.net/media/2156/kosovo-in-figures-2011.pdf.

Kosovo Agency of Statistics (KAS), 2013a. Kosovo Census Atlas 2011. [online] Available at: https://ask.rks-gov.net/media/2008/kosovo-census-atlas-2011.pdf.

Kosovo Agency of Statistics (KAS), 2013b. Estimations of Kosovo Population 2011. [online] Available at: https://ask.rks-gov.net/media/2129/estimation-of-kosovo-population-2011.pdf.

Kosovo Agency of Statistics (KAS), 2013c. Estimations of Kosovo Population 2011-2061. [online] Available at: https://ask.rks-gov.net/media/2123/kosovo-population-projection-2011-2061.pdf.

Kosovo Agency of Statistics (KAS), 2014. Education Statistics 2013-2014. [online] Available at: https://ask.rks-gov.net/media/1652/education-statistics-2013-2014.pdf

Kosovo Agency of Statistics (KAS), 2015a. Results of the Labour Market Survey 2015 for Kosovo. [online] Available at: https://ask.rks-gov.net/media/1687/results-of-the-kosovo-2015-labour-force-survey.pdf.

Kosovo Agency of Statistics (KAS), 2015b. Main Data of Kosovo Census 2011. [online] Available at: https://ask.rks-gov.net/media/2075/final-results_eng.pdf.

Kosovo Agency of Statistics (KAS), 2015c. Women and Men in Kosovo 2014. [online] Available at: https://ask.rks-gov.net/media/1707/grate-dhe-burrat-ne-kosove-2014.pdf

Kosovo Agency of Statistics (KAS), 2016. Annual Yearbook of the Republic of Kosovo 2016. [online] Available at: http://ask.rks-gov.net/media/1304/vjetari_statistikor-2016-shqip.pdf.

Kotorri, M., 2010. The Probability of Economic Emigration in Kosovo. Eastern European Economics, Vol. 48(6), pp. 17–35.

Kuepie, M., Nordman, Ch.J., and Roubaud, F., 2009. Education and earnings in urban West Africa, *Journal of Comparative Economics*, Vol. 37(Issue 3), pp.491-515.

Kule, D., Mancellari, A., Papanagos, H., Qirici, S., Sanfey, P., 2002. The Causes and Consequences of Albanian Emigration during Transition: Evidence from Micro-Data. International Migration Review, Vol. 36(1), pp. 229-39.

Kwon, D., 2009. Human Capital and Its Measurement. The 3rd OECD World Forum on 'Statistics, Knowledge and Policy'. Busan, Kora, 27-30 October Available at: http://www.oecd.org/site/progresskorea/44109779.pdf

Laderchi, C.R., 2000. The monetary approach to poverty: a survey of concepts and methods. University of Oxford, Queen Elizabeth House (QEH), *Working Paper Series*, No. 58

Laderchi, C.R., Saith, R., and Stewart., 2003. Does it matter that we don't agree on the definition of poverty? A Comparison of four approaches. University of Oxford, Queen Elizabeth House, *Working Paper*, No. 107.

Lehmann, H., and Pignatti, N., 2007. Informal Employment Relationships and Labor Market Segmentation in Transition Economies: Evidence from Ukraine. Institute for the Study of Labour (IZA), *Discussion Paper*, No. 3269.

Lehmann, H., and Zaiceva, A., 2013. Re-defining Informal Employment and Measuring its Determinants: Evident from Russia. Institute for the Study of Labour (IZA), *Discussion Paper*, No. 7844.

Lerch, M., 2013. Patriarchy and fertility in Albania. *Demographic Research,* Vol. 29(6), pp.

134-162.

Leuthold, J., 1968. An empirical study of formula income transfers and the work decision of the poor. *Journal of Human Resources*. Vol. 3(3), pp. 312-323.

Lianos, Th.P., and Cavounidis, J., 2008. Immigrant Remittances, Stability of Employment and Relative Deprivation, *International Migration,* Vol. 48(5), pp. 118-141.

Libois, F., and Somville, V., 2014. Fertility, household's size and poverty in Nepal. University of Namur, Department of Economics, *Working Paper*, No. 1412.

Lister, R., 2004. *Poverty.* Cambridge: Polity Press.

Litchfield, J., and Waddington, H., 2003. Migration and Poverty in Ghana: Evidence from the Ghana Living Standards Survey. University of Sussex, Sussex Centre for Migration Research, *Working Paper*, No. 10.

Lok-Dessallien, R., 2002. Review of Poverty Concepts and Indicators. United Nations Development Programme (UNDP) Policy Related Publications.

Loxha, A., and Elshani, D., 2015. Potential Migrant's Profile: Who are the Kosovars most willing to Migrate?. Group for Legal and Political Studies, *Policy Analysis*, No. 02/2015.

Lucas, R.E.B., and Stark, O., 1985. Motivations to Remit: Evidence from Botswana. *Journal of Political Economy*, Vol. 93(5), pp. 901-918.

Lucas, R. 2005. International Migration Regimes and Economic Development. Continuing the Dialogue: Legal and Policy Perspectives. 1st Edition. The Center for Migration Studies of New York and The International Organization for Migration (IOM). [online] Available at: http://publications.iom.int/system/files/pdf/international_migration_development.pdf.

Madani, F., Muharremi, O., and Pelari, E., 2013. The Effect of Remittances on the Living Stardards of Albanians and on Country's GDP. *Mediterranean Journal of Social Sciences*, Vol. 4(10), pp. 415- 423.

Makoka, D. and Kaplan., 2005. Poverty and Vulnerability - An Interdisciplinary Approach. Munich Personal RePEc Archive (MPRA)*, Paper,* No. 6964.

Margolis, D., Miotti, L., El-Mouhoub, M., and Oudinet, J., 2013. "To Have and Have Not": Migration, Remittances, Poverty and Inequality in Algeria. IZA, *Discussion Paper*, No.7747

Margolis, A., Massey, D.S., Ceballos, M., Espinosa, K., and Spittel, M., 2001. Social Capital and International Migration: A Test Using Information on Family Networks. *American Journal of Sociology*, Vol. 106(5), pp. 1262-1298.

Massey, D.S., Arango, J., Hugo, G., Kouaouchi, A., Pellegrino, A., and Taylor, J.E., 1993. Theories of International Migration: A Review and Appraisal. *Population and Development Review*, Vol. 19(3), pp. 431-466.

Massey, D.S., 1990. Social Structure, Household Strategies, and the Cumulative Causation of Migration. *Population Index*, Vol. 45(1), pp. 3-26.

Mason, K.O., 1987. The Perceived Impact of Child Care Costs on Women's Labor Supply and Fertility. Population Studies Center, University of Michigan, *Research Report, No*. 87-110.

Mattei, A., Mealli, F., and Pudney, S., 2009. Living Standards and Fertility in Indonesia: A Bayesian Analyse. *Giornale degli Economisti e Annali di Economia*, Vol. 68(2), pp. 175-210.

Mathienson, J., Popay, J., Enoch, E., Escorel, S., Hernandez, M., Johnston, H., and Rispel, L., 2008. Social Exclusion Meaning, measurement and experience and links to health inequalities A review of literature. WHO Social Exclusion Knowledge, *Network Background Paper,* No.1**.**

Memaj, F., Koxhaj, A., and Qarri, A., 2008. The Challenges of Brain Drain in South East Europe: Albania's Case. Paper presented at International Conference on Applied Economics, Kastoria, Greece, 15-17 May.

Mercan, M., 2014. The effect of education expenditure on economic growth: The case of Turkey. *Procedia-Social and Behavioral Sciences*, Vol. 109(8), pp.925-930.

McKenzie, D. J., 2007. A Profile of the World's Young. Institute for the Study of Labour (IZA), *Discussion Paper*, No. 2948.

McKenzie, D., and Rapoport, H., 2007. Network Effects and the Dynamics of Migration and Inequality: Theory and Evidence from Mexico. *Journal of Development Economics*, Vol. 84(1), pp. 1-24.

McDonald, J.T. and Valenzuela, R., 2012. Why Filipino Migrants Remit? Evidence from a Home-Host Country Matched Sample. Monash University, Monash Economics, *Working Paper*, No. 09-12.

McQuillan, K., 2004. When Does Religion Influence Fertility?. *Population and Development Review*, Vol. 30(1), pp.25-56.

Mincer, J., 1963. Opportunity Costs and Income Effects. In: C.Christ, et al., *Measurement in Economics*, (eds.) Stanford, CA: Stanford University Press.

Ministry of Finance, 2008. Medium Term Expenditure Framework 2009-2011. Government of the Republic of Kosovo

Ministry of Labour and Social Welfare (MLSW), 2012. Labour and Employment 2011.

Miranda, A., 2010. A double-hurdle count model for completed fertility data from the developing world. University of London, Institute of Education, *Working Paper,* No.10-01.

Muller, G. P., 2003. Explaining Poverty: On the Structural Constraints of Income Mobility. *Social Indicator Research.* Vol. 59(3), pp.301-319.

Mukherjee, S., and Benson, T., 2003. The Determinants of Poverty in Malawi, 1998. *World Development,* Vol. 31(2). pp. 339–358.

Ministry of Labour, Social Affairs and Equal Opportunities of Albania (MLSAEOA), 2007. Sectoral Employment Strategy 2007-2013.

Moeeni, M., Pourreza, A., Torabi, F., Heydari, H., and Mahmoudi, M., 2014. Analysis of economic determinants of fertility in Iran: a multilevel approach. *International Journal Health Policy Management*, Vol. 3(3), pp.135–144.

Möllers, J., and Meyer, W., 2014. The effects of migration on poverty and inequality in rural Kosovo. Institute for the Study of Labour (IZA), *Journal of Labour and Development*, Vol. 3(16).

Mora, J., and Taylor, E.J., 2006. Does Migration Reshape Expenditures in Rural Households? Evidence from Mexico. World Bank, *Policy Research Working Paper,* No. 3842.

Mubangizi, B.C., 2003. Drawing on social capital for community economic development: Insights from a South African rural community. *Community Development Journal,* Vol. 38(2), pp.140-150.

Mussa, R., 2009. Impact of fertility on objective and subjective poverty in Malawi. Munich Personal RePEc Archive (MPRA), *Paper,* No. 16089.

Naufal, G.S., 2015. Impact of remittances on poverty. Institute for the Study of Labour (IZA), World of Labour, *Working Paper*, No. 207.

Nestic, D., and Vecchi, G., 2007. Regional poverty in Croatia. In: Lovrincevic et al. (eds.) Social Policy and Regional Development Proceedings. Zagreb: EIZ and FES.

Nguyen, Th.M., Gian N.Th.H., Ngoc, V.Th.M., and Duc, N., 2013. Whether or not the informal economy as an engine for poverty alleviation in Vietnam. Munich Personal RePEc Archive (MPRA), *Paper*, No. 48378.

Niimi, Y., Ozden, C., and Schiff, M., 2008. Remittances and the Brain Drain: Skilled Migrants Do Remit Less. Institute for the Study of Labour (IZA) *Paper No*. 3393.

Nilsson, Th., 2005. Remittances and Poverty. Unpublished Master's Thesis. Lund University, School of Economics and Management.

Njong, M., 2010. The Effects of Educational Attainment on Poverty Reduction in Cameroon. *Journal of Education Administration and Policy Studies*, Vol. 2(1), pp. 001-008.

Noble, M., Ratcliffe, A., and Wright, G., 2004. *Conceptualizing, Defining and Measuring Poverty in South Africa: An Argument for a Consensual Approach*. Oxford: Centre for the Analysis of South African Policy.

Nunes, C., 2008. Poverty Measurement: The Development of Different Approaches and Its Techniques. Society for the Study of Economic Inequality, *Working Paper*, No.93.

OECD, 2001. *The Well-being of Nations: The Role of Human and Social Capital. Paris:* OECD. [online] Available at: http://www.oecd-ilibrary.org/education/the-well-being-of-nations_9789264189515-en.

OECD, 2012. "Albania", in Connecting with Emigrants: A global Profile of Diasporas. Paris: OECD. [online] Available at: http://www.keepeek.com/Digital-Asset-Management/oecd/social-issues-migration-health/connecting-with-emigrants/albania_9789264177949-83-en#page1.

Odusola, A.F., 2002. Poverty and Fertility Dynamics in Nigeria: A Micro Evidence. Presented in: Conference Understanding Poverty and Growth in Sub-Saharan Africa, St Catherine's College, Oxford, 18 -19 March.

Office of the Deputy Prime Minister (ODPM), 2004. Breaking the Cycle: Taking Sock of Progress and Priorities for the Future. A Report by Social Exclusion Unit. Office of the Deputy Prime Minister UK.

Ogundari, K., 2012. Returns to Education Revisited and Effects of Education on Household Welfare in Nigeria. Paper presented at New Zealand Agricultural and Resource Economics Society Conference, Tahuna Conference Centre – Nelson, New Zealand, 30-31, August.

Okoije, Ch., 2002. Gender and Education as Determinants of Household Poverty in Nigeria. World Institute for Development Economics Research (WIDER), *Discussion Paper,* No. 2002/37.

Olaniyan, O., 2000. The Effect of Household Endowments on Poverty in Nigeria. *African Journal of Economic Policy,* Vol. 9(2), pp. 77–102.

Olga, F., and El-Lahga, A., 2002. A socioeconomic analysis of fertility determinants with a count data models: the case of Tunisia. In: Procedings of the 9th Annual Conference of the Economic Research Forum for the Arab Countries. Sharjah, United Arab Emirates, 26-28 October.

Omariba, D.W., 2006. Women's educational attainment and intergenerational patterns of fertility behaviour in Kenya. *Journal of Biosocial Science*, Vol. 38(4), pp.449-479.
Onphanhdala, P., and Suruga, T., 2006. Education and Earnings in Lao PDR: Regional and Gender Differences. Kobe University GSICS, *Working Paper Series*, No. 4.

Osaki, K., 2003. Migrant remittances in Thailand: Economic necessity or social norm?. *Journal of Population Research*, Vol. 20(Issue 2), pp. 203-222.

Osili, U.O., 2007. Remittances and savings from international migration: Theory and evidence using a matched sample. *Journal of Development Economics*, Vol. 83(Issue 2), pp. 446–465.

Osowole, O.I., Ugbechie, R., and Uba, E., 2012. On the Identification of Core Determinants of Poverty: A Logistic Regression Approach. *Mathematical Theory and Modelling*, Vol. 2(10), pp. 45-52.

Palloni, A., Massey, D. S., Ceballos, M, Espinosa, K., Spittel, M., 2007. Social capital and international migration: A Test Using Information on Family Networks. *The American Journal of Sociology,* Vol. 106(5), pp. 1262-1298.

Persson, R., 2014. Simultaneous Determination of Debt, Dividend, and Inside Ownership Policies: Evidence from Sweden. Unpublished Master Thesis, Mid Sweden University, Sweden.

Pfau, W.D., and Giang, L.Th., 2010. The Growing Role of International Remittances in the Vietnamese Economy: Evidence from the Vietnam (Household) Living Standard Surveys. Munich Personal RePEc Archive (MPRA), *Paper,* No. 24945.

Pfau, W.D., 2008. Determinants and Impacts of International Remittances on Households Welfare in Vietnam. Munich Personal RePEc Archive, *Working Paper*, No. 19038.

Philipov, D., Speder, Z., and Billari, C., 2006. Soon, later, or ever? The impact of anomie and social capital on fertility intentions in Bulgaria (2002) and Hungary (2001). *Population Studies*, Vol. 60(3), pp. 289-308.

Philipov, D., and Shkolnikov V., 2001. Fertility intentions and copying strategies: results from the Russian Longitudinal Monitoring Survey. Paper presented at the Annual Meeting of the Population Association of America, Washington D.C.

Phuong, N.Th., Tam, T.N.Th.M., Nguyet, N.Th., and Oostendorp, R., 2008. Determinants and Impacts of Migration in Vietnam. Development and Policies Research Center (DEPOCEN), *Working Paper,* No.1.

Piracha, M., and Vadean, F., 2010. Return Migration and Occupational Choice: Evidence from Albania. *World Development*, Vol. 38(Issue 8), pp. 1141-1151.

Pleitez-Chavez, R.A., 2004. Remittances as a Strategy to Cope with Systemic Risk: Panel Results from Rural Households in El Salvador. Unpublished PhD, Ohio State University, Columbus.

Portes, A., 1998. Social Capital: Its Origins and Applications in Modern Sociology. *Annual Review of Sociology*, Vol. 24(1), pp. 1-24.

Psacharopoulos, G., 1994. Returns to Investment in Education: A Global Update. *World Development,* Vol. 22(9), pp. 1325 – 1343.

Psacharapoulos, G., and Patrinos, H. A., 2004. Returns to Investment in Education: a Further Update. *Education Economics*, Vol. 12(2), pp. 111-134.

Rainer, H., and Siedler T., 2009. Social Networks in Determining Migration and Labor Market Outcomes: Evidence from the German Reunification. *Economics of Transition*, Vol. 17(4), pp. 739-767.

Ramos, R., and Matano, A., 2013. Remittances, education and return migration. Evidence for immigrants in Spain. University of Barcelona, *Working Paper*, No. 3/11.

Rasul, I., 2008. Household bargaining over fertility: Theory and Evidence from Malaysia. *Journal of Development Economics*, Vol. 86(Issue 2), pp.215-241.

Ravallion, M., 1998. Poverty Lines in Theory and Practice. The World Bank LSMS, *Working Paper,* No. 133.

Ravallion, M., 2011. On Multidimensional Indices of Poverty. The World Bank Policy Research, *Working Paper,* No.5580.

Richter, S. M., and Taylor, J.E., 2008. Gender and the Determinants of International Migration from Rural Mexico Over Time: In Morrison, A.R., Schiff, M., and Sjöblom, M., (Eds.) *The International Migration of Women.* New York: Palgrave McMillan and The World Bank.

Riddel, R., 2004. Approaches to Poverty. A Note from the 'Development' Perspective. International Council on Human Rights Policy (ICHRP) Researchers Meeting, Geneva, 24-25 November.

Riinvest, 2007. Diaspora and migration policies. [online] Available at: http://www.riinvestinstitute.org/publikimet/pdf/50.pdf.

Riinvest, 2013. To Pay or Not to Pay: A Business Perspective of Informality in Kosovo. [online] Available at: http://www.fes-prishtina.org/wb/media/Publications/2013/BUSINESS_INFORMALITY__ENG_FINAL.pdf

Robinson, W., 1997. The Economic Theory of Fertility Over Three Decades. *Population Studies*, Vol. 51(1), pp. 63-74. Taylor and Francis, Ltd.

Rolleston, C., 2011. Educational access and poverty reduction: The case of Ghana 1991–2006. *International Journal of Educational Development,* Vol. 31(4), pp. 338–349

Roman, M., 2013. Financial Effects of the International Migration in Europe: Modelling the Decision to Remit. *Panoeconomicus,* Vol. 4(1), pp.541-555.

Roodman, D., 2007. CMP: Stata module to implement conditional (recursive) mixed process estimator. Statistical Software Components S456882, Boston College Department of Economics, revised 02 Nov 2013

Sakuhini, R.C., Chidoko, C., Dhoro, N.L., and Gwaindepi, C., 2011. Economic Determinants of Poverty in Zimbabwe. *International Journal of Economics and Research*, Vol. 2(6), pp.1-12.

Sarwar, G., and Sial, M.H., 2011. Nexus between Education, Migration and Earnings of Migrants in Pakistan. *International Journal of Business and Social Science*, Vol. 2(4), pp.253-259.

Sayan, S., 2006. Business Cycles and Workers' Remittances: How do Migrant Workers Respond to Cyclical Movements of GDP at Home?. International Monetary Fund (IMF). *Working Paper*. No. 06/52.

Sax, C., 2011. Constraint or choice? Disentangling fertility determinants by switching regressions. *Demographic Research Journal*, Vol. 25(23), pp.723-754.

Schultz, T.W., 1961. Investment in Human Capital. *American Economic Review*. Vol. 51(1). pp.1-17.

Schultz, T.W., 1971. *Investment in Human Capital*. New York: Free Press.

Schultz, T.W., 1981. *Investing in People: The Economics of Population Quality*. Berkeley: University of California Press.

Schultz, P.T., 1997. *Demand for Children in Low Income Countries*. Volume 1A of Handbook of Population and Family Economics. Edited by R. Rosenzweig and Oded Stark. Amsterdam: Elsevier.

Schultz, P.T., 2005. Fertility and Income. Yale University, Economic Growth Centre, *Discussion Paper*, No. 925.

Scutella, R., Wilkins, R., and Horn., 2009. Measuring Poverty and Social Exclusion in Australia: A Proposed Multidimensional Framework for Identifying Socio-Economic Disadvantage. Melbourne Institute, *Working Paper*, No. 4/09.

Sen, A.K., 1993. Capability and Well-Being' in M.C. Nussbaum and A.Sen (eds.), *The Quality of Life*. Oxford: Clarendon Press and reprinted (1999), New Delhi: Oxford University Press.

Sen, A.K., 1999. *Development as Freedom (DAF)*. Oxford: Oxford University Press.

Shapiro, D., and Tambashe, B.O., 2000. Ongoing Fertility Transition in Sub-Saharan Africa In: Baffoe-Bonnie, J., and Khayum, M., (eds) *Contemporary Economics Issues in Developing Countries*. Praeger, Connecticut, USA.

Shaorshadze, I., and Miyata, S., 2010. Foreign Remittances and Poverty Reduction in Kosovo. Paper presented in Conference for Western Balkans Poverty and Inclusion, Brussels, 14-15 December.

Sharif, M., 2007. *Poverty Reduction: An Effective Means of Population Control- Theory, Evidence and Policy*. First Published by Gower Publishing, Surrey UK.

Shehaj, E., 2012. The Determinants of Migration and Remittances in Albania. *International Journal of Scientific and Engineering Research*, Vol. 3(4), pp.1-8.

Shehaj, E., 2013. The impact of International Migration and Remittances in the Coastal and Mountain Regions of Albania. Doctor of Philosophy Thesis, Staffordshire University, Stoke-on-Trent, UK.

Sjaastad, L.A., 1962. The Costs and Returns of Human Migration. *Journal of Political Economy*, Vol. 70(5) Part 2, pp. 80-93.

Song, Y., 2012. Poverty Reduction in China: The Contribution of Popularizing Primary Education. *China and World Economy*, Vol. 20(1), pp. 105-122.

Spence, M., 1973. Job Market Signalling. *Quarterly Journal of Economics*, Vol. 87(3), pp. 355- 374.

Stark, O., 1991. *The migration of labor*. Oxford and Cambridge, MA: Basil Blackwell.

Stark, O.J., Taylor, E., and Yitzhaki, Sh., 1986. Remittances and Inequality. *The Economic Journal,* Vol. 96(383), pp. 722-740.

Sookram, S., and Watson, P., 2008. The Informal Sector and Gender in the Caribbean: The Case of Trinidad & Tobago. *Journal of Eastern Caribbean Studies,* Vol. 33(4), pp. 42-66.

Stiglitz, J.E., 1975. The Theory of 'Screening', Education, and the Distribution of Income. *American Economic Review*, Vol. 65(3), pp. 283–300.

Tadesse, B., and Asefa, S., 2002. Empirical Analysis of the Determinants of Demand for Children in Jimma City, Ethiopia: An Application of Count Data Model. *Eastern Africa Social Science Research Review*, Vol. 18(2), pp.43-67.

Tilak, J.B.G., 2001. Education and Poverty: Is Education - a Way out of Poverty? In: Proceeding of the Poverty Conference Swedish International Development Agency (SIDA) and Collegium for Development Studies. New Education Division Document No. 12.

Tegoum, N., 2009. Estimating the returns to education in Cameroon Informal sector. Presented at GLOBELICS 7th International Conference, Daka, Senegal, 6-8 October.

Telegrafi, 2014. Paga mesatare në Kosovë ka arritur në 346 euro. [online]. Available at:http://www.telegrafi.com/ekonomi/lajme-ekonomi/paga-mesatare-ne-kosove-ka-arritur-ne-346-euro.html. [Accessed 10 January 2016].

Ueda, A., 2007. A Dynamic Decision Model of Marriage Childbearing, and Labour Force Participation of Women in Japan. *The Japanese Economic Review*, Vol. 58(4), pp. 443-465.

UNESCO, 2011. World data on education. 7th Edition. [online] Available at: http://www.ibe.unesco.org/fileadmin/user_upload/Publications/WDE/2010/pdf-versions/Albania.pdf.

UNDP, 1997. Human Development Report 1997. Oxford: Oxford University Press UK.

UNDP, 2006. From Brain Drain to Brain Gain: Mobilising Albania's Skilled Diaspora. Policy Paper prepared for the Government of Albania by Centre for Social and Economic Studies in collaboration with the Development Research Centre on Migration, Globalisation and Poverty, University of Sussex, UK. [online] Available at: http://www.migrationdrc.org/publications/other_publications/Brain_Gain_Policy_Paper_english_FINAL.pdf.

UNDP, 2007. Second Millennium Development Goals Report Kosovo. [online] Available at: http://unkt.org/en/second-millennium-development-goals-report-kosovo/.

UNDP, 2010. Kosovo Human Development Report 2010: Social Inclusion. [online] Available at: http://hdr.undp.org/en/content/kosovo-human-development-report-2010.

UNDP, 2012a. Kosovo Remittance Study 2012. [online] Available at: http://www.ks.undp.org/content/dam/kosovo/docs/Remitances/KRS2012_English_858929.pdf.

UNDP, 2012b. Kosovo Human Development Report 2012: Private Sector and Employment. [online] Available at: http://hdr.undp.org/sites/default/files/khdr2012-eng.pdf.

UNDP, 2014a. Kosovo Human Development Report 2014: Migration as a Force for Development. [online] Available at: http://www.ks.undp.org/content/dam/kosovo/docs/KHDR/human_dev_rep_english.pdf.

UNDP, 2014b. The real value of social assistance: An Assessment of Social Assistance benefit adequacy. [online] Available at: http://www.ks.undp.org/content/dam/kosovo/docs/Communications/Dokumenti%20The%20Real%20Value%20of%20Social%20Assistance%20ONLINE.pdf.

UNDP, 2014c. Three Policy Assessments for Priority Trade and Human Development. [online] Available at: http://www.ks.undp.org/content/kosovo/en/home/library/poverty/three-policy-assessments-for-priority-trade-and-human-developmen.html.

UNICEF, 2010. Towards Roma Inclusion: A Review of Roma Education Initiatives in Central and South-Eastern Europe. [online] Available at: http://www.unicef.org/ceecis/ROMA_PAPER_FINAL_LAST.pdf.

UNIFEM, 2005. Progress of the World's Women 2005: Women, Work and Poverty. [online] Available at: http://www2.unwomen.org/~/media/headquarters/media/publications/unifem/poww2005_eng.pdf?v=1&d=20140917T101016.

Vadean, F.P., and Piracha, M., 2009. Circular Migration or Permanent Return: What Determines Different Forms of Migration?. Department of Economics Discussion Papers, University of Kent, *KDPE* No.09/12.

Van der Berg, S., 2008. Poverty and education. International Academy of Education and the International Institute for Education Planning (UNESCO), *Education Policy Series,* No. 10.

Vanwey, L.K., 2004. Altruistic and Contractual Remittances between Male and Female Migrants and Households in Rural Thailand. *Demography*, Vol. 41(4), pp.739-756.

Vathi, Z., and R. Black., 2007. Migration and Poverty Reduction in Kosovo. Development Research Centre on Migration, Globalisation and Poverty, *Working Paper*, No.C-20.

Vermuelen, F., 2002. Collective Household Models: Principles and Main Results. Journal of Economic Surveys, Vol. 16(Issue 4), pp. 533-564

Verner, D., 2004. Education and its Poverty-Reducing Effects: The Case of Paraíba, Brazil. The World Bank Policy Research, *Working Paper*, No. 331.

Xhelili-Krasniqi, F., and Mustafa-Topxhiu, R., 2012. The Informal Economy in Kosovo: Characteristics, Current Trends and Challenges. *Journal of Knowledge Management, Economics and Information Technology*, Vol. 2(2), pp. 1-25.

Wagle, U., 2002. Rethinking poverty: definition and measurement. *International Social Science Journal,* Vol. 54(171), pp. 155-165.

Westoff, Ch.F., and Frejka, T., 2007. Religiousness and Fertility among European Muslims. *Population and Development Review*, Vol. 33(4), pp. 785-809.

Wooldrige, J.M., 2002. *Econometric Analysis of Cross Section and Panel Data.* Cambridge, Mass: The MIT Press.

Wooldridge, J.M., 2009. *Introductory Econometrics. A Modern Approach*. 4th Ed. Mason: Thomson South-Western.

World Bank (WB), 2003. Albania Poverty Assessment. *Report*, No. 26213-AL. [online] Available at: https://openknowledge.worldbank.org/handle/10986/14605.

World Bank (WB), 2005. Kosovo Poverty Assessment: Promoting Opportunity, Security, and Participation for all. *Report* No. 32378-XK. [online] Available at: https://openknowledge.worldbank.org/handle/10986/8650.

World Bank (WB), 2007a. Volume II: Estimating Trends from Non-comparable Data. [online] Available at: https://openknowledge.worldbank.org/handle/10986/7618.

World Bank (WB), 2007b. Albania Urban Growth, Migration and Poverty Reduction. [online] Available at: http://siteresources.worldbank.org/PGLP/Resources/Albania_PA_Grey_Cover_2007_FINAL.pdf

World Bank (WB), 2010. Kosovo- Unlocking growth potential: Strategies, policies, actions. A country economic memorandum. *Report,* No.53185-XK. [online] Available at: https://openknowledge.worldbank.org/handle/10986/2859.

World Bank (WB), 2011a. Migration and Economic Development in Kosovo. Report No. 60590-XK. [online] Available at:

http://siteresources.worldbank.org/INTKOSOVO/Resources/Migration_and_Economic_Development_in_Kosovo_WB_report.pdf.

World Bank (WB), 2011b. Migration and Remittances, Factbook 2011, 2nd Edition. [online] Available at: http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1199807908806/Albania.pdf.

World Bank (WB) and KAS, 2011. Consumption Poverty in the Republic of Kosovo 2009. [online] Available at: http://documents.worldbank.org/curated/en/773541468101964492/pdf/754360WP0Kosov074331B00PUBLIC000ENG.pdf.

World Bank (WB), 2015. Country Snapshot April 2015. [online] Available at: http://www.worldbank.org/content/dam/Worldbank/document/eca/Kosovo-iSnapshot.pdf.

Waddington, H., and Sabates-Wheeler, R., 2003. How Does Poverty Affect Migration Choice? A Review of Literature. Development Research Centre on Migration, Globalisation and Poverty, *Working Paper*, No. T3.

Wählisch, M., 2010. The Rule of Law in Kosovo. Concepts, Challenges and Realities. In: Koetter, M., and Schuppert, G.P. *Understandings of the Rule of Law in Various Legal Orders of the World*. Freie Universitaet Berlin.

Winters, P., De Janvry, A., and Sadoulet, E., 2001. Family and Community Networks in Mexico-U.S. Migration. *The Journal of Human Resources,* Vol. 36(1), pp. 159-184.

United Nations Population Fund (UNFPA), 2012. Sex Imbalances at Birth in Albania. [online] Available at: http://www.unfpa.org/resources/sex-imbalances-birth-albania.

Yamasaki, I., 2012. The Effect of Education on Earnings and Employment in the Informal Sector in South Africa. Unpublished PhD thesis Columbia University, USA.

Zezza, A., Carletto, G., and Davis, B., 2005. Moving away from Poverty: A Spatial Analysis of Poverty and Migration in Albania. FAO Agricultural and Development Economics Division, *Working Paper*, No.05/02.

Zuluaga, B., 2007. Different Channels of Impact of Education on Poverty: An Analysis for Colombia. Katholieke Universiteit Leuven, Center for Economic Studies, *Discussion Papers*, No. 0702.

Zhu, N., and Luo, X., 2008. The Impact of Remittances on Rural Poverty and Inequality in China. World Bank, *Policy Working Paper*, No. 4637.

APPENDIXS