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Human development, poverty and income inequality from an Islam point of view and its implications for Islamic countries

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This paper examines the impact of the various components of human capital on income inequality, and poverty in Islamic countries. The least-squares estimation technique in a multivariate linear regression was used. It must be pointed out that the inclusion of interaction terms between income and the components of human capital, yields better statistical results, as expected. Data for all variables are from the World Development Report (2008, 2009) and from Annual Economic Report on the OIC countries. Using a sample of 45 Islamic economies, the results indicate that enhancing the components of human capital in the Muslim world, will reduce poverty and change income distribution toward equality. The results of the empirical investigation will help governments in Islamic countries to identify the areas that must be improved in order to reduce poverty and alleviate the gap between the rich and the poor. This paper is first of its kind providing useful information on the impact of the human capital components on poverty and income distribution in Muslim world.

Key words: Human capital, poverty, income inequality, education, health, Islamic countries.

INTRODUCTION

Reducing poverty and improving income distribution are among the most important economic goals of Islam and subsequently, Islamic economics. On the other hand, Islam has highly emphasized the importance of components of human capital like education and health (Hamdani, 2006).

However, a quick glance at the current situation of the Muslim countries shows something different. In fact, there is a big gap between Islamic teachings about income inequality and poverty, and the present condition of Islamic countries. Having gone over the international data about the economic status of Muslim countries, one can easily recognize that the majority of them are developing countries with high level of poverty and income inequality (WDR, 2009). There lies a question: what should Islamic countries do to solve their problems considering poverty and income distribution? It seems that there are quite different suggestions to solve these problems. One of them is enhancing human capital, like education and health (as indicated in Islamic teachings). In other words, the theory is that improving the components of human capital in the Muslim world, will reduce poverty and change income distribution for the better.

Having gone briefly over the Islamic literature on poverty, inequality and human capital, the present study examines the impact of the various components of human capital on the income inequality and poverty rate in Islamic countries. Statistical results of such empirical

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examination will help governments in Islamic world identify areas that need to be improved upon in order to alleviate poverty and improve the distribution of income.

Justice, poverty, health and education in Islam

Justice is the real goal of religion. It was the mission of all Prophets and the message of all Scriptures. "We sent aforetime our Apostles with Clear Signs and sent down with them the Book and the Balance (of right and wrong) that people may stand forth in justice" (Sura 57, verse 250). The holy Quran abounds with references to justice. Its importance is emphasized in a variety of human situations: inter-personal relationships, within the family, the community, in the interaction between communities and nations, and in the interface between the human being and the surrounding nature.

At every level, Muslims are urged to be fair and just. Justice is an integral part of the faith and upholding the principle of justice is not confined to the courtroom environment, or to a set of formal injunctions, but commands a high priority in the order of Islamic moral and spiritual values (Hamid, 1989).

"O ye believe! Stand out firmly for justice as witnesses to God,
Even as against yourselves, or your parents, or your kin,
and whether it be against rich or poor, for Allah can best protect both,
Follow not the lusts (of your hearts),
Lest ye swerve, and if you distort (justice) or decline to do justice ,
Verily Allah is well-acquainted with all that ye do" (Sura 4, verse 135).
"O ye who believe! Stand out firmly for Allah, as witnesses to fair dealing,
And let not the hatred of others to you make you swerve to wrong
And depart from justice,
Be just; that is next to Piety; and fear Allah...." (Sura 5, verse 8).

The Quran not only gives us an indication of what justice is, it also emphasizes over and over, the responsibility as human beings to strive relentlessly for justice. People are now living in a world that is becoming increasingly and palpably unjust and inequality in distribution is about to become a normal phenomenon. One of the central threats and challenges to current public situation is unjust distribution of resources, unequal access of health care, urban/rural bias, country-to-country, and nation to nation inequities. It is estimated that 650,000 children die across the "Third World" each year because of debt payments; that the richest 20% of the world's population get 150 times more the poorest 20% (Muzzaffur, 1993). What is even more distressing is a UN study that showed that "The poorest of the developing countries have more than

50% of the World's population and 5.6% of world income" (Turk, 1993).

This unjust global system has caused tremendous pain and suffering to humanity, and it seems that it is not capable of overcoming the problems. It is because of this system that we notice a great deal of difference in health and education status of developing countries (most of the Islamic countries included) in comparison with developed world.

It is about time to talk about poverty in Islam, but before the study will dwell into this concept, it would be very helpful to discuss what constitute human needs and also basic needs.

These concepts will be very useful for a meaningful discussion of poverty in the Islamic framework and they show the place of health and education in this religion.

There are essentially five groups of activities and things, which make up the human needs. These are: (a) religion, (b) physical health, (c) knowledge and education, (d) Offspring, and (e) wealth. The fulfillment of these needs is considered one of the basic goals of the religion of Islam. This is so because Islam aims at providing every opportunity for good living, both at the individual as well as at the societal levels.

The starting point is that Islam sets goals for human life. All matters that help to achieve the goals increase welfare or standard of living and are called Masalih or utilities; the opposite are Mafasid or disutilities. The five foundations are discussed further.

Religion

Religion is considered as a basic need or fundamental right for every individual. One is free to practice the religion of his choice. There should not be any compulsion in choosing one's religion, nor obstruction to practice it. It is the religion that provides guidance, peace, tranquility, comfort and purpose in life. It is the religion that teaches man to uphold truth, justice, and all the virtues. It is also the religion that teaches man to avoid the vices. If one is deprived of religion, he would not receive the guidance and realize the real purpose of life.

Health

In Islamic thinking, the physical health as well as mental health is emphasized. It means that a healthy body is an important thing in Islamic view. The prophet traditions clearly show how important physical health is in the Islamic thoughts.

Intellect or knowledge

According to Islamic principles, knowledge is a real need of all people and so, Muslims are highly encouraged not only to learn but also to teach others. Islam classifies knowledge into two categories, the basic, or fundamental,

which must be secured by every individual, and the specialized knowledge, which should be secured by only a few in a society.

The basic or fundamental knowledge includes all that are useful in the course of everyday life.

It includes the religious rituals or basic devotional acts and all other knowledge of the sciences and the arts that are useful in life.

The specialized knowledge is not basic to everyone or not required by everyone. Such knowledge is meant for specialists, without which, the society may not progress. Examples are medicine, dentistry, laws, accountancy, etc.

Offspring

Islam does not view sex as a need in itself, but as a means of propagating the human race. As such, the propagating of the human race is the need and purpose in life than mere satisfaction of carnal desires.

Wealth

Wealth is obviously a fundamental human need. Wealth here can be interpreted as a stock or flow. In other words, one may talk about a piece of property that generates income or an employment that brings remuneration.

Poverty in Islam

Poverty in Islam is related to the concept of necessities discussed earlier. One is considered poor if he does not possess sufficient necessities to fulfill his basic needs in each of the five pillars for good individual and social life. In other words, one of the basic goals of Islam, that is, to establish a reasonably good life, has not been fulfilled. This definition also implies that all the five foundations or needs must be fulfilled. If only one of the needs is not fulfilled, then one is still considered poor.

In this context, Islam defines two categories of poor, namely, the poor and needy, or destitute. The former are those who do not possess the necessities, whilst the latter implies those whose level of necessities do not reach half of that of the poor. It is the destitute or the so-called hard-core poor who should receive more attention. The distinction between the poor and the destitute has been very clearly defined for the development of a proper approach to poverty eradication in Islam, to which we shall turn now.

Islam recognizes differences in individual human potentials because each is endowed with different types and levels of abilities. That no two individuals areidentical is proof of the material fact that no two individuals have identical abilities. It is such differences that will eventually bring about income and wealth inequalities in societies, even if there is an egalitarian society to start with (Chapra, 1992).

Having recognized this phenomenon, Islam, from the beginning, has developed a socio-economic environment that would give sufficient emphasis to the alleviation of poverty instead of simply trying to redistribute income and wealth or reduce inequalities. Of course, it cannot be denied that reduction of inequalities would also lead to alleviation of poverty (especially relative poverty) to a certain extent. However, if there are two policies, both of which aim at alleviating poverty, then the one, which would improve distributional equity, should be chosen.

Until now, it has been seen that in Islamic beliefs, poverty and inequality reduction are recognized as some of the important goals. On the other hand, components of human capital like health and education are highly valued in this religion and are actually recognized as needs of people. In further discussion, we try to show that improving the components of human capital, as expected, will decrease the income inequality and poverty in the Islamic world.

LITERATURE REVIEW

Before going in detail, through the empirical works, it proves useful to review the recent literature on human capital. A close investigation through the related works shows that the idea of human capital is not a new phenol-menon. The concise encyclopedia of economics refers to the work by Adam Smith and Alfred Marshal, regarding human capital as the roots of the human capital theory. The father of economics, Adam Smith, in his book, Wealth of the nation (1776), presented the idea of a continuous job search on the basis of one's capacity which leads to the theory of the compensating wage differentials, and then to human capital theory. Marshal (1920) identified knowledge and organization as components of the capital, and described knowledge as the most powerful engine of production.

The neo-classical Human Capital theory emerged from the Growth Theory by Solow (1956) who took labor as an input and assumed constant return to scales in the production function. Solow's model was later criticized on the bases of the inequality between the rate of returns from human capital and physical capital and hence, Romer (1986) introduced the concept of increasing return to scales in order to equate the returns from human capital and the physical capital. Lucas (1988) found externalities from the human returns, Acemoglu (1996, 1997) identified the additive nature of the different types of externalities in the returns on human capital, and Moretti (2003) extended his work with the conclusion that the number of college graduates and the national income in the US are correlated.

Ben-Porath's (1967) work was limited to the sources of productive services and Mincer (1974) introduced the life cycle earning function in which he used the years of

schooling as a determinant of the human capital. Rangasaz (2002) added the schooling of the children and externalities within the human capital during the learning process. Rangasaz's work is important due to the use to the addition of existing physical and human capital stock and the time spent to gain educational experience, which was not mentioned in Mincer's model (1974).

Many other economists like Shultz (1963), Barro and Salai (1993), and Barro (2000) also found the effect of education on earnings. Krueger (1999) extended the work and found that due to improved schooling, the students not only learn more, which increases the human capital in them, but also, they are aspired to get a better job and higher earnings. The theory so far had the deficiency to explain the determinants of the human capital, and Heckman (2002) presented the idea of cognitive and non-cognitive skills, which are developed in the children, due to schooling and the mentoring.

Empirical works on human capital theory and its effects on economic and non-economic variables are not rare. Considering the 2004 version of the World Development Indicators to investigate the evidence of declining inequality versus economic divergence over the 1980 to 2002 period, Bourguignon et al. (2004) find that if one focuses on outcomes and not initial positions, inequality is declined, in this period, by most criteria. However, if one takes into account the mobility of countries and the impoverishment of about two dozen countries at the bottom of the distribution, then the evidence points to a worsening of the world income distribution. Taking into account a much longer period (1820 to 1992), Bourguignon and Morrison (2002) find a rapid increase in inequality until World War II and smaller increases between 1970 and 1992. Most inequality in the early 19th century was attributable to intra-country differences while later, was due to inter-country differences. Schultz (1998) estimates that approximately two-thirds of world income inequality since the 1970s is inter-country.

Using a sample of over 3,000 predominantly, poor pre-school age children from Ecuador, Paxson and Shady (2005) show that wealth and parental education have a positive impact on their cognitive ability. They also find that child health and measures of parenting quality are associated with better performance on young children's language ability. According to World Development Report (2008), one's opportunities may be affected by either the circumstances of one's birth, or membership in groups. Predetermined circumstances affect one's initial endowments in life such as private wealth, the human capital of one's parents, and access to public services and infrastructure. Group membership may cause one to berewarded differently due to discrimination based on gender, ethnic origin, religious belief, or sexual orientation.

Pradhan et al. (2003) decompose inequality in health status into within- and between-country inequality and finds that within-country variation in standardized height is the source of most inequality rather than differences between countries. Using estimates of average life expectancy for 169 countries, Goesling and Firebaugh (2004) show that inequality in life expectancy declined in the 1980s but then increased through the 1990s, due to declining life expectancy in sub-Saharan Africa, mainly caused by HIV/AIDS. On the other hand, the decline in life expectancy in Russia and other countries of the former Soviet Union is attributable to increased alcohol use and psychological stress brought on by an uncertain future (Brainerd and Cuttler, 2004).

It would be useful to review the literature about human capital components more specifically. One of the very important components of human capital is education status of a country. In their work, Becker (1962) and Mincer (1958) have approached household choices with respect to education in the same way as how the household makes other decision that is, based on optimization behavior. However, their common assumption that markets for educational loans are perfect is not tenable since human capital cannot be used as collateral with the abolition of slavery. Loury (1981) addresses this constraint when he develops a model with human capital as the only inter temporal good. Behrman et al. (1989) empirically show that constraints in the credit market may be responsible for educational differences.

Focusing on underdevelopment, Azariadis and Drazen (1990) show that a country can reach a steady state with or without investments in education, depending on whether or not the initial stock of human capital exceeds a critical threshold level. While there is two-way causality between human capital and income, there are evidence that education as an investment in human capital increases the future productivity of the individual. Psacharopoulos (1985) and Schultz (1988) show that the increase in earnings associated with additional education is twice as high in poor countries as in rich countries.

Strauss and Thomas (1995) focus on another component of human capital, that is, health and nutritional status. Their review clearly proves that these are important determinants of productivity and earnings in poor countries. Dasgupta (1993) suggests a model in which he shows that the linkages between nutrition and income lead to a vicious poverty trap. On the other hand, Thomas and Strauss (1997) find that different dimensions of health affect the wages of both men and women in urban Brazil.

Considering and focusing on developed countries, Coulombe and Tremblay (2001) attribute regional convergence of per capita income in Canada for the 1951 to 1996 period to the convergence process of human capital indicators based on the percentage of the population who have at least a university degree. On the other hand, Yao et al. (2005) find no evidence of growth convergence in per capita gross domestic product, income and expenditure across Chinese provinces. Their study however, does not look at whether or not there is

convergence of human capital and if this is a factor explaining the failure of regional growth convergence.

Taking into account, the idea presented in the development microeconomics literature that joint causation between income and human capital combined with increasing returns to investments in human capital leads to the vicious circle of poverty, in this paper, efforts were intensified to empirically analyze the effects of these variables on the extent of income inequality and poverty in Islamic world. Using a sample of 45 OIC economies, the study hypothesize that the income inequality in an Islamic country is a function of the following factors: life expectancy at birth; maternal mortality ratio; per capita gross national income; adult literacy rate; share of births attended by skilled health staff; and the prevalence of child malnutrition. The study then use the same variables plus the infant mortality rate and primary school completion rate in a multivariate regression, explaining cross-country variations in poverty incidence. Finally, to allow for the joint causation between income and human capital, the study include interaction variables in both models and expect superior econometric results (Chattefuee, 2006).

THE ECONOMETRIC MODEL

Assuming that various factors have linear effect on inequality in an Islamic country, the following model can be proposed:

$$IN = \beta_0 + \beta_1 LE + \beta_2 MM + \beta_3 GNI + \beta_4 AL + \beta_5 SB + \beta_6 MN + \varepsilon \quad (1)$$

In the presented model, IN is Gini index, various years while life expectancy at birth (LE) is number of years a newborn infant would live if patterns of mortality prevailing at its birth were to stay the same throughout its life in 2008. Maternal mortality (MM) is the number of women who die from pregnancy-related causes during pregnancy and childbirth per 1, 00,000 live births in 2008. Income (GNI) is per capita purchasing power parity gross national income, in 2008. Adult literacy rate (AL) is the percentage of persons aged 15 and above, who can, with understanding, read and write a short, simple statement about their everyday life, in 2008. Skilled birth (SB) is percentage of deliveries attended by personnel trained to give the necessary supervision, care, and advice to women during pregnancy, labor, and the post-partum period; to conduct deliveries on their own; and to care for newborns, mean of 2000 to 2008. Malnutrition (MN) is percentage of children under five whose weight for age is less than minus two standard deviations from the median for the international reference population ages 0 to 59 months (2000 to 2008).

The maternal mortality ratio variables are estimates coming from a regression model developed by the World Health Organization (WHO) and UNICEF, which must be pointed out. The model hypothesizes that maternal mortality is a function of fertility, birth attendants, and HIV prevalence. As a result, the study suspects that this independent variable will be strongly correlated with the fifth variable, which is, the births attended by skilled health staff. This variable is used as a proxy for one of the components of health, which itself is a component of human capital. It is clear that the higher the life expectancy at birth, the lower the inequality; but the higher the number of women who die from pregnancy-related causes during pregnancy and childbirth per 1, 00,000 live births, the higher the inequality. It is because of the fact that the poor women

in developing countries have higher fertility; but cannot afford to have their births attended by skilled health staff. As a result, they are more likely to be HIV-positive and their deaths prevent them from contributing to output and thus, their country is more likely to remain poor. A positive sign for the coefficient estimate on this variable is thus expected.

Although the average level of income in an Islamic economy may not be a precise measure of the income inequality, by and large, as economies grow, the incidence of inequality may be lessened due to the trickle down effect, which is mentioned in the economic literature. The study thus, expects a negative sign for the purchasing power parity gross national income per capita variable.

The adult literacy ratio is included in the model to explain cross-country variations in income inequality. The study expect the higher the ratio, the lower the Gini index. It is quite natural, since illiterate people are more probable to get in poverty trap and hence deepen their distance from the rich. The percentage of deliveries attended by personnel trained to give the necessary supervision, care, and advice to women during pregnancy, labor, and the post-partum period, to conduct deliveries on their own, and to care for newborns is a good indicator of a health system's ability to provide adequate care for pregnant women. Good pre- and post-natal care improves maternal health and reduces maternal and infant mortality. Dao (2004) finds that lowering infant mortality does lead to a reduction in fertility rate in developing countries, which has positive implications for women's health. This in turn helps smoothen the gap between the rich and the poor. The study thus, expects the coefficient estimate on the share of births attended by skilled health staff variable to have a negative sign.

The last component of health status (hence, the human capital) in the analysis, is the prevalence of child malnutrition as measured by the percentage of children under five whose weight for age is less than minus two standard deviations from the median for the international reference population ages 0 to 59 months. According to the WHO, the most common indicator of malnutrition is the proportion of children who are underweight. It has been argued that even being mildly underweight may increase the risk of death and inhibit cognitive development in children. In addition, the problem is perpetuated from generation to generation, as undernourished mothers tend to have low-birth-weight babies. This is likely to give rise to income inequality in Islamic countries. The study therefore, expects a positive sign for the coefficient estimate on the child malnutrition variable.

Having gone over the inequality matter, it is time to examine how significant the same explanatory variables are in explaining cross-country variations in poverty, using the same sample of Islamic economies. Again, assuming that these variables linearly affect poverty in an Islamic country, the following statistical model can be stated:

$$P = \beta_0 + \beta_1 LE + \beta_2 MM + \beta_3 GNI + \beta_4 AL + \beta_5 SB + \beta_6 MN + \beta_7 IM + \beta_8 SC + \varepsilon \quad (2)$$

Here, poverty (P) is a percentage of the population under the national poverty line, various years; IM is number of deaths to children under 12 months of age per 1,000 live births, in 2008; SC is percentage of students completing the last year of primary school, in 2008; And all remaining variables are defined as earlier stated.

It is expected that all explanatory variables will affect poverty in the same way as they would inequality. In addition, as infant mortality among poor countries rises, there was need to expect fertility to rise there as well, thus, raising poverty. On the other hand, a higher primary school completion rate is expected to raise the level of human capital in an Islamic country and, as a result, may decrease poverty incidence.

Undoubtedly, as Bardhan and Udry (1999) pointed out, poverty is persistent in every poor country, and in several instances, there is a

Table 1. Dependent variable: income inequality (without interaction variables).

Variable	Coefficient estimate	t-statistic
Intercept	51.966	2.439
LE	-0.258	-2.597*
MM	0.019	2.469*
GNI	-0.003	-1.123
AL	0.358	1.328
SB	-0.423	-2.394*
MN	-0.563	-3.865*

*Significant at the 5% level; adjusted R^2 = 0.534.

Table 3. Dependent variable: income inequality (with interaction variables).

Variable	Coefficient estimate	t-statistic
Intercept	44.142	3.832
LE	-0.258	-2.597*
AL.GNI	0.003	2.886*
MN	-0.356	-3.699*
MM	0.045	3.391*
SB.GNI	-0.004	-3.279*
MM. GNI	-0.0002	-1.229

*Significant at the 5 percent level; adjusted R2 = 0.618.

Table 2. Dependent variable: poverty (no interaction variables).

Variable	Coefficient estimate	t-statistic
Intercept	o.317	1.345
LE	-0.247	-1.22
MM	0.00008	1.587
GNI	0.00004	3.454*
AL	0.006	1.465
SB	-0.003	-1.968*
MN	-0.003	-1.233
IM	0.0006	0.976
SC	-0.0006	-0.898

*Significant at the 5% level; adjusted R^2 = 0.554.

high degree of income inequality. A poverty trap is created when relatively wealthy individuals can remain wealthy by investing in human capital and, as a result, receive sufficiently high incomes, whereas poor people remain poor because they cannot afford to invest in human capital and thus earn low incomes. To capture the joint causation of human capital investment and income we choose to include interaction variables in both income distribution and poverty models.

RESULTS

Least-squares estimates of regression coefficients in Equation (1) for a sample of 45 OIC Islamic countries are presented in Table 1. The study observes that all variables, except adult literacy and purchasing power parity per capita gross national income, are statistically significant at the 5% level. As expected, due to multi-collinearity among independent variables, the coefficient estimates on adult literacy and child malnutrition do not have the expected sign.

From the table, we can conclude that if the number of years a newborn infant would live (if patterns of mortality prevailing at its birth were to stay the same throughout its life) increases by one year, the inequality will reduce by 0.258. Similarly, a one-woman increase in the number of those who die from pregnancy-related causes during pregnancy and childbirth per 1, 00,000 live births, all else

equal, is expected to lead to a 0.019 increase in Gini index. On the other hand, a one-percent increase in the number of deliveries attended by skilled health staff is expected to result in a reduction of 0.423 in inequality. As the percentage of children under five whose weight for age is less than international standards, increases by one percent, we would expect the inequality to decrease by 0.258.

Least-squares estimates of regression coefficients in Equation (2) (for the same sample of Islamic countries) are presented in Table 2. The goodness of fit of the model is reasonably good as indicated by the value of 0.554 of the adjusted coefficient of determination. The study observed that only per capita gross national income and the share of births attended by skilled health staff are statistically significant at the 5% level. This is undoubtedly due to the severe multicollinearity among independent variables, which may also result in the coefficient estimates on adult literacy, per capita gross national income, and child malnutrition, having the wrong sign.

An increase in the number of deliveries attended by skilled health staff is expected to lead to a reduction in poverty. On the other hand, as per capita gross national income increases by one hundred dollars, we would expect the fraction of the population living below the national poverty line to decrease by 0.00004 of a percent. The regressions results when interaction variables are included in the model are shown in Table 3, explaining cross-country variations in inequality. The study noted that the goodness of fit of the model to the data is better as indicated by the higher value of 0.618 of the adjusted coefficient of determination. It observes that all variables with the exception of the interaction between the maternal mortality ratio and per capita gross national income are statistically significant at the 5% level or lower. As in the case of the model without interaction terms, the coefficient estimates on adult literacy and child malnutrition do not have the expected sign.

A least-squares estimate of regression coefficients for the poverty model is presented in Table 4. The inclusion of interaction variables improves the explanatory power of the model substantially as shown by the high value of

Table 4. Dependent variable: poverty (with interaction variables).

Variable	Coefficient estimate	t-statistic
Intercept	-0.634	-2.387
LE	-0.259	-2.599*
AL.GNI	-0.00002	-3.356*
MM	0.00007	3.489*
SB.GNI	-0.000003	-1.168
GNI	0.0006	3.498*
IM.GNI	-0.000006	-2.989*
SC	0.005	2.915*
SC.GNI	-0.00006	-3.656*
IM	-0.004	4.173*
AL	0.006	1.633

*Significant at the 5% level; adjusted R^2 = 0.672.

0.672 for the adjusted coefficient of determination. While t-tests seem to indicate that some independent variables are not statistically significant, this is primarily due to the high degree of multicollinearity among these variables. Whereas the coefficient estimate for adult literacy has the wrong sign, that for the interaction term between this variable and per capita gross national income does have the expected sign.

The interpretation of the results is straightforward. For example, an increase in the maternal mortality ratio tends to worsen the poverty in an Islamic country. While the share of deliveries attended by skilled health staff exerts a negative effect of poverty, the coefficient estimate for the per capita gross national income variable does not have the expected sign. This could be due to a simultaneity bias or a high degree of multicollinearity among explanatory variables, especially when interaction variables are included in the statistical model. Infant mortality rate also affects negatively the distribution of income and this variable is strongly statistically significant. Both primary school completion rate and its interaction with income are strongly significant even though the coefficient estimate on the former has the wrong sign.

CONCLUDING REMARKS

According to Islamic principles, poverty and inequality reduction are recognized as some of the important goals of any Islamic government. On the other hand, components of human capital like health and education, are highly valued in this religion, and are actually considered as needs of people.

However, a quick glance at the current situation of the Muslim countries show something different. The reality is that there is a big gap between Islamic teachings about income inequality and poverty, and the present condition of Islamic countries considering these two. Having gone over the international data about the economic status of Muslim countries, one can easily recognize that the majority of them are developing countries with high level of income inequality and poverty. There lies a question: what should Islamic countries do to solve their problems considering poverty and income distribution? It seems that there are quite different measurements to solve these problems. One of them is enhancing human capital, like education and health (as indicated in Islamic teachings). In other words, the theory is that improving the components of human capital in the Muslim world, will reduce poverty and change income distribution for better.

To prove this claim empirically, the present study has examined the impact of the various components of human capital on the income inequality and poverty rate in Islamic countries. The study has used a statistical model and data from a sample of 45 OIC Islamic countries to empirically analyze the impact of several explanatory variables on the extent of income inequality and poverty. It observes that the results are more robust when interactive variables are included in the model. It is time to make some policy recommendations:

1. In view of the fact that adult literacy ratio influences both income inequality and poverty in Islamic countries, it is important for governments in these countries to introduce and implement programs designed to fight illiteracy.
2. In order to reduce both income inequality and poverty, governments in Islamic countries need to provide sufficient care for pregnant women. Doing so would also reduce the number of women who die from pregnancy-related causes during pregnancy and childbirth.
3. Efforts should continue to reduce the prevalence of child malnutrition in order to alleviate poverty even though this may not result in an equal distribution of income.
4. Efforts to reduce infant mortality should continue, and the policies in this area must cover a large segment of population. Programs considering prenatal care and better infant nutrition should be of special focus; these actions are expected to result in better income distribution.
5. Economic growth and development in itself will lead to less poverty and may bring about an equal distribution of income in an Islamic economy.
6. Finally, primary educational opportunities bring about a lessening of income inequality in Islamic countries.

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