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# **Developing an Index of Socio-Economic Development Consistent with Maqasid Al-Shari'ah**

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# Developing an Index of Socio-Economic Development Consistent with Maqasid Al-Shari'ah

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## Abstract

*In the economic development literature, both the definition and scope of economic development has gone through significant changes. Initially, economic growth and economic development were synonymous terms and per capita income was a sufficient enough barometer for informing about the level of economic development. Then, focus has shifted to human development and now towards sustainable development. Human Development Index (HDI) is the most widely used index for assessing level of economic development; however, it does not account explicitly for environmental degradation, resource depletion, income distribution and poverty. This study strives to assist in building a comprehensive index that covers these elements which are considered important for ensuring sustainable development and that are also reflective of Maqasid Al-Shari'ah. Our findings represent striking differences between HDI and Islamic HDI (I-HDI) rankings. Oil rich Muslim countries go several places down in I-HDI as compared to their HDI rankings. Similarly, countries with political unrest do much worse in I-HDI than in HDI. Several rich countries of Latin America and Europe due to high debt burden, unemployment rate and income inequality rank low in I-HDI as compared to their standing in HDI. Overall, the results indicate that Muslim countries are themselves far behind in meeting the ideals of Maqasid-e-Shari'ah and ensuring sustaining development.*

**Keywords** *Economic Development, Poverty, Income Inequality, Income Distribution, Sustainable Development, HDI, Islamic HDI, Islamic Economics*

**JEL Codes** L38 I31 O10

## 1. Introduction

The world today represents stark realities about material progress. On one hand, there are billions of people in abject poverty whereas; a small minority has majority ownership over resources.

Value neutral economic pursuits devoid of ethical considerations lack a guiding mechanism to nurture the good virtues among human beings. Hence, it is no surprise that famine, death from hunger and debt enslavement is the fact of life for the three quarters of the people not because that overall, the societies have scarce resources, but because the distribution of resources is inequitable.

It is ironic that expenditure on reducing fat is more than expenditure on reducing hunger. Some sport stars and musicians earn equivalent sum as compared to some of the population of entire countries, but yet, what they provide in the market system is adjudged efficient allocation of resources as long as the other rich people can put up dollar votes for their provision.

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Islam as a comprehensive doctrine not only offers basis of such a social contract, but also defines the purpose of human existence. However, we confine the discussion in this paper to only analyze its economic principles which is a component of its social philosophy.

In mainstream economic literature, the development discourse has taken several steps in the right direction from an exclusive focus on economic growth, belief in social utility of greed and trickledown theory to now embracing humans as means and ends of development. While the concept of human capital development and sustainable development are richer than the exclusive focus on economic growth, the focus in 21<sup>st</sup> century should now also lift from a human centric focus of development to an ecological balance now and in future. Na'iyah (2007) suggests that the effective solution to the environmental problems lies on the overall worldview which spells out the relationship between man, nature and his Creator.

It is agreed in almost all cultures, comprehensive doctrines and social contracts that freedom must not be suppressed in many personal matters where social harm is not caused. But, that freedom must be checked and balanced with responsibility. ASTRÖM (2011) explains that in a secular paradigm, people have the rights of limitless ownership without taking into account the responsibilities towards society and humanity.

What can or should make people more responsible? Can risk averse nature of humans in a Rawlsian framework be a sufficient mechanism in all cases to ensure equity and justice without comprising freedom? Should there be direct intervention through law by society?

Calling for stronger institutions is the right policy advice. But, achieving that would necessarily involve strengthening the value system and a binding force that encourages ethical behavior in society. That is where, role of a conditioning mechanism is very important. It could be law or belief in a shared philosophy that can give birth to a credible social contract.

What will further be helping is having such a comprehensive doctrine that not only helps in coming up with a stable social contract but that can also define the purpose of human existence so that the social contract and its values/principles will not be operative only in particular situations, rather they will become part of society's core values at the micro level.

Islamic worldview expands the responsibility of humans to society, future generations, and other living species on planet with afterlife accountability for every intentional act done by every human being. Islamic worldview regards humans as trustees of Allah for whatever material resources and mental faculties they come to possess in this world.

Mortazvi (2004) explains that Islamic economics is a value-driven discipline replete with moral values that limits individual's consumption, and imposes significant social and religious responsibilities on individuals as guardians of the natural environment for future generations.

In this study, we proceed as follows. Section 2 presents concept of human welfare in Islamic framework. In section 3, we discuss the construction and methodology of I-HDI, the variables

used, rationale for their selection and data sources. In section 4, we present the results of HDI and I-HDI and analyze the key findings of the study.

## 2. Human Welfare in Islamic Framework

Sadeq (1987) explains that Islam emphasizes the achievement of human welfare which is more comprehensive than economic welfare. Chapra (1999) also explains that while economic development is indispensable, it is not sufficient to realize overall human well being by default.

In recent years, even the western concept of development has recognized the wider dimensions of human development and the role of institutions (Mirakhor & Askari, 2010).

However, human welfare in Islam encompasses economic welfare, but comprises much more than that. The achievement of human welfare is sought in both aspects of human life, i.e. worldly life and eternal life hereafter.

Hence, the human welfare function can be represented by:

$$W_h = f(\alpha W_t, \alpha^m W_e)$$

Where

$W_h$  is total human welfare in both aspects of human life.

$W_t$  is human welfare in worldly life.

$W_e$  is human welfare in eternal life hereafter.

We can further explain this function to define  $W_t$  and  $W_e$ . Both these functions are defined as follows:

$$W_t = f(Z_t)$$

Where  $Z_t$  is a vector of variables which belong to the category of ‘individual specific positive utility gaining choices’.

The constrained set which is a union of three sets is defined as follows:

$$C_S = \{ C_{worship} \} \cup \{ C_{self} \} \cup \{ C_{society} \} \cup \{ C_{people} \}$$

$$C_{worship} = \{ \text{five times prayers, one month fasting, obligatory charity, hajj pilgrimage once} \}$$

$$C_{self} = \{ \text{Acts which harm a person's own ethical and spiritual existence} \}$$

$$C_{society} = \{ \text{Acts which harm society and its institutions} \}$$

$$C_{people} = \{ \text{Acts which harm other people, their rights, freedom or property} \}$$

Hence, Islam does not deny individuals to fulfill their specific desires they can achieve in career, marriage, family life, business, eating variety of food, wearing variety of clothes, travelling, fine arts etc. It also does not deny temporary indebtedness to achieve these things which can help smooth the intertemporal consumption in this world.

Where Islam intervenes is in identifying for our own benefits the ills in potential acts which may harm us and/or the society and hence reduce the overall human and societal welfare. It is possible that we feel temporary satisfaction in some potential acts, but their long term impact on our spiritual and ethical existence and collective impact on society may reduce the overall human and societal welfare.

We can define the eternal life welfare function as follows:

$$W_e = f(Z_e)$$

Where  $Z_e$  is a vector of variables which belong to the category of 'following Allah's commands which will bring non-decreasing positive utility gain in life hereafter'. These commands do not segregate a human's life in two compartments. Rather, these commands help the humans to live this worldly life in the best possible manner of obedience to Allah and while being responsive and sensitive to the duties that they have to carry out in different roles of life.

Eternal life has no constraint set. Hence, unlike the usual constraints in Economics which limit the optimum value of a function, our constraint sets in worldly life are welfare maximizing in the long run for individuals. The worship set also reinforces the commitment not to violate the other three sets of constraints. The last three constraints which belong to the category of Huquq-ul-Ibaad are necessary conditions for welfare maximization of an individual. When they are not violated by individuals, the society also benefits. Islam emphasizes that humans should embrace spiritual rationality as a compliment to material rationality so as to achieve total human welfare.

The achievement of lasting happiness and non-decreasing positive utility will only happen through maximizing both the functions, especially the eternal life function.

For ensuring no corner solution, we shall have both  $W_t > 0$  and  $W_e > 0$ .

Plus, Islam requires people to live modest but decent lives and fulfill their own needs and family needs. Islam does not permit monasticism and does not encourage celibacy. Hence,  $W_t$  not only shall be positive, but also achieve a threshold 'w' where the 'w' represents welfare from minimum level of standard of living that qualifies as balanced standard of living within bounds of Islamic injunctions without lavishness and violating the constraint sets.

The constraints of the life may sometimes require a tradeoff between the two functions. In such instances, the trial is to choose the right path ordained by Allah so as to achieve the maximum human welfare in the eternal life.

It is because of the parameter ' $\alpha$ '. Things that we enjoy in this world will be replaced by similar things in afterlife, but they will provide much more utility and they will not be finite nor will our

satiation at any time will have binding constraints. The difference between the utility of same bundles traded off in this life for afterlife will be given by the positive multiplier in the exponent of parameter ‘ $\alpha$ ’ that is part of eternal life function.

### **3. Islamic Human (Economic) Development Index - I-HDI**

#### **3.1. Need for a Separate Index**

The benefit of using an index is that it enables us to get representation of reality by looking at summary measures. It can be used for relative comparison and assessment of policies, actions, performance and achievement in different socio-economic contexts.

In the early literature on development, per capita GDP was considered a sufficient enough barometer to judge the level of development in a country. Back then, the long run macroeconomic literature focused on capital accumulation as one of the primary instruments to ensure development. Haq (1963) gave the concept of functional inequality in 1960s. Based on his praise for Harrod (1939)-Domer (1946) and Solow (1956) growth models, he reasoned:

*“There exists, therefore, a functional justification for inequality of income if this raises production for all and not consumption for a few. The road to eventual equalities may inevitably lie through initial inequalities.”*

However, in 1960s, functional inequality of income and social utility of greed could not ensure trickle down of economic growth benefits. Pakistan is a prime example of that failure. Despite exemplary growth in the 1960s, the country got divided. One of the prime reasons for that unfortunate episode was considered to be widespread regional disparities of income (Zaidi, 2005).

Haq (1995) later on accepted that humans are ‘means’ as well as ‘ends’ of any development process or initiative. He finally accepted that ‘Ends’ cannot be sacrificed for the future, even when benefits are certain, and ignoring ‘ends’ undermines the entire development process. HDI was developed by Mehboob-ul-Haq and Amartya Sen. It put the focus on human development, especially in the sphere of education and health besides per capita income.

But, during the last 30 years, a lot of other challenges have sprung up which require a renewed focus on environmental resource conservation, equitable income distribution, intergenerational equity and enhancing social infrastructure. Is rapid growth accompanied by equally rapid depletion of environmental resources and high fiscal deficit and public debt burden a truly admirable growth model? Just at the right time, the concept of sustainable development has come to the shore. It is realized that for growth to be sustainable, the growth shall provide widespread benefits and must not come at the expense of worsening income distribution and environment quality.

In light of this need, we propose a new index that is consistent with ethos and philosophy of Islam when it comes to human development in the economic sense of the term. The spiritual sense of human development and welfare would encompass purification of soul and will reflect

in all human endeavors and relations, be they economic, social or personal. Hence, we limit our scope to make an effort in building an index that can at least reflect human development in the economic sense of the term.

There has been another successful and noteworthy attempt by Anto (2010) to construct an I-HDI. However, we try to make the exercise simpler by removing duplicity of similar indicators. Our study also includes non-Muslim countries that belong to high income and middle income categories and hence it will be possible to see the contrast between I-HDI and HDI in intergroup comparisons.

### **3.2.Sampling Methodology**

We had taken three groups of countries, i.e.

- 1) High Income Countries Excluding Muslim Countries
- 2) Middle Income Countries Excluding Muslim Countries
- 3) Muslim Countries

For the definition of high income and middle income, we had followed the classification in WDI database. We had to exclude some countries due to data unavailability. But, in all, we had taken data for 39 countries in high income category, 27 countries in middle income category and 54 countries in the Muslim category.

### **3.3.Definition of Data**

In Table 1, we report the variables that are used in constructing I-HDI. We have categorized these variables in three categories:

- 1) Human Capital
- 2) Income
- 3) Social Maqasid of Shari'ah

**Table 1: Definition of Variables**

<b>Indicator Name</b>	<b>Category</b>
School enrollment, secondary (% net)	Human Capital
Health expenditure per capita, PPP (constant 2005 international \$)	Human Capital
Health expenditure, total (% of GDP)	Human Capital
Hospital beds (per 1,000 people)	Human Capital
Nurses and midwives (per 1,000 people)	Human Capital
GNI per capita, Atlas method (current US\$)	Income
GINI index	Income
Poverty Rate	Income
CO <sub>2</sub> emissions (metric tons per capita)	Social Maqasid
Labor participation rate, male (% of male population ages 15+)	Social Maqasid
Unemployment, male (% of male labor force)	Social Maqasid
Strength of legal rights index (0=weak to 10=strong)	Social Maqasid
Total Public Debt to GDP Ratio (% of GDP)	Social Maqasid

Data had been taken from World Development Indicators (WDI). For each country, average value of each variable is taken for the period 2008-2012. It enables us to overcome any gaps in reporting of data and to avoid any irregularity or outliers. For some countries, where data is missing, we had taken data from CIA Factbook.

### **3.4.Rationale for Selection of Variables**

Al-Ghazali (d. 505/1111) divided Maqasid-e-Shari'ah into five categories: Protection of religion, life, reason, progeny and property. Siddiqui (2009) rightly argued that objectives should not be limited to the protection from harm, but should also include securing benefits. Hence, one can include basic freedom, justice, equity, poverty alleviation, equitable income distribution etc to name a few important concepts.

In the WDI database, there are hundreds of indicators available. The benefit of indices is to give summary measures with few important indicators so that the information content reflect and approximate complex reality. Use of small number of indicators also enables maximum data availability from many countries.

Hence, we have tried to include few specific indicators in each category with a view to ensure that Maqasid-al Shari'ah are adequately reflected in indicators.

In the human capital category, we combine different health and education indicators. Per capita availability of hospital beds and nursing staff can enable us to account for current infrastructure availability for boosting human capital. Health expenditure as percent of GDP can enable us to know the policy direction. Hence, countries can differ in their initial endowments and infrastructure, but they can catch up with policy directed towards human capital development. Likewise, for education, we take net enrollment rate in secondary school.



In the income category, the three indicators we choose take three different objectives into account. It is possible that a country has high per capita income as well as high poverty rate and high inequality of income. Such a phenomenon is missed in HDI since only per capita income is taken in HDI construction. In line with Maqasid-e-Shari'ah, poverty rate and income inequality should also simultaneously reduce for income growth to mean and reflect any meaningful development.

In the social Maqasid category, we take five indicators. In line with Islamic social system in which men are made responsible to earn for their family, we take labor force participation rate for males. We must caution the reader that Islam does not disallow women to work and earn for their family. Indeed, they can, but they are not made responsible.

For assessing the economic policymaking, we also take unemployment rate as an indicator. Unemployment rate in recent years had been as high as 30% to 40% even in rich countries. Such phenomenon is not conducive for sustainable development. Very high unemployment will necessarily involve more taxation, more transfer payments and increased size of government. In times when fiscal deficit is high and economy is in a recession, this may not even be possible as the evidence from the recent European crisis has shown.

For intergenerational justice and equity, we also need to take account of excessive debt burdens taken by present generation that will be inherited by the future generations by default. We account for this by using public debt to GDP ratio. Not only excessive leveraging bad for economic reasons, but as per Islamic ethos and philosophy, unnecessary indebtedness is not encouraged.

For ensuring equity in environmental resource quality and quantity between present and future generations, environmental degradation must be taken negatively for its effect on sustainable development. We account for this by using per capita emission of CO<sub>2</sub>.

### **3.5. Construction Methodology**

In Table 2, we report the weights given to each indicator in each category. Within each category, the weight sum to unity. In the computation of index value for a country, one-third weight is assigned to each category. In equation (i), we present the formula for I-HDI:

$$I - HDI = \frac{1}{3}(\text{Human Capital}) + \frac{1}{3}(\text{Income}) + \frac{1}{3}(\text{Social Maqasid}) \quad \text{--- (i)}$$

**Table 2: Weights for Each Indicator**

<b>Indicator Name</b>	<b>Weights</b>
School enrollment, secondary (% net)	0.2
Health expenditure per capita, PPP (constant 2005 international \$)	0.2
Health expenditure, total (% of GDP)	0.2
Hospital beds (per 1,000 people)	0.2
Nurses and midwives (per 1,000 people)	0.2
GNI per capita, Atlas method (current US\$)	0.33
GINI index	0.33
Poverty Rate	0.33
CO2 emissions (metric tons per capita)	0.2
Labor participation rate, male (% of male population ages 15+)	0.2
Unemployment, male (% of male labor force)	0.2
Strength of legal rights index (0=weak to 10=strong)	0.2
Total Public Debt to GDP Ratio (% of GDP)	0.2

To normalize the index value, we use the following procedure in line with HDI:

$$\mathbf{Indicator\ Index\ Value} = \frac{\mathbf{Actual\ Value} - \mathbf{Minimum\ Value}}{\mathbf{Maximum\ Value} - \mathbf{Minimum\ Value}} \quad \text{--- (ii)}$$

For some indicators, the higher value has a negative interpretation, for instance, unemployment rate, Gini coefficient, CO<sub>2</sub> emissions and poverty rate. Index value for such indicators is taken with negative sign in the I-HDI Index value computation.

#### **4. Results & Findings**

In Table 3, we report the HDI and I-HDI values for high income countries. Country with HDI rank of 1 has highest level of human development relatively. These rankings are specific to 39 countries in our high income category. A country with HDI rank of 39 has the lowest level of human development relatively as compared to other countries in the group. I-HDI rank is interpreted the same way.

The last column takes the difference between HDI and I-HDI rank. If the difference deviates from zero in either direction, it represents that I-HDI offers some additional information content over HDI. Negative value of the difference shows that the country had a better rank in HDI as compared to I-HDI. Positive value of the difference shows that the country had a worse rank in HDI as compared to I-HDI.

Countries with very high unemployment rate and debt to GDP ratio rank low in I-HDI as compared to their ranking in HDI. For instance, Japan and Italy are ranked 11 and 14 places below their respective HDI rank. USA also goes down in I-HDI rank by 10 places. Countries like

Finland, Luxembourg, Latvia and Cyprus make significant jump in I-HDI by more than 10 places as compared to their ranking in HDI.

**Table 3: HDI and I-HDI Value & Ranking of High Income Countries**

Country Name	HDI Index Value	HDI Rank	I-HDI	I-HDI Rank	Difference
Australia	0.938	2	0.217	8	-6
Austria	0.895	17	0.191	12	5
Belgium	0.897	16	0.159	19	-3
Canada	0.911	11	0.133	20	-9
Chile	0.819	32	0.041	36	-4
Croatia	0.805	36	0.102	29	7
Cyprus	0.848	28	0.167	18	10
Czech Republic	0.873	26	0.125	24	2
Denmark	0.901	14	0.251	6	8
Estonia	0.846	29	0.103	28	1
Finland	0.892	20	0.263	2	18
France	0.893	19	0.175	15	4
Germany	0.92	5	0.173	17	-12
Greece	0.86	27	0.054	32	-5
Iceland	0.906	13	0.254	4	9
Ireland	0.916	7	0.192	11	-4
Israel	0.9	15	0.102	30	-15
Italy	0.881	23	0.041	37	-14
Japan	0.912	10	0.131	21	-11
Korea, Rep.	0.909	12	0.175	16	-4
Latvia	0.814	35	0.124	25	10
Lithuania	0.818	33	0.114	26	7
Luxembourg	0.875	24	0.207	9	15
Netherlands	0.921	4	0.231	7	-3
New Zealand	0.919	6	0.200	10	-4
Norway	0.955	1	0.291	1	0
Poland	0.821	31	0.129	22	9
Portugal	0.816	34	0.045	35	-1
Russian Federation	0.788	38	0.030	38	0
Singapore	0.895	18	0.054	33	-15
Slovak Republic	0.84	30	0.105	27	3
Slovenia	0.892	21	0.129	23	-2
Spain	0.885	22	0.101	31	-9
Sweden	0.916	8	0.252	5	3
Switzerland	0.913	9	0.257	3	6
Trinidad and Tobago	0.76	39	0.010	39	0
United Kingdom	0.875	25	0.177	14	11
United States	0.937	3	0.181	13	-10
Uruguay	0.792	37	0.047	34	3

In Table 4, we report the HDI and I-HDI values for middle income countries. Rankings in both HDI and I-HDI are interpreted the same way as before. These rankings are specific to 27 countries in our middle income category. Countries with high income inequality and poverty rate go down in rankings significantly. Argentina and Mexico go down by more than 10 places in I-HDI as compared to their HDI rank.

China by controlling its poverty rate and good performance on unemployment, labor force participation and low public debt burden goes up by 10 places in I-HDI as compared to its HDI rank. Interestingly, pretty much isolated economies like Fiji, St. Lucia and Thailand also go up by more than 10 places on I-HDI as compared to their HDI rank.

**Table 4: HDI and I-HDI Value & Ranking of Middle Income Countries**

Country Name	HDI Index Value	HDI Rank	I-HDI	I-HDI Rank	Difference
Angola	0.508	27	-0.036	25	2
Argentina	0.811	2	-0.008	21	-19
Belarus	0.793	3	0.111	4	-1
Belize	0.702	21	0.011	17	4
Botswana	0.604	26	0.014	16	10
Brazil	0.73	16	-0.010	22	-6
Bulgaria	0.782	6	0.125	2	4
China	0.699	23	0.038	13	10
Colombia	0.719	20	-0.014	24	-4
Costa Rica	0.773	9	0.046	11	-2
Dominican Republic	0.745	12	-0.011	23	-11
Ecuador	0.724	19	0.021	15	4
Fiji	0.702	22	0.053	9	13
Hungary	0.831	1	0.113	3	-2
Jamaica	0.73	17	0.011	18	-1
Macedonia	0.74	14	-0.039	26	-12
Mauritius	0.737	15	0.035	14	1
Mexico	0.775	8	0.004	19	-11
Montenegro	0.791	4	0.088	6	-2
Panama	0.78	7	0.043	12	-5
Peru	0.741	13	0.050	10	3
Romania	0.786	5	0.127	1	4
Serbia	0.769	10	0.103	5	5
South Africa	0.629	25	-0.079	27	-2
St. Lucia	0.725	18	0.068	8	10
Thailand	0.69	24	0.085	7	17
Venezuela	0.748	11	0.004	20	-9

In Table 5, we report the HDI and I-HDI values for Muslim countries. Rankings in both HDI and I-HDI are interpreted the same way as before. These rankings are specific to 44 countries in our Muslim countries group.

The most striking result is that none of the oil rich countries make a step up in I-HDI rank as compared to their HDI rank. All of them go down several places including Iran, Iraq, Kuwait and Saudi Arabia.

Another interesting finding is that Central Asian Muslim countries like Azerbaijan, Uzbekistan and Tajikistan improve their ranking on I-HDI as compared to their ranking in HDI. East Asian countries like Malaysia and Indonesia had also improved their ranking on I-HDI as compared to their HDI rank. These countries face much less acute macroeconomic imbalances and political unrest.

Muslim countries with political unrest like Iraq, Lebanon, Egypt, Syria and Yemen all go down several places in I-HDI rank. Countries that have got independence after warfare like Albania and Bosnia also shed places in I-HDI rank. African countries have mixed changes in I-HDI. Countries like Sierra Leone and Mali take a significant jump in I-HDI as compared to their HDI rank.

When combined rankings of HDI and I-HDI are taken for all three categories of countries in one place, we find several interesting findings:

- In HDI, Qatar rank is 32 and no Muslim country has a better HDI rank than this.
- In HDI, only 5 Muslim countries are ranked in top 50 and all are oil rich countries.
- In HDI, the bottom 30 countries includes 28 Muslim countries. However, we have not used low income countries in the sample. Hence, this does not mean that all Muslim countries are at bottom in an all countries list.
- In I-HDI, Azerbaijan rank is 25 and no Muslim country has a better I-HDI rank than this.
- In I-HDI, only 10 Muslim countries are ranked in top 50.
- In I-HDI, the bottom 30 countries include 19 Muslim countries. However, we have not used low income countries in the sample. Hence, this does not mean that all Muslim countries are at bottom in an all countries list.
- In both I-HDI and HDI, none of the Muslim country features in Top 20.

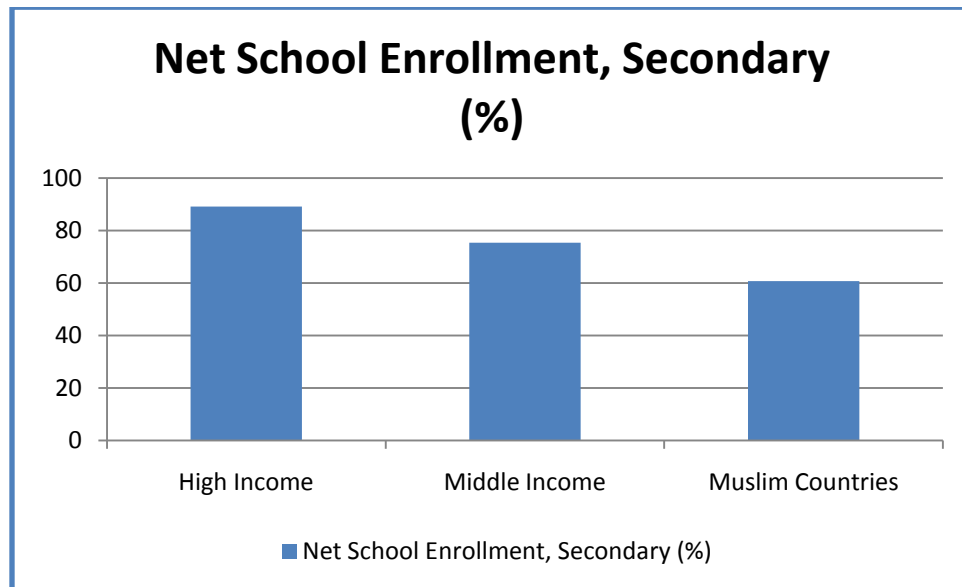
**Table 5: HDI and I-HDI Value & Ranking of Muslim Countries**

Country Name	HDI Index Value	HDI Rank	I-HDI	I-HDI Rank	Difference
Albania	0.749	8	0.047	15	-7
Algeria	0.713	15	-0.010	32	-17
Azerbaijan	0.734	12	0.128	1	11
Bahrain	0.796	3	0.079	4	-1
Bangladesh	0.515	27	0.046	16	11
Benin	0.436	35	-0.005	31	4
Bosnia	0.735	11	-0.003	30	-19
Cameroon	0.495	29	-0.029	36	-7
Chad	0.34	41	-0.058	41	0
Egypt	0.662	18	0.001	28	-10
Ghana	0.558	25	0.013	25	0
Guinea	0.355	39	-0.024	34	5
Guinea-Bissau	0.364	37	0.028	19	18
Indonesia	0.629	21	0.064	8	13
Iran	0.742	10	0.039	17	-7
Iraq	0.59	24	0.006	27	-3
Kazakhstan	0.754	7	0.127	2	5
Kenya	0.519	26	0.021	21	5
Kuwait	0.79	4	0.017	23	-19
Lebanon	0.745	9	-0.020	33	-24
Malaysia	0.769	6	0.075	5	1
Maldives	0.688	17	0.056	10	7
Mali	0.344	40	0.038	18	22
Mauritania	0.467	32	-0.086	43	-11
Morocco	0.591	23	-0.046	39	-16
Mozambique	0.327	42	-0.061	42	0
Niger	0.304	43	-0.002	29	14
Nigeria	0.471	30	-0.045	37	-7
Oman	0.731	13	0.073	6	7
Pakistan	0.515	28	0.009	26	2
Qatar	0.834	1	0.105	3	-2
Saudi Arabia	0.782	5	0.050	12	-7
Senegal	0.47	31	-0.027	35	-4
Sierra Leone	0.359	38	0.052	11	27
Sudan	0.414	36	-0.045	38	-2
Syria	0.648	20	0.020	22	-2
Tajikistan	0.622	22	0.049	13	9
Tunisia	0.712	16	0.015	24	-8
Turkey	0.722	14	0.048	14	0
UAE	0.818	2	0.067	7	-5
Uganda	0.456	34	0.024	20	14
Uzbekistan	0.654	19	0.058	9	10
Yemen	0.458	33	-0.054	40	-7

Next, we compare the average values of the indicators we had used in I-HDI and compare them across three categories of countries we had used in our study.

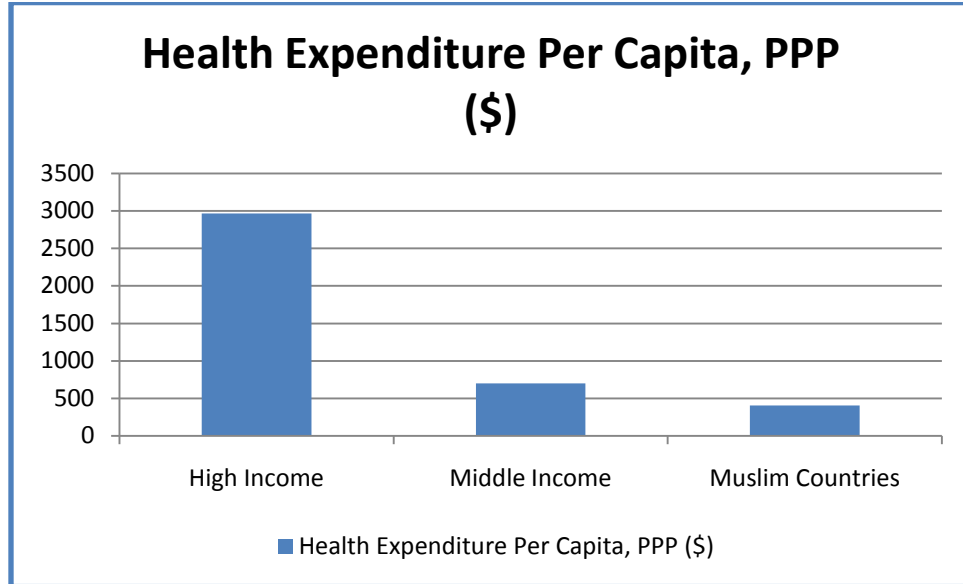
Muslim countries had on average low secondary school enrollment rate as compared to the high income and middle income countries.

**Figure 1: Net School Enrollment, Secondary (%)**



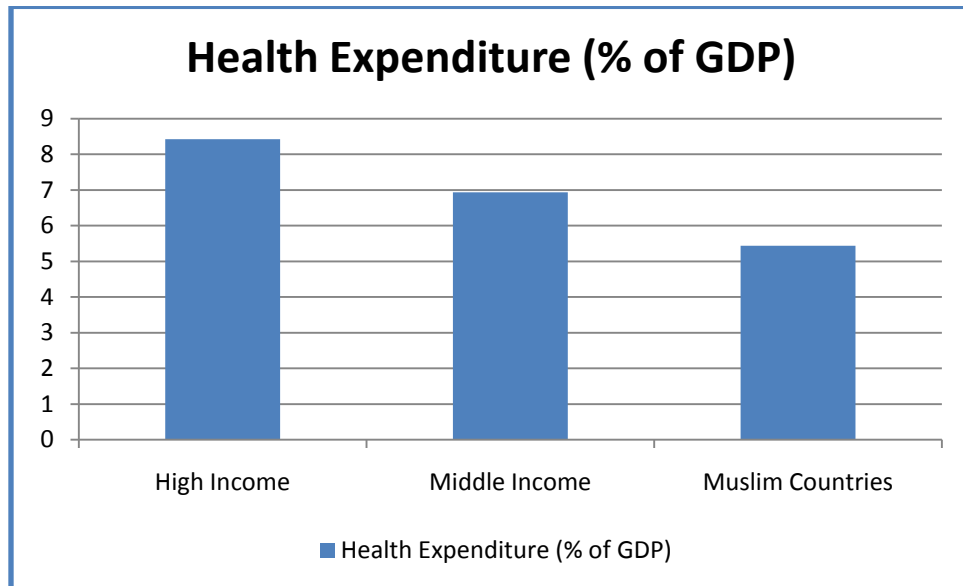
Muslim countries had on average very low health expenditure per capita as compared to the high income and middle income countries. However, this could be because of low per capita income in most Muslim countries.

**Figure 2: Health Expenditure Per Capita, PPP (\$)**



Adjusting for income, if we take health expenditure as percent of GDP, Muslim countries had on average lower value as compared to the high income and middle income countries.

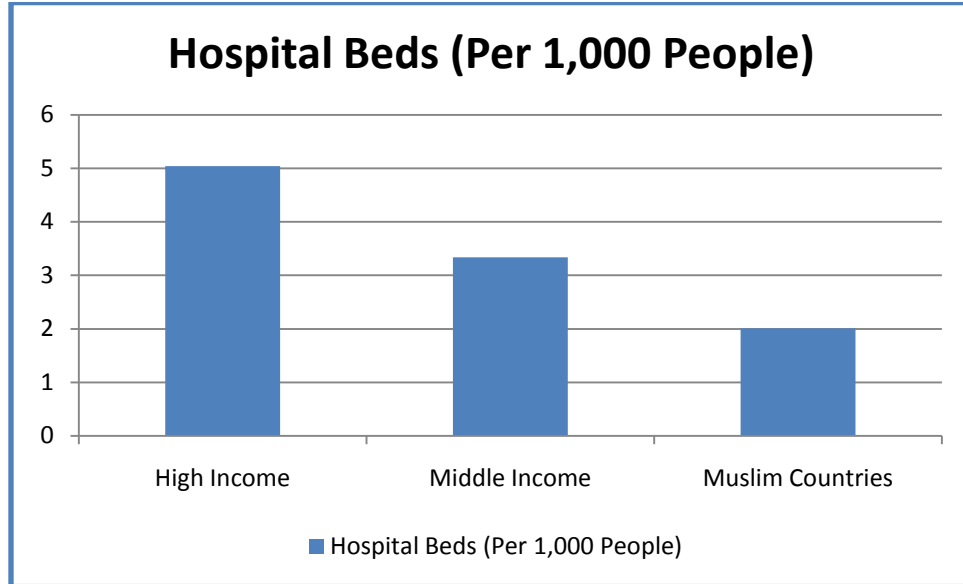
**Figure 3: Health Expenditure (% of GDP)**



Muslim countries had on average lower availability of health infrastructure as compared to the high income and middle income countries. This could partly be because of low per capita income, low health expenditure allocation as percent of total expenditure and high population growth rate in Muslim countries.

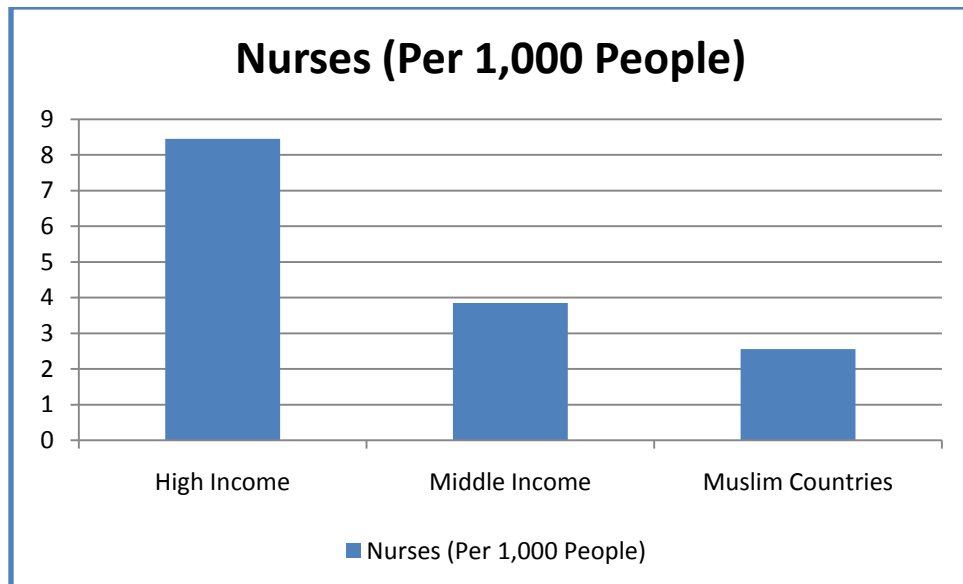


**Figure 4: Hospital Beds (Per 1,000 People)**



Muslim countries had on average lower availability of health infrastructure as compared to the high income and middle income countries. This could partly be because of low health expenditure allocation as percent of total expenditure and high population growth rate in Muslim countries.

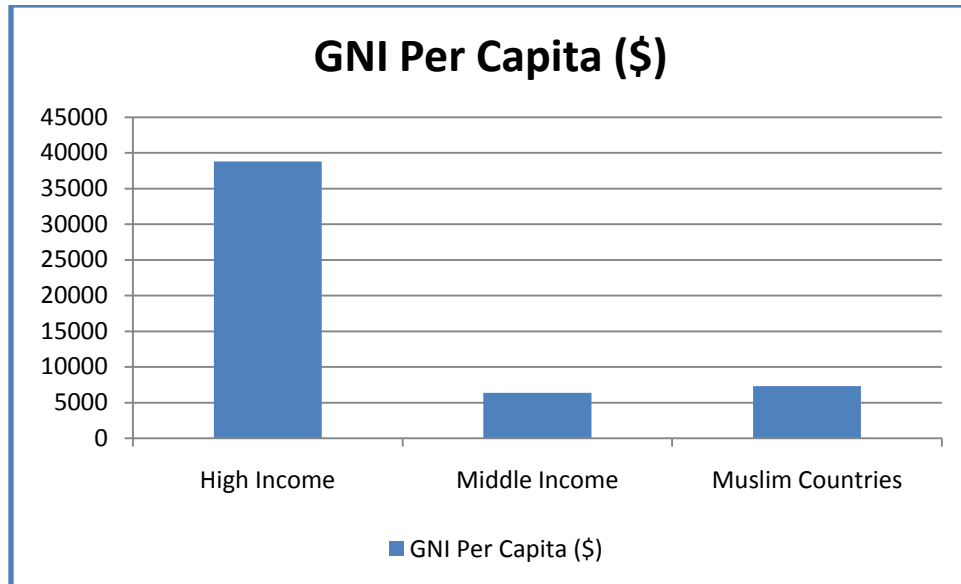
**Figure 5: Nurses (Per 1,000 People)**



Muslim countries had on average lower per capita income as compared to the high income countries. But, as compared to middle income countries, per capita income in Muslim countries is higher. This presents an interesting result that despite having higher per capita income than

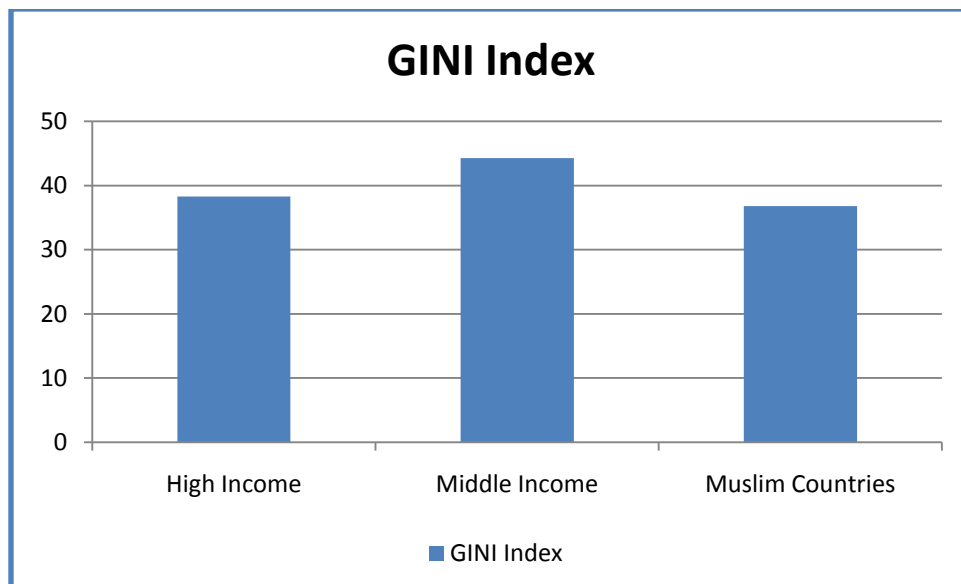
middle income countries, Muslim countries still lag behind them in all education and health related indicators.

**Figure 6: GNI Per Capita (\$)**



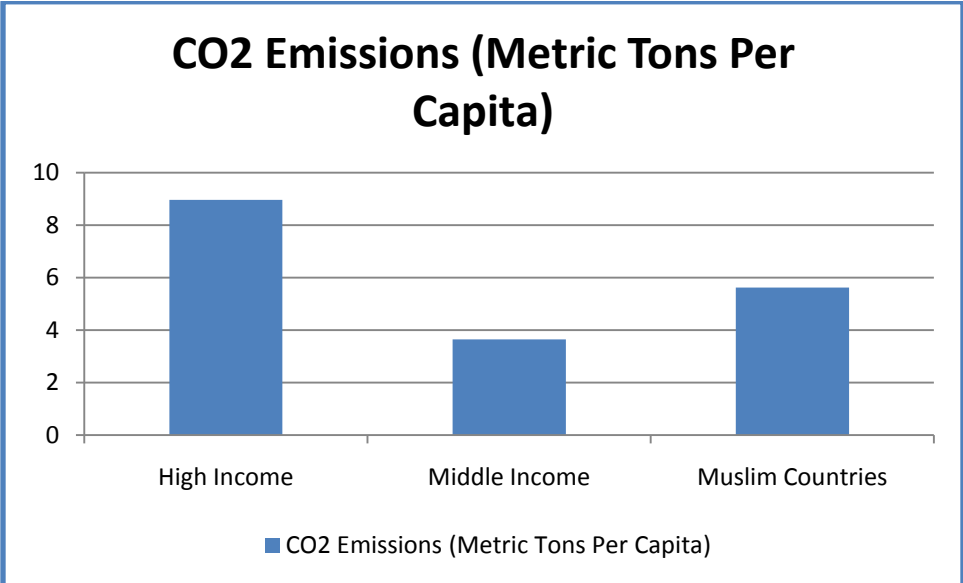
In terms of income inequality, Muslim countries do better than both high income and middle income countries. But, the margin is not as wide as it may have been expected a priori. By and large, Muslim countries also have interest based banking system as the primary means of financial intermediation between savers and firms. Capital markets are small and insignificant as compared to bank based intermediation. Hence, on income inequality, the performance is not as drastically different as is expected in an Islamic economy.

**Figure 7: GINI Index**



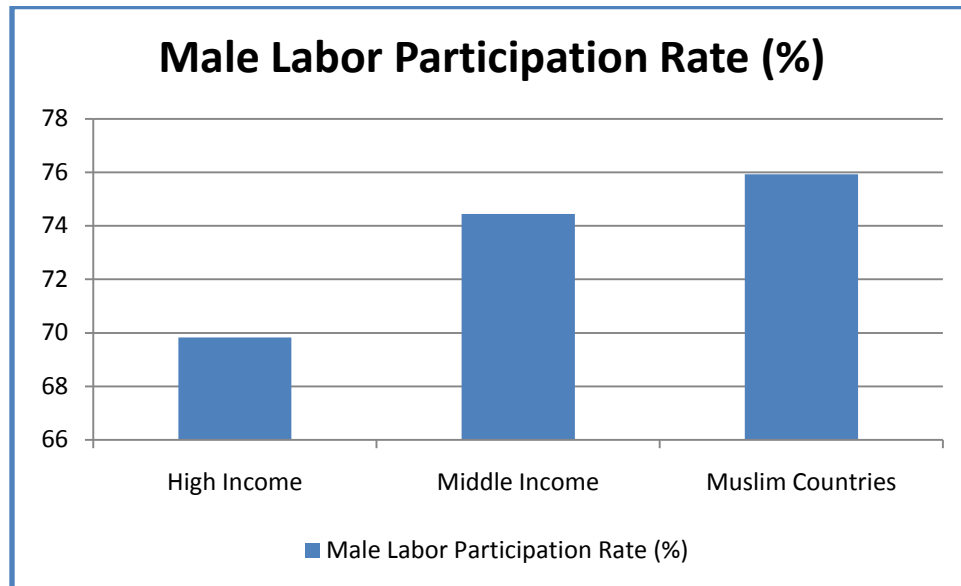
In terms of carbon emissions, Muslim countries have better performance as compared to high income countries. But, average income per capita multiple is 4 to 1 between high income countries and Muslim countries; whereas, carbon emissions multiple is 2 to 1. It means that adjusted for income, Muslim countries emit more carbon for each additional income per capita they earn. Most of the oil rich Muslim countries had not made serious efforts to diversify their economies and exports even though they enjoy advantageous potential to use solar energy alongside oil.

**Figure 8: CO<sub>2</sub> Emissions (Metric Tons Per Capita)**



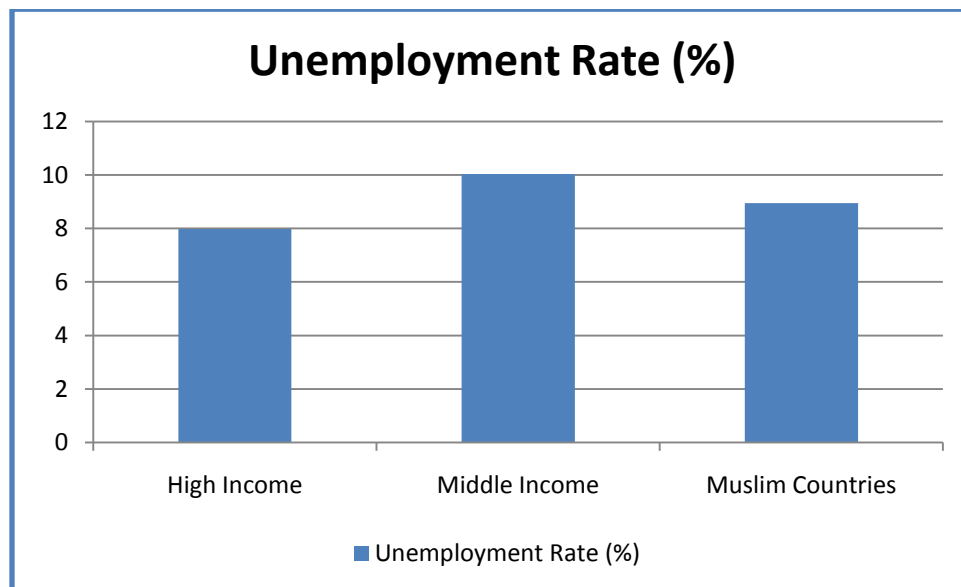
In terms of labor force participation rate for males, Muslim countries had done well. But, that may be partly due to insufficient transfer payments, low private insurance penetration and weak and insufficient public health insurance and facilities.

**Figure 9: Male Labor Participation Rate (%)**



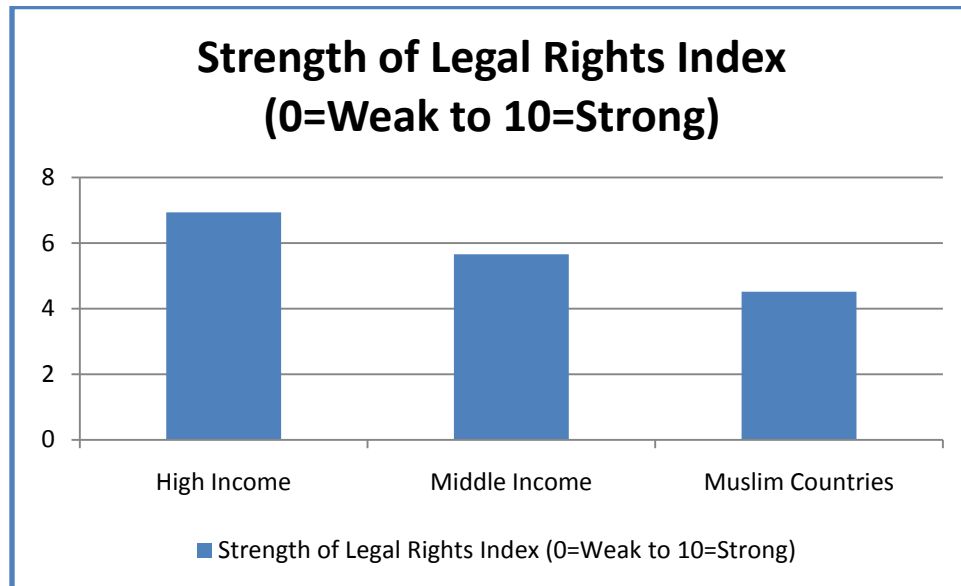
In terms of unemployment rate, Muslim countries are better than middle income countries. But, Muslim countries on average have higher unemployment rate as compared to high income countries.

**Figure 10: Unemployment Rate (%)**



Lastly, in terms of legal rights index, Muslim countries are behind both high income and middle income countries.

**Figure 11: Strength of Legal Rights Index (0=Weak to 10=Strong)**



## **Conclusion**

This study strived to assist in building a comprehensive index that covers important elements for ensuring sustainable development and that are also reflective of Maqasid Al-Shari'ah. Our findings represent striking differences between HDI and Islamic HDI (I-HDI) rankings. Oil rich Muslim countries go several places down in I-HDI as compared to their HDI rankings. Similarly, countries with political unrest do much worse in I-HDI than in HDI. Several rich countries of Latin America and Europe due to high debt burden, unemployment rate and income inequality also rank low in I-HDI as compared to their standing in HDI. Overall, the results indicate that Muslim countries are themselves far behind in meeting the ideals of Maqasid-e-Shari'ah and ensuring sustaining development.

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