

## ***Maqāṣid al-Sharī'ah: Are We Measuring The Immeasurable?***

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### **Abstract**

*Islam takes a broad and encompassing view of human development and asserts the centrality of achieving the Maqāṣid al-Sharī'ah in all human activities. The existing development indices do not completely conform to the normative judgments of Islam regarding the concept of development especially because of their disproportionate emphasis on the material aspect of the development and their disregard for the dimensions which are crucial for the world hereafter. This highlights the need for an index which accommodates the dimensions which are consistent with Maqāṣid al-Sharī'ah. This paper seeks to explore the conception of Maqāṣid al-Sharī'ah as a measureable concept, identifies the indicators relevant to these Maqāṣid, and develops a tentative multidimensional index which makes a cross-country comparison within the OIC region.*

Keywords: *Maqāṣid al-Sharī'ah*, Human Development Index, human wellbeing, multidimensional indices

### **1. Introduction**

Islam takes a broad and encompassing view of human development and asserts the centrality of achieving the *Maqāṣid al-Sharī'ah* in any public policy. The existing development indices do not completely conform to the normative judgments of Islam especially because of their disproportionate emphasis on the material aspect of the development and their disregard for the dimensions which are crucial for the world hereafter. This highlights the need for an index which

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accommodates the dimensions which are consistent with *Maqāṣid* al-Sharī'ah. However, operationalizing the *Maqāṣid* al-Sharī'ah as a measureable concept has been a relatively new discipline and the instruments to scientifically investigate the religious constructs have so far been not adequate even where they are available. This paper seeks to explore the conception of *Maqāṣid* al-Sharī'ah as a measureable concept, identifies the indicators relevant to these *Maqāṣid*, and develops a tentative multidimensional index which makes a cross-country comparison within the OIC region.

Section 2 highlights important features of the Islamic concept of development, while Section 3 discusses some of the conceptual and operational problems regarding the measurement of the concepts which are intrinsically problematic because of being unobservable. This section also discusses some of the possibilities with the framework of Sharī'ah and briefly discusses the available methodology to measure such intangible factors as spirituality. Section 4 develops the methodology for constructing a *Maqāṣid* al-Sharī'ah index (MSI) and discusses some of the methodological issues. Section 5 discusses the issues of data collection within the framework of multidimensional view of development. Section 6 discusses the results.

## **2. Islamic Concept of Development**

A standard definition of economic development is "... removal of poverty, unemployment, inequality, illiteracy, and ill-health, and one of ensuring participation in government... incorporating, in the final result, the technological safeguards for human development and conserving of the biosphere that has been developed" (Adiseshiah & Start 1991). This concept of economic development has its roots in the post-enlightenment period. Islam, however, does not subscribe to this materialistic worldview, nor it considers human life to be determined by material, psychological, instinctive or environmental forces (Chapra 2008).

Islamic approach to development rests on a set of well-defined philosophical foundations (Ahmad 1994; Khurshid 1980). The first foundation is *Tawhid*, which posits the unity and sovereignty of Allah and helps define the nature of the relationship between man and his lord as well as the relationship between man and man. The principle of *Tawhid* entails that there is a unity of purpose in the design of this universe, and any dichotomy is at best a state away from the equilibrium which will be removed over time. In the world hereafter, the angularities in both the human relationships as well as the other dimensions of the universe will be physically removed: "Nothing crooked or curved wilt thou see in their place" (Qur'ān, 20: 107). The *Rabubiyya* principle entails that the human beings as well as

other creatures are governed by a Power who is Benevolent, Compassionate and Merciful. This principle assures the human beings that the resources essential for a good life in this world exist and they do not have to thwart their life in a mad pursuit of necessities of life. Such philosophical constructs as fatalism and determinism stand opposite to the *Rabubiyyah* principle because the former isms see man as a puppet in the hands of forces which are indifferent to his plight and man is totally helpless against these forces.

The *Khilafah* principle provides that human beings are responsible for their deeds and actions, and this principle refutes all such *isms* which take a non-serious or hedonist view of life. *Tazkiyyah*, the fourth principle, means purification and growth. Islamic concept of development directly follows from this principle because “it addresses itself to the problem of human development in all its dimensions: development is concerned with growth towards perfection through purification of attitudes and relationships. The result of *tazkiyah* is *falah* – prosperity in this world and the hereafter” (Ahmad 1994). Chapra (2007) includes another dimension of *Adalah* (justice) that provides for the satisfaction of the needs of everyone, and ensures equitable distribution of income and wealth and environmental protection.

At a more abstract level, Islam considers development in terms of a journey along the *sirat* (path), suggesting that Islam has a dynamic concept of development which requires continuous struggle on the part of Muslims. Those who are successful in this journey are referred to as *muflihīn* (successful ones) or *muhsinūn* (achievers of perfection) (Zaman & Asutay 2009).

The important feature of Islamic concept of development is that it considers development a multidimensional activity and seeks to establish a balance between different factors and forces. The neoclassical economics was mistaken in taking an isolated view of economic activity by excluding many dimensions of real life (Zaman & Asutay 2009). “Islamic concept of development is comprehensive in character and includes moral, spiritual and material dimensions. Development becomes a goal and value-oriented activity, devoted to the optimization of human well-being in all these areas” (Ahmad 1994). Human beings and their basic needs need to be at the center of development effort and not simply the growth rate (El-Ghazali & Series 1994). Tahir & Haque (1995) say that even economic development is contingent on a number of non-economic conditions: the fulfillment of fundamental economic rights, the surety that growth does not lead to the weakening of the moral, social and institutional fabric of the society; the growth of economy does not widen inequalities of society; there is no deviation

from the Divine mandate, and the society keeps a credible deterrent against the possible external aggression.

### **3. Measuring The Sharī'ah Concepts: Challenges and Possibilities**

The empirical investigation of Sharī'ah concepts is a relatively new discipline in the Islamic scholarship. In the absence of adequate instruments, the measurement of religious constructs is very challenging. I shall discuss here some of the challenges. Some of the challenges arise from the unobservable nature of many facts.

#### **3.1. Observable Dependent on Unobservable: Challenge and Possibility**

The first challenge is that deeds, even if they are observable, cannot be judged at their face value because the intentions behind these deeds are supremely important in Islam. Intentions, however, are not observable by their very nature. In the absence of the right intention, great acts of virtue such as martyrdom, generosity and scholarship bring no reward at all. Some individuals will suffer damnation *because* of the undesirable intentions behind these great acts of virtue (Tirmidhi, 2: 270). However, if the issue of intention is taken too far, it will not be possible to judge the relative merit of any action because theoretically, any conceivable good deed may be motivated by bad intentions, and vice versa.

Even if Islam emphasizes in no uncertain terms the obligation of truthfulness, it gives due share to the claims of the individuals and considers them sufficient in most circumstances in the absence of an objective evaluation of the *intention*. The Islamic laws related to, inter alia, testimony, *li'aan* and divorce are enforceable only on the basis of the expression, explicit or implicit. The general principal seems to be to analyze the motives with the appropriate means, while leaving the veracity of intention, and their consequences, to be judged by Allah.<sup>1</sup>

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<sup>1</sup> See for example the incident in which Prophet Yaquob (AS) responded to his sons who had plotted against their brothers (Quran 12:18). The Hadith about the person who had killed his opponent in a battle even after the latter had pronounced faith, and the Prophet (SAW)'s remark "Did you tear his heart in order to find out whether it had professed or not?" is also very revealing. See (Sahih Muslim, Book of Faith: 176)

Islam guides us towards certain *indicators* which serve as reliable source of knowledge regarding the state of *faith* of an individual. For example, some physical attributes of the hypocrites are mentioned in the Qur'ān: "Indeed, the hypocrites [think to] deceive Allah, but He is deceiving them. And when they stand for prayer, they stand lazily, showing [themselves to] the people and not remembering Allah except a little" (Qur'ān, 4:142). Similarly, offering prayer in the mosque, paying *zakāt* and fearing none other than Allah are presented as the physical manifestation of the faith. Qur'ān says: "Only he shall visit the mosques of Allah who believes in Allah and the latter day, and keeps up prayer and pays the poor-rate and fears none but Allah; so (as for) these, it may be that they are of the followers of the right course" (9:18).

These *indicators* of faith are expounded in greater detail in Hadith literature. Many Aḥādīth of the Prophet SAW take strong exception to certain human attributes and go so far as to exclude the individuals with these attributes from the community of the Muslims. These attributes include: taking up (brandishing) arms against the Muslims (Bukhari, 3:1991), plundering the wealth of others (Sunan Abu Dawood, 3, 997), not showing mercy to the younger ones and not respecting the rights of the elders (Abu Dawood, 3: 1535), instigating someone against one's spouse (Abu Dawood, 3:1759) and claiming something from someone illegally (Ibn Majah, 2: 477).

### 3.2. Islam's Unique Normative Judgments

Dividing the sphere of human activity into permissible and impermissible indeed reflects Islam's unique normative judgments and is based on the principle that only Allah knows what is good and bad for the humanity, and as a logical corollary, only He has the prerogative to declare anything permissible or impermissible. Islam emphasizes the superiority of knowledge over ignorance, "Are those equal, those who know and those who do not know?" ( Qur'ān 39:9) and goes so far as to urge the Prophet (SAW) to pray for an increase in knowledge. Say, "O my Lord! Advance me in knowledge" (Qur'ān 20:114). However Sharī'ah makes a clear demarcation between the useful and useless knowledge. The Messenger of Allah (saw) said: "Ask Allah for beneficial knowledge and seek refuge with Allah from knowledge that is of no benefit" (Sunan Ibn Majah, 3: 723).

The Muslim societies under the influence of the Western world have replicated various educational disciplines from social and biological sciences and the fine arts without adequately reconciling the assumptions at the basis of Western epistemology with its own unique worldview. The theory of evolution, for

example, is totally antithetical to Islam as a philosophical construct because of its negation of any divine role in the creation and sustenance of the universe. However, the theory of evolution has made inroads into the standard academic curricula of the Islamic world. The measurement of the concepts of Shari‘ah, as it is shown here, is value laden and requires a higher degree of discretion and care.

### 3.3. Challenges Unique to Modern Ages

There are many challenges in measuring the *Maqāṣid* al-Shari‘ah which are of relatively recent origin. Islam takes a clear position on the ethical questions about procreation. In Islam, it is a major sin to permanently destroy the organs of reproduction and is tantamount to the change in the creation of Allah. Infanticide is portrayed as a grave sin which invites the wrath of Allah (Qur’ān, 81:8-9). However, in recent times, family planning (a euphemism for reduced family size) in the Muslim world has been changing into a norm in response to the demographic changes in the Western societies. The biggest challenge in this regard is to disaggregate the causes of the falling fertility rates into two distinct categories: Western influence precipitated by the process of globalization, or some genuine physical necessity. It is critical to distinguish these two causes because of different consequences they entail in the Shari‘ah framework.

### 3.4. Possibilities: Empirical Leads from other Disciplines

Though it is difficult to measure the concepts which are not observable, a lot of research effort has found workarounds to address the issue of immeasurability. Various scales have been developed to measure subjective non-material subjects which are considered to be accessible only through self-reports such as anomie, attitudes and prejudices etc. Spirituality is a subject of particular interest and over time it has been recognized that spirituality is no more intangible than many other internalized phenomena that have already been investigated in the disciplines like psychology, epidemiology and sociology. Since 1960s, many indices and instruments have been developed to measure religious constructs. Gorsuch (1984) claimed that sufficient number of instruments have already been developed to address any conceivable issue related to the psychology of religion. The spirituality research generally uses quantitative methods gathering data based on questionnaires or schedules. The questionnaires define some observable reflector and the data based on these reflectors is assigned some ordinal value. However these problems also suffer from imprecision, lack of objective interpretation and over-simplifications (Moberg 2010).

#### **4. Maqāṣid al-Sharī'ah Index (MSI)**

##### **4.1. Issues in Multidimensional Indices**

Unlike the traditional approaches to the measurement of wellbeing where income or some alternative indicator is conveniently used as a proxy of well-being, no such space is readily available in the multidimensional approach to the measurement of development. Which aspects of life should be included in the conceptualization of poverty has been at best an arbitrary choice. Aggregation of various dimensions of development in the multidimensional framework is a subject of ongoing controversy. Though by definition any aggregation is a loss of information, at times it becomes essential to summarize a large amount of data into an easily interpretable form as an input for policy formulation. The moment we compress this information into an index, a whole range of conceptual and methodological issues surface. Ravallion (2012a, 2012b) has summarized some of the issues of multidimensional indices, and suggested some ways in which the existing indices can be modified to avert the problems presently found in the literature.

Ravallion (2012a) believes that the composite indices are unwarranted because the components of the index rather than the composite index itself is more informative for the policy makers. He comes down heavy over the issue of weighting in the composite indices. He believes that uncertainty about components and their weights are not adequately acknowledged. For non-market goods (for example, being able to participate fully in the society), constant weights are assumed for everyone in a given country which is implausible. Conclusion about the country performance over time is not clear when the country-specific context of the performance is missing (for example, the initial conditions in a country and how much it has progressed). Actual weights used in lieu of prices are not made explicit, even if prices are regarded as unreliable guide to tradeoffs. Little guidance to robustness of country rankings is provided.

Ravallion (2012b) finds that even if the weights attached to the scaled varies are made explicit, the weights attached to component parts are not made explicit which may in fact be implausible. As income is one of the components of the HDI, Ravallion believes that it is possible to monetize all the dimensions using the tradeoffs implicit in the HDI. He finds out that a low monetary value is attached to poor countries. In the newer version of HDI since 2010, that value has been lowered still further but the weight on income has increased for most of the

countries. For example, if Zimbabwe increases national income by \$0.52 while its average life expectancy is reduced by one year, it will still "promote" human development.

Given that the composite indices are the norm rather than the exception now, Ravallion (2012a) suggests that the composite measures should be clear what exactly they are measuring. More attention needs to be given to trade-offs implicitly embodied in the index. They need to be more humble because they often far fewer dimensions of welfare than measures based on consumption at household level. It also must be recognized that important aspects of development cannot be captured in a single index.

#### 4.2. Methodology

Unlike other multidimensional indices which generally use the ad hoc assumption of equal importance of all the sub-components of an index, we have *a priori* information about the relative importance of various dimensions of the objectives of Sharī'ah. I shall follow two-step strategy to construct our index: computing three sub-indices corresponding to three levels of objectives of Sharī'ah: necessities (*daruriyyat*), complementarities (*hajiyyat*) embellishments (*tahsiniyyat*) and then I shall aggregate these sub-indices by assigning unequal weights to compute the *Maqāṣid* al-Sharī'ah Index (MSI).

In the sub-indices I shall use the Chakravarty methodology which is an extension of Human Development Index (HDI) because of its suitable properties and because it is relatively free from the problems suffered by HDI (Chakravarty 2003).

Let  $x_i$  be the level of achievement of attribute  $i$  for a country, and  $i = 1, 2, \dots, k$ . The lower and upper levels of  $x_i$  are  $m_i$  and  $M_i$ , denoted by  $x_i$  subset of  $[m_i, M_i]$ .  $A$  is a real value function of indicator  $i$  which associates a value  $A(x_i, m_i, M_i)$  to each  $x_i$  subset of  $[m_i, M_i]$ . All the indicators considered in the model are assumed to follow the same functional form. In the presence of variables of different types such as literacy rate and longevity, same functional form is useful.

The properties of the a single indicator satisfies the properties of normalization (NM), monotonicity (MN), translation invariance (TI), homogeneity (HM) and lower gain in indicators at higher levels of attainment difference (LI). For a detailed exposition of these properties, see Chakravarty (2003).



The normalization (NM) of an indicator  $i$  is in fact the transformation of an indicator such that its minimum and maximum values take the value of zero and one respectively. This is an alternative to the choice of an arbitrary cut-off values. The World Development Index, for example, assumes the 20 and 83.57 as the lower and upper bounds of longevity. For an inter-temporal comparison, the same lower and upper values may be used in the subsequent versions of indices for a valid inter-temporal comparison. The monotonicity (MN) assumes that an increase in the achievement level, *ceteris paribus*, increases the value of index. The translation invariance (TI) means that if there is a same absolute change in the value of an indicators as well as its upper and lower bounds, the value of the indicator will remain the same. Homogeneity (HM) means that the index is insensitive to the units of measurement. For example, if the per capita income expressed in dollars is expressed in cents, the indicator value remains the same. The LI means that an increase in the value of an indicator at lower level will result in greater increase as compared to the increase in the indicator value at higher levels. For example, an increase of 1 year of life expectancy in a country where average life expectancy is 50 years will show a greater gain in the index than an addition of one year to average life expectancy of 70 years. This LI postulate is used in GDI (Gender related Development Index) by UNDP (Dijkstra & Hanmer 2000).

As we are considering the case where there are five indicators associated with three levels of MS, The general form of the index for  $k$  attributes is for an arbitrary index  $I$ .

$$I = \frac{\sum_{i=1}^k \left( \frac{x_i - m_i}{M_i - m_i} \right)}{k}$$

The above functional form satisfies the following important properties.

**Normalization (NOM):** For any  $z \in [0,1]$ ,  $I(z, \dots, z) = z$

Consistency in Aggregation (CIA): For any  $\underline{a}, \underline{b} \in [0,1]^k$ ,

$$I(a_1 + b_1, a_2 + b_2, \dots, a_k + b_k) = I(a_1, a_2, \dots, a_k) + I(b_1, b_2, \dots, b_k)$$

**Symmetry (SYM):** For all  $\underline{a} \in [0,1]^k$ ,  $I(\underline{a}) = I(\underline{a}P)$  where  $P$  is any  $k \times k$  permutation matrix.

The NOM postulate shows that if all the indicators in the index  $I$  take the same value  $\alpha$ , the achievement will also be  $\alpha$ . This is an alternative way of saying that the achievement is an average of individual indicators. If there is only indicator in the index, then the value of that indicator will be the value of the index.

CIA property says that if an indicator  $i$  has multiple components, for example the *complementary* level of attribute “Faith” which consists of four components (*salāt, saum, zakāt* and Hajj) and splitting the indicator is not possible, we can attach zero values to all the components of the indicator except the component of interest. Here the components which has not been assigned zero value becomes the level of indicator.  $I$  is not sensitive to the order in which the components are broken down. CIA requires that The SYM postulate says that  $I$  is insensitive to the permutation of the arguments, that is, only the individual indicator level is relevant for measuring achievement. The relevance of this property lies in the fact that there are some indicators such as World Giving Index which are composed of sub-components:

CIA also assumes substitutability among various indicators. If symmetry holds, the marginal rate of substitution between  $i$  and  $j$  attribute is independent of the level of the other attributes in the index. For example, how many percent of population is to be allowed to suffer from reduced wages as a result of imposing a stricter environmental regime, is independent of the level of charitable spending. It may be noted that the constant marginal rate of substitutability requires the linearity of the functional form

$$\left( \frac{x_i - m_i}{M_i - m_i} \right)$$

As said earlier, if we want to attach greater weight to the differences in the lower levels of achievements, the achievement index takes a modified form  $I_r$  where  $I_r$  is a decreasing function of  $r$ .

$$I_r = \frac{\sum_{i=1}^k \left( \frac{x_i - m_i}{M_i - m_i} \right)^r}{k}, \quad 0 < r < 1$$

The parameter  $r$  can be justified on the ground that the low contributing attributes requires attention from policy point of view for improving their levels in order to reach a higher position in achievement.

This method becomes helpful in calculating the percentage contributions made by individual attributes to overall achievement and hence in isolating attributes according to their degrees of contribution. This is an important policy application of our general index.

Another useful property is that the marginal rate of substitution remains constant as shown by Ravallion (Ravallion 2012b).

Now that  $I_r$  will measure the three levels of *Maqāṣid* separately which will be averaged to give MSI.

$$MSI = \frac{\sum_{i=1}^k \alpha_i I_i}{k}$$

As the theory of *maqāṣid* explicitly says that three levels are unequal, necessities being the most important, followed by the complementary and embellishment. I shall assign unequal weights to these three sub-indices 3/6, 2/6 and 1/6. Though these weights are arbitrary, revisable and are open for debate, such a weighting has some theoretical justification as well.

## 5. Data

The *Maqāṣid* of Sharī'ah have been classified into three levels of interests (*masalih*) in the descending order of importance: necessities (*daruriyyat*), complementarities (*hajiyyat*) and embellishments (*tahsiniyyat*). Though a sound theoretical work on various dimensions of *Maqāṣid* of the Sharī'ah already exists, the empirical analysis of these dimensions has not reached the same level of maturity. In this Section, I shall propose a few indicators relevant for the measurement of *Maqāṣid*, provide their justifications and highlight the mismatch between the available and ideal data.

### 5.1. Preservation of Religion

Islam considers the faith in Oneness of Allah the bare minimum for escaping the eternal damnation.<sup>2</sup> Abu Sa'eed Khudri (RA) reported that the Prophet (SAW) said, "Every person who has faith in his heart so much as the weight of an atom will be taken out of Hell" (Tirmidhi, 2:505). I have therefore chosen faith as the relevant indicator for the *necessary* level of the dimension "preservation of religion."

Given the centrality of monotheism in Islam, the ideal indicator should explicitly reflect the faith in the oneness of Allah. However, the only available data

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<sup>2</sup> "Allah forgiveth not that partners should be set up with Him; but He forgiveth anything else, to whom He pleased; to set up partners with Allah is to devise a sin Most heinous indeed" (Quran 4:48).

is collected by PEW in its report *The World's Muslims: Unity and Diversity* (2012) which consists only of a set of questions about the importance of the role of religion in life. PEW asks the question: "How important is religion in your life?" and the possible answers are: "very important, somewhat important, not too important and not at all important." I have chosen to include only two categories "very important and somewhat important" to serve as a proxy for the indicator *faith*.

In the *complementary* category of preservation of religion, I have used four indicators considered the "pillars" of Islam: *salāt*, fasting, pilgrimage and *zakāt*. Again, the data is from PEW. The justification for including these important acts of worship, considered the pillars of Islam, in the category of *hajiyyat* is that failure to carry out these *'ibādāt* will not lead to eternal damnation as is warned in case of polytheism.<sup>3</sup> "The person who does not pray five times a day, there is no promise of Allah with him. He may forgive him or punish him" (Abu Dawood, Vol. 1, 1416).

There are lot of problems with the data collection of PEW with regards to *salāt*, *saum*, *hajj* and *zakāt*. The *salāt* indicator, as measured by PEW, can take any one of the four attributes (going to mosque for more than once a week, once a week for Jumah prayer, once or twice a month, a few times a year especially for Eid). Such a distinction has clearly no basis in Islam. Islam requires total submission and is not content with half-hearted acts of worship. "When they stand up to prayer, they stand without earnestness, to be seen of men, but little do they hold Allah in remembrance" (Qur'ān, 4:142). Theoretically, a more satisfactory approach could have been the introduction of a binary variable stating whether a Muslim offers the five obligatory prayers in a day or not. I chose only one case where the percentage of population attended the mosques for more than once a week. Other data problems relate to the paying of *zakāt* due and performing *hajj*. PEW measures only the percentage of population performing these duties, while these *'ibādāt* are obligatory for the Muslims satisfying certain monetary standards (they have *Istita'at*). The *saum* obligation is also contingent on the health, age and gender but the PEW data does not make these important distinctions.

The well-known Hadith-i-Jibrail gives us important insights regarding various degrees of faith. When the angel Jibrail asked the Prophet (SAW) regarding Imaan, the Prophet (SAW) replied: "It is to believe in Allah, His angels, His Books, His

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<sup>3</sup> Various juristic schools interpret the importance of these *'ibādāt* in different ways.

Messengers (peace be upon them all), in the Last Day and in Predestination of good and evil.” He asked, “And what is Islam?” He said, ‘It is. to testify that there is no God but Allah and that Muhammad is His slave and His Messenger (SAW) to establish the Salah, to pay the *Zakāt*, to perform pilgrimage of the House and to fast in Ramadan.’ He asked, “And what is *Ihsān*”? He said, It is that you worship Allah as though you see Him, for it you cannot see Him, He sees you” (Tirmidhi, 2:518). This Hadith clearly points to the *embellishment* level of faith, but the problem is that the quality of *Ihsān* is neither measureable nor observable.

Spending in the way of Allah is both emphasized and is often praised in Qur’ān in a highly commendatory terms. On a number of occasions, the virtues of faith are discussed in parallel with the spending in the way of Allah. “So he who gives (in charity) and fears (Allah). And (in all sincerity) testifies to the best. We will indeed make smooth for him the path to Bliss” (Qur’ān, 92:5-7). “But give them preference over themselves, even though poverty was their (own lot)” (Qur’ān, 59:9). So I have included *infāq fī sabillillah* in the *embellishment* category of the preservation of faith. After the inclusion of *Zakāt* in the *complementary* category, we can avoid the overlapping issue by restricting the spending in the way of Allah to supererogatory spending, which is a special case of the general spending in the path of Allah (*infāq fī sabillillah*).

In the absence of any available data on the supererogatory *ṣadaqāt*, we use the data from World Giving index which is aggregation of three sub-components: percentage of the population helping the stranger, donating money and volunteering time. The problem with this data however is that it does not make explicit the amount of money or time actually devoted. The WGI also does not make explicit the size of the donation relative to the total wealth, which is an important concern in Islamic framework, and is highlighted in the example of Abu Bakr RA in the Battle of Tabuk when he devoted all of his household goods while Umar RA could devote only half of his wealth, though in absolute terms, the wealth of Umar RA far exceeded the share of Abu Bakr.

## 5.2. Preservation of Life

The Prophet SAW has termed this world as a tillage for the next world. Sharī'ah is a concept which is relevant to the life in this world, and the faith or deeds not done in this world will not be of any consequence in the world hereafter. “If only thou couldst see when the guilty ones will bend low their heads before their Lord, (saying :) "Our Lord! We have seen and we have heard: Now then send us back (to the world): we will work righteousness: for we do indeed (now) believe” (Qur’ān, 32, 12). So the preservation of life is an important objective of Sharī'ah.

The indicator chosen to measure the *necessary* level of preservation of life is the average life expectancy. The problem with this indicator is that it treats the question of life and death at its face value without looking into the spirit of life and reason behind the death. Islam looks at life and death through a different perspective: life spent in the earnest service of Allah is considered as meritorious as death in the path of Allah. “Allah hath purchased of the believers their persons and their goods; for theirs (in return) is the garden (of Paradise): they fight in His cause, and slay and are slain...” (Qur’ān 9:111).

The indicator chosen to represent the *complementary* level of the dimension “preservation of life” is freedom from malnutrition. Adequate nourishment as an important determinant of human wellbeing is well documented in the development literature (Qizilbash 1996). A closely related indicator relevant in the present context could be health which is expected to be broadly correlated with the indicator of freedom from malnourishment. It means that health is an important mercy of Allah. However the problem with using health as the relevant indicator is not feasible primarily because of the reason that while it is easy to measure disease, it is not easy to measure health because it can be adversely affected by a range of diseases. Arguably, freedom from all types of diseases could mean a gain in the wellbeing, freedom from malnutrition is a better reflection of the adequacy of means required for a good life.

The *embellishment* category of life is by definition a life that should inspire other nations and instill confidence in others about the superiority of the Islamic way of life. So I have chosen the life satisfaction as the relevant indicator because it reflects the level of satisfaction with the conditions obtaining in the society. An ideal indicator should make a distinction between a subjective sense of good life (*hayaatan tayyibah*) that is characteristic of and is the consequence of the righteous deeds (Qur’ān, 16: 97), and the facile smugness caused by an easy access to power and influence (See Qur’ān, 74: 11-16). In order to qualify for the *embellishment* category, we might also like to have an indicator that should measure the life satisfaction above some predefined benchmark but life satisfaction used here is a continuous variable measuring the level of satisfaction from least satisfied to most satisfied for over seventy countries of the world.

### 5.3. Preservation of Lineage

Procreation is a fundamental condition for the continuity of human life on the earth. A Hadith suggests that Prophet SAW would feel proud of the large number

of his *Ummah* on the Day of Judgment (Sunan Abu Dawood, 2: 285). But this Hadith may only be construed as an exhortation because Islam has not expressly recommend any finite number of children. The number of children in a family being dependent on the age of the parents, their genetic composition, climate and many other factors is of secondary importance and may vary over time. So the survival of the children seems to be a more direct concern of the Sharī'ah. Qur'ān has given a stern warning for killing the children. "And when the seas are set on fire. And when souls are united. And when the female infant buried alive is asked. For what sin she was killed? (Qur'ān 81:6-9).

A relevant indicator associated with the *necessary* category of the dimension of preservation of lineage is the survival of children. I have used in the *essential* category the World Bank data on the child mortality rate and transformed it by subtracting it from 100 percent. The overlap between the life expectancy and child survival can be rectified when more disaggregated data on the life expectancy of the population subgroups becomes available.

The relevant indicator corresponding with *complementary* category of the dimension of preservation of lineage seems not so clear. Some behavioral attributes like obedience and dutifulness on the part of children could be more direct candidate as a proxy of the *complementary* level. Although it can be safely assumed that the absence of these behavioral attributes will bring hardship and distress in the society, analysis of these attributes as a measurable concept is at best not straightforward. The concept of obedience to parents, for example, is dependent on the assumption that the expectations of the parents conform to the Sharī'ah standards. I have therefore chosen the safety of person as a relevant indicator here because it is not only the survival which is important but also sense of security for the children. The available data on the homicide rate collected by UNSTATS (United Nations Statistics Division's Regional Composition) serves as a proxy about the perceived security of person in a given society (Harrendorf et al. 2010). I have again transformed this indicator by subtracting it from 100% to make it reflect safety of person.

Literature on the *Maqāṣid al- Sharī'ah* relates environmental safety to the dimension of preservation of progeny (Amin et al. 2013). I associate environmental safety with the *embellishment* level of the dimension of preservation of lineage because such development paradigms are favored now which balance environment safety with economic growth. Again the environmental safety is of direct concern to the coming generation and this care about the coming generation is highly valued spirit in Islam. In an answer to the question regarding how much of the

wealth should be spent, the Prophet SAW recommended that it was better to leave one's inheritors wealthy rather than poor, (finding themselves) forced to beg of others (Bukhari, Volume 007, Book 064, Hadith Number 266).

#### 5.4. Preservation of Intellect

There are a number of factors which affect human intellect such as drug use (See Ashur & Al-Tahir (2006)), mental disorders, accidents and heredity (Mrazek et al. 1994), arguably, it is the education that affects human intellect most comprehensively (Chickering & Gamson 1987; Child et al. 1946; Lewin 1935; Masten & Coatsworth 1998). So we have used education as the relevant indicator with respect to the preservation of intellect. Some studies use religious education as a contradistinction from the formal education for the Sharī'ah based indices (Kamali 1999). However, the limited data available on the religious education system in OIC countries and the disagreement about the concept of religious education as a separate academic construct force us to use the formal education and its various levels corresponding to the three levels of *Maqāṣid*. We have used the World Bank data on the three levels of education (primary, secondary and tertiary) corresponding with *necessary*, *complementary* and *embellishment* categories of *Maqāṣid*.

#### 5.5. Preservation of Property

The traditional concept of property has undergone many changes over time and has included concepts like intellectual property. The job for the salaried persons could also be considered in a more indirect way as a counterpart of the property. Any conceivable means of living could therefore serve as a proxy for property. Conversely, the lack of the means of living both in the form of tangible or intangible property could be considered as poverty.

The relevant indicator with regards to the *necessary* and *complementary* categories of the dimension of the preservation of property is therefore the freedom from poverty. We have used the two levels of poverty (extreme poverty corresponding with \$1.25 poverty line and poverty corresponding with \$2 poverty line) computed by the World Bank<sup>4</sup> to correspond to two categories of *Maqāṣid*,

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<sup>4</sup> The World Bank's income poverty measure is not the ideal measures and suffers from many conceptual and methodological issues. See my PhD thesis "*An Inter-Temporal Comparison of International Poverty as an Achieved Functioning Deprivation*" for a detailed discussion.



*necessary and complementary*. We have chosen security of property as the relevant indicator for the *embellishment* level. The available relevant data relates to the crime against property is gathered by UNODC (Harrendorf et al. 2010). We consider four variables about the crime against property (robbery, theft, motor vehicle theft and burglary) and transform the data to reflect the safety of property in a given country.

#### 5.6. Tackling missing data

Given the range of indicators used in this study, it must be expected that data should not be available for all the indicators for all the OIC countries in this study, and the available data may not come from the same year. So we have to make to be caution in our interpretation of the results. For missing values, we developed a rule. Unless indicated otherwise, if some observation for a country is missing, we take the simple average of the values of the neighboring countries. WHO has in fact made this fine grained grouping of different UN regions and sub-regions (WHO, Iodine status worldwide: WHO Global Database on Iodine Deficiency, 2004). When no data was available for the whole region, though it was very rare, we used the world averages.

### 6. Paternalism and Arbitrariness in the Choice of Indicators

As regards the issue of paternalism that is essentially embedded in any conceivable choice, ranking and weighting of dimensions of wellbeing, it may be argued that the concept of wellbeing may be conceptualized at various levels of generality. Nussbaum's list of valuable capabilities is severely criticized for being paternalistic (See Clark, 2002), and she introduces the concept of plural and local specifications to deal with the problem of paternalism. A high level of generality in the conceptualization of wellbeing corresponds with the plural specification. There are some dimensions such as health and education which are expected to be generally important in almost all cultures of the world. Even if there is a broad consensus among all societies that health and education are desirable in their own right, individual societies might differ with regards to the broad outlines of the education or the best means to ensure health. The concept of local specification specifically accommodates the differences which are culture-specific or are based on some other local dynamic. Local specification thus "leaves a great deal of latitude for citizens to specify each of the components more concretely, and with much variety, in accordance with local traditions, or individual tastes" (Clark, 2002, p. 94).

In our analysis, we chose the dimensions of wellbeing that are quite general in nature and are not much affected by local tastes. There might hardly be any society which does not consider longevity, health and adequate nourishment as important dimensions of human wellbeing. Political freedom, environmental safety and the freedom to do business are also expected to be valuable across all cultures.

## 7. Results

We have developed MSI which can be used to measure the objectives of Sharī'ah. This index can also be used to see the percentage share of the individual attributes to the overall achievement.

### 7.1. *Maqāṣid* -al-Sharī'ah Index

We have divided the 57 countries of the OIC region into four sub-groups of roughly the same size in terms of development level within the framework of objectives of Sharī'ah. The development levels corresponding to these four sub-groups are "Very High Development", "High Development", "Low Development" and "Very Low Development." The OIC countries are thus divided because MSI values have no cardinal value, and they can at best be used for geographical comparison. We have presented here only three scenarios of the index corresponding to three levels of  $r$ . It may be recalled that  $r$ , when it is less than 1, attaches greater weight to the differences in the lower levels of achievements

**Table-1**  
**The *Maqāṣid* al-Sharī'ah Index**

Country	Index ( $r=0.5$ )	Rank	Index ( $r=0.25$ )	Rank	Index ( $r=1$ )	Rank	Level of Development
Tunisia	0.279	1	0.261	2	0.276	3	Very High Development
Iran	0.279	2	0.259	3	0.281	1	
Saudi Arabia	0.276	3	0.258	5	0.278	2	
Jordan	0.275	4	0.262	1	0.268	6	
Turkey	0.273	5	0.255	7	0.272	4	
Maldives	0.271	6	0.253	10	0.268	7	
Syria	0.270	7	0.256	6	0.263	14	
UAE	0.269	8	0.255	8	0.265	10	
Malaysia	0.268	9	0.253	9	0.267	9	
Algeria	0.267	10	0.252	12	0.264	12	
Lebanon	0.266	11	0.251	13	0.265	11	
Egypt	0.266	12	0.250	14	0.263	13	
Libya	0.266	13	0.247	16	0.272	5	
Brunei	0.264	14	0.252	11	0.267	8	

Qatar	0.261	15	0.249	15	0.260	15	High Development
Kuwait	0.260	16	0.245	17	0.258	16	
Turkmenistan	0.255	17	0.259	4	0.240	25	
Morocco	0.254	18	0.237	20	0.251	22	
Bahrain	0.253	19	0.239	19	0.255	19	
Oman	0.253	20	0.234	21	0.257	17	
Gabon	0.248	21	0.231	22	0.252	20	
Palestine	0.248	22	0.228	23	0.255	18	
Azerbaijan	0.248	23	0.243	18	0.234	29	
Indonesia	0.245	24	0.228	24	0.252	21	
Kyrgyzstan	0.240	25	0.223	27	0.242	24	
Guyana	0.239	26	0.223	26	0.242	23	
Uzbekistan	0.238	27	0.223	28	0.237	26	
Iraq	0.235	28	0.220	29	0.235	28	
Kazakhstan	0.234	29	0.224	25	0.229	31	Low Development
Albania	0.232	30	0.220	30	0.228	32	
Suriname	0.232	31	0.216	32	0.236	27	
Tajikistan	0.230	32	0.217	31	0.231	30	
Afghanistan	0.215	33	0.205	34	0.219	33	
Bangladesh	0.212	34	0.207	33	0.209	35	
Cameroon	0.209	35	0.202	35	0.209	36	
Sudan	0.207	36	0.198	36	0.212	34	
Djibouti	0.204	37	0.197	37	0.207	37	
Pakistan	0.202	38	0.194	38	0.207	38	
Senegal	0.198	39	0.193	39	0.200	39	
Yemen	0.196	40	0.192	40	0.194	42	
Gambia	0.196	41	0.191	41	0.198	40	
Mauritania	0.191	42	0.186	43	0.195	41	
Togo	0.188	43	0.186	42	0.188	43	Very Low Development
Benin	0.183	44	0.183	45	0.179	44	
Comoros	0.182	45	0.184	44	0.173	46	
Uganda	0.178	46	0.180	48	0.176	45	
Guinea	0.178	47	0.181	47	0.173	47	
Mali	0.177	48	0.183	46	0.164	49	
Nigeria	0.173	49	0.179	49	0.160	51	
Niger	0.170	50	0.172	51	0.165	48	
Guinea-Bissau	0.169	51	0.175	50	0.160	50	
Burkina Faso	0.162	52	0.169	52	0.157	52	
Somalia	0.161	53	0.164	53	0.156	54	
Ivory Coast	0.158	54	0.162	54	0.157	53	
Mozambique	0.149	55	0.159	55	0.138	56	
Sierra Leone	0.148	56	0.149	56	0.144	55	
Chad	0.135	57	0.140	57	0.136	57	

The most developed region in the Muslim world is predominantly Western and South-Eastern Asia and Northern Africa, while the least developed area is in Africa. The notable fact is that there is only a narrow range [0.175, 0.259] within which the development spectrum in the Muslim world is exhausted. The regional distribution also reveals certain patterns: South-East Asia, Asia and Western Asia have almost the same level of development, while the rest of Asia, South America

and Southern Europe make another distinct group (highlighted in the table below). Africa, especially the western and eastern Africa bear the brunt of underdevelopment both in the framework of MSI as well as HDI.

**Table-2**  
**MSI: Regional Comparison**

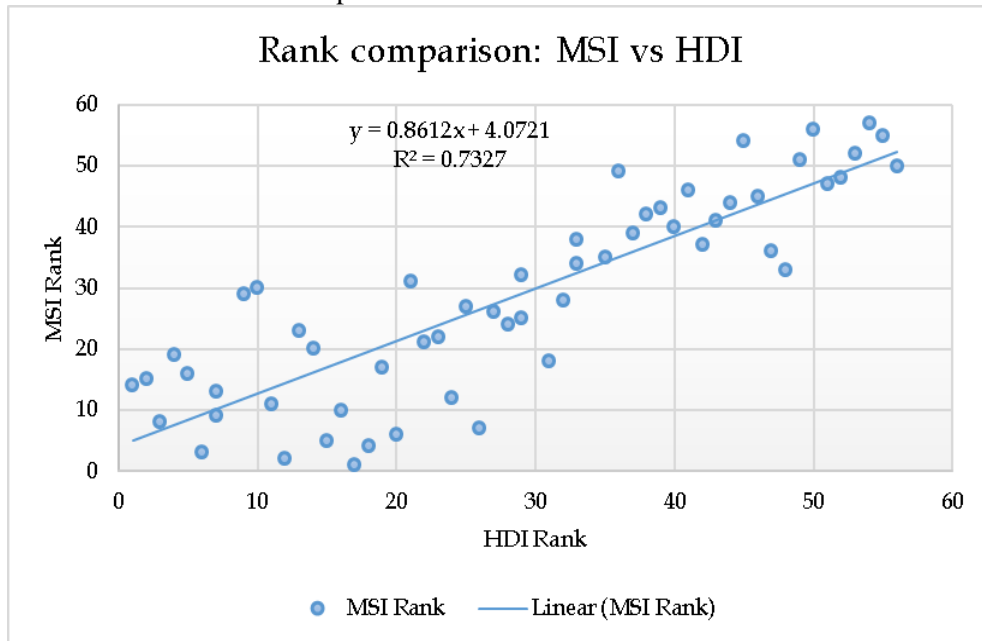
	Index (r=0.5)	Index (r=0.25)	Index (r=1)
South-Eastern Asia	0.259	0.244	0.262
Northern Africa	0.256	0.241	0.256
Western Asia	0.256	0.242	0.254
Central Asia	0.239	0.229	0.236
South America	0.236	0.220	0.239
Southern Asia	0.236	0.224	0.237
Southern Europe	0.232	0.220	0.228
Middle Africa	0.197	0.191	0.199
Western Africa	0.176	0.178	0.172
Eastern Africa	0.175	0.177	0.170

## 7.2. Comparison with HDI

Interestingly, the same scenario holds in other paradigms of development such as human development as measured by UNDP. One might be tempted to assume that this is not a mere coincidence, and in some indirect way it is the empirical evidence of the claim in the Qur’ān that “If the people of the towns had but believed and feared Allah, We should indeed have opened out to them (All kinds of) blessings from heaven and earth...” (Qur’ān, 7:96).

Even if MSI is broadly correlated with HDI, much of the divergence is visible at the higher levels of achievement (1<sup>st</sup> rank represents the highest level of development in MSI). Tunisia ranks 1<sup>st</sup> in MSI (r=0.5) but in HDI it ranks 17<sup>th</sup> among the countries belonging to OIC. Tunisia has performed extraordinarily well in the indicators which are generally not included in the HDI such as freedom of person and property and adherence to faith and deeds considered important in Islam. Albania presents a reverse case where it ranks 10<sup>th</sup> in HDI but 30<sup>th</sup> in MSI. An important reason is that among all the Islamic countries, it is in Albania that the

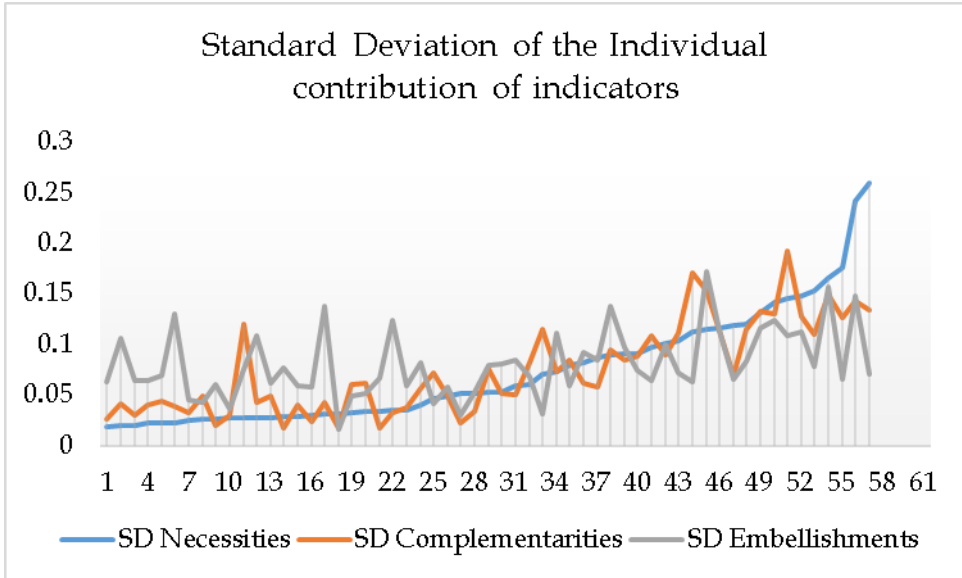
smallest number of people consider religion to be important and its performance on the indicator of faith is also poor.



### 7.3. Individual Contribution of Indicators to Overall Achievement

MSI is particularly useful when there is an unbalanced achievements in various indicators. Standard deviation being a measure of the distance from the mean, the policy makers can easily trace the indicator in which they are lagging relative to other indicators and may make the intervention. In view of the charge that the multidimensional indices only pack dimensions which have neither theoretical justification nor any intuitive interpretation (Ravallion 2012a; Ravallion 2012b), this property of MSI to decompose all the indicators to show their individual contribution to overall achievement is extremely important property.

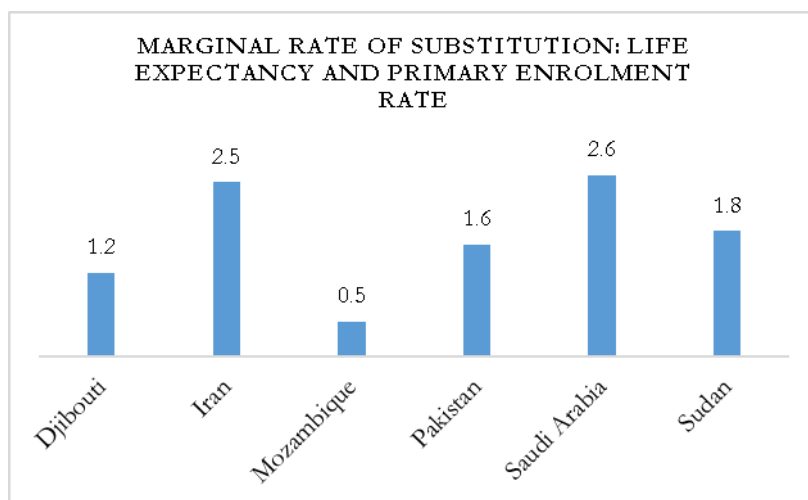
In the figure below, one can visually see the countries which have uneven development by their larger standard deviations.



#### 7.4. Substitutability

The biggest problem with multidimensional indices is that even if they make explicit the apparent weights, they do not reveal the actual tradeoffs for critical scrutiny. We have computed the tradeoffs. As there is no monetary variable in our index, we cannot monetize the tradeoffs. We chose two indicators from the *necessary* category, Life Expectancy (years) and Primary Completion Rate, and computed their tradeoffs.

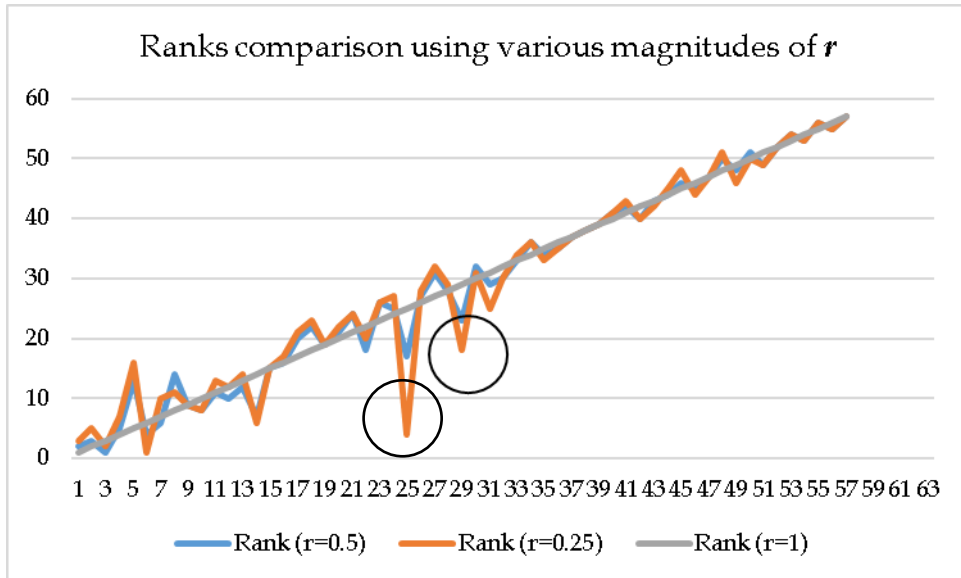
**Figure-1**  
**Percentage Decrease in the Primary Enrolment Rate**  
**as a Result of 1 Year Increase in Life Expectancy**



In the figure above, the tradeoffs are marginal rates of substitution: an increase of one year in the life expectancy leads to some decrease in the primary completion rate. If we consider the magnitude of the percentage decrease in primary completion rate as a result of one year increase in life expectancy, the results are reassuring. The highest change in the given dataset is that of 2.6 percent for Saudi Arabia, which is quite negligible as compared to the implausibly small weights attached by HDI to the least developed countries, while astronomically high weight attached to the rich countries (Ravallion 2012b).

#### 7.5. Robustness Check

The choice of the parameter  $r$  as well as the indicators is, in essence, arbitrary and therefore it is important to change the assumptions of the model to see how it behaves. I have presented here the MSI ranks of the OIC countries with respect to three cases where  $r$  equals 0.5, 0.25 and 1.



We see in the above figure that with the exception of two countries which are markedly off the line, the ranks of the countries in the three scenarios do not show any major divergence. Since  $r$  is a decreasing function of MSI, these two countries (Turkmenistan and Azerbaijan indicated by the circles hold the 4<sup>th</sup> and the 18<sup>th</sup> rank) rank higher when the magnitude of  $r$  is 0.25. However, when  $r$  equals 0.5, these countries do not show such a drastic difference from the pattern when  $r$  equals 1. As regards the comparison between the two scenarios when  $r$  equals 0.5 and 0.25 respectively, the latter parameter makes the divergences from the straight line look more accentuated.

#### 7.6. Limitations and Future Directions

The empirical application of the concept of *Maqāṣid* al-Sharī'ah being a relatively new discipline, one should not expect that a consensus on important aspects of the measurement will evolve any time soon. Some of the limitations of this study are that the choice of indicators is not wholly grounded in theory, and a lot of adhoc and arbitrary assumptions go in the construction of this index. Secondly, the database required for the measurement of unobservable concepts is woefully lacking and whatever is available is not necessarily relevant to the normative framework of Islam. The empirical exercise will therefore require more coordinated efforts on the part of religious scholars and development practitioners.



## 8. Concluding Remarks

The empirical investigation of the Sharī'ah concepts is intrinsically problematic and the available tools to measure the religious constructs are not satisfactory partly because they have been developed on the basis of value judgments which may not always be admissible in the Sharī'ah. Some of available tools suffer from conceptual and methodological problems. This paper discussed the challenges related with the measurement of *Maqāṣid al-Sharī'ah* and provided some insights as to how to address these issues. We also developed a *Maqāṣid al-Sharī'ah* Index (MSI) corresponding to three levels of *necessities*, *complementarities* and *embellishments*. This measure has tried to overcome the serious conceptual and methodological problems characteristic of many existing indices. It makes explicit the tradeoffs which generally remain implicit and create serious bias in the assessment of development. The contribution of individual components to the overall wellbeing is an additional advantage of this measure. However, the *empiricism* being new to Muslim scholarship, this work is carried out in the spirit of extending the debate further with a view to search for better measurement instruments.

## References

- Ahmad, K., 1994. *Islamic Approach to Development: Some Policy Implications*, Institute for Policy Studies.
- Amin, R.M. et al., 2013. The Integrated Development Index (I-DEX): A New Comprehensive Approach to Measuring Human Development. In *9th International Conference on Islamic Economics and Finance*.
- Ashur, I. & Al-Tahir, M., 2006. *Treatise on Maqasid al-Shari'ah*,
- Bell, J., 2012. *The World's Muslims: Unity and Diversity*, The Pew Forum on Religion and Public Life, Pew Research Center.
- Chakravarty, S.R., 2003. A generalized human development index. *Review of development economics*, 7(1), pp.99–114.
- Chapra, M., 2008. The Islamic Vision of Development. *Thoughts on Economics, The Quarterly Journal of Islamic Economics Research Bureau (Bangladesh)*, 18(3), pp.7–38.
- Chapra, M.U., 2007. *Islam and Economic Development: A Strategy for Development with Justice and Stability*, Adam Publishers.

- Chickering, A.W. & Gamson, Z.F., 1987. Seven principles for good practice in undergraduate education. *AAHE bulletin*, 3, p.7.
- Child, I.L., Potter, E.H. & Levine, E.M., 1946. Children's textbooks and personality development: An exploration in the social psychology of education. *Psychological Monographs: General and Applied*, 60(3), pp.i-54.
- Dijkstra, A.G. & Hanmer, L.C., 2000. Measuring socio-economic gender inequality: Toward an alternative to the UNDP gender-related development index. *Feminist Economics*, 6(2), pp.41-75.
- El-Ghazali, A.H. & Series, I.E.T., 1994. *Man is the Basis of the Islamic Strategy for Economic Development*, Islamic Research and Training Institute, Islamic Development Bank.
- Esposito, J.L., 1998. *Islam: The straight path*, Oxford University Press New York.
- Gorsuch, R.L., 1984. Measurement: The boon and bane of investigating religion. *American psychologist*, 39(3), p.228.
- Harrendorf, S., Heiskanen, M. & Malby, S., 2010. *International statistics on crime and justice*, European Institute for Crime Prevention and Control, affiliated with the United Nations (HEUNI).
- Kamali, M.H., 1999. Maqasid Al-Shar'ah: The objectives of Islamic law. *Islamic studies*, 38(2), pp.193-208.
- Khurshid, A., 1980. Economic Development in an Islamic Framework. *Studies in Islamic Economics*.
- Lewin, K., 1935. A dynamic theory of personality.
- Masten, A.S. & Coatsworth, J.D., 1998. The development of competence in favorable and unfavorable environments: Lessons from research on successful children. *American psychologist*, 53(2), p.205.
- Moberg, D.O., 2010. Spirituality research: measuring the immeasurable? *Perspectives on Science & Christian Faith*, 62(2).
- Mrazek, P.B., Haggerty, R.J. & others, 1994. *Reducing risks for mental disorders: Frontiers for preventive intervention research*, National Academies Press.
- Qizilbash, M., 1996. Capabilities, well-being and human development: A survey. *The Journal of Development Studies*, 33(2), pp.143-162.
- Ravallion, M., 2012a. Mashup indices of development. *The World Bank Research Observer*, 27(1), pp.1-32.

Ravallion, M., 2012b. Troubling tradeoffs in the human development index. *Journal of Development Economics*, 99(2), pp.201–209.

Tahir, S. & Haque, Z., 1995. Islamic Perspectives on Economic Development [with Comments]. *The Pakistan Development Review*, pp.845–856.

Zaman, N. & Asutay, M., 2009. Divergence between aspiration and realities of islamic economics: a political economy approach to bridging the divide. *International Journal of Economics, Management and Accounting*, 7(1).

**Appendix****Table-3**  
**Percentage Contribution of Five Indicators of the Necessary Category**

Individual Share	Necessities				
	Religion	Life	Progeny	Intellect	Property
Afghanistan	31.3	20.9	8.8	21.9	17.1
Albania	0.0	29.3	23.3	19.0	28.4
Algeria	23.6	21.1	17.9	17.3	20.2
Azerbaijan	17.5	23.1	16.1	17.9	25.3
Bahrain	21.6	22.8	21.3	16.3	18.1
Bangladesh	31.4	26.9	17.8	17.5	6.4
Benin	37.3	23.9	11.8	19.7	7.3
Brunei	23.9	23.9	22.9	17.5	11.8
Burkina Faso	41.1	22.8	10.9	17.3	7.9
Cameroon	33.6	17.2	9.8	18.1	21.3
Chad	60.4	23.3	5.8	0.0	10.5
Comoros	35.5	24.2	13.3	21.3	5.7
Djibouti	31.1	22.5	11.7	15.9	18.8
Egypt	23.7	20.6	17.3	17.4	21.0
Gabon	24.4	17.6	10.8	24.6	22.7
Gambia	34.6	21.7	13.6	18.2	11.8
Guinea	39.4	22.0	10.6	18.0	10.0
Guinea-Bissau	43.3	21.7	7.1	20.4	7.5
Guyana	25.0	21.4	16.6	18.2	18.8
Indonesia	26.8	23.4	17.3	19.3	13.3
Iran	23.1	21.2	17.7	16.8	21.1
Iraq	26.0	22.4	16.3	13.2	22.2
Ivory Coast	39.8	15.3	9.7	18.0	17.1
Jordan	23.1	21.3	17.3	15.6	22.7
Kazakhstan	17.4	21.2	19.0	18.2	24.1
Kuwait	21.6	22.0	20.5	17.9	18.0
Kyrgyzstan	23.2	22.4	17.7	18.4	18.2
Lebanon	22.0	23.8	21.3	14.9	18.0
Libya	23.5	22.7	19.1	17.0	17.8
Malaysia	24.3	23.0	22.9	17.6	12.1
Maldives	22.2	21.7	19.5	15.3	21.3
Mali	44.0	23.1	7.6	19.1	6.2
Mauritania	33.8	23.4	11.5	17.4	13.9
Morocco	23.3	21.6	15.9	17.7	21.5
Mozambique	47.5	17.3	15.2	17.5	2.5
Niger	42.1	25.8	9.4	14.2	8.6
Nigeria	46.0	20.4	8.5	25.2	0.0
Oman	21.6	22.8	20.2	17.4	18.0
Pakistan	31.0	24.6	10.3	16.7	17.4
Palestine	24.3	22.6	17.7	16.4	19.0
Qatar	20.8	22.6	23.0	16.2	17.4
Saudi Arabia	21.2	22.0	21.6	17.4	17.8
Senegal	33.7	24.6	15.4	15.0	11.3
Sierra Leone	59.8	0.0	0.0	32.4	7.8
Somalia	42.5	22.5	4.5	19.9	10.5
Sudan	30.0	21.6	12.0	21.7	14.7
Suriname	24.2	23.0	19.3	17.0	16.6

Syria	21.0	21.6	18.4	17.3	21.6
Tajikistan	25.4	22.6	13.0	19.6	19.5
Togo	36.3	20.5	10.6	20.0	12.6
Tunisia	23.2	22.0	18.4	15.4	20.9
Turkey	20.7	22.2	19.2	17.3	20.7
Turkmenistan	21.3	20.4	13.1	18.5	26.7
Uganda	36.8	23.0	15.3	14.0	11.0
United Arab Emirates	21.0	22.3	21.5	17.7	17.5
Uzbekistan	19.9	23.1	16.2	18.7	22.1
Yemen	29.2	23.2	14.6	16.7	16.3

**Table-4**  
**Percentage Contribution of Five Indicators of the Complementary Category**

Individual Share	Complements				
	Religion	Life	Progeny	Intellect	Property
Afghanistan	26.8	19.8	23.9	18.9	10.6
Albania	8.4	26.4	19.5	22.1	23.6
Algeria	19.2	23.2	21.6	21.3	14.7
Azerbaijan	10.3	24.6	20.3	22.8	22.1
Bahrain	18.9	18.1	25.4	23.1	14.6
Bangladesh	28.3	19.9	27.9	22.1	1.7
Benin	32.0	27.1	17.0	21.3	2.5
Brunei	20.7	23.1	22.8	22.4	11.0
Burkina Faso	40.3	18.9	19.4	18.2	3.2
Cameroon	26.9	17.7	24.4	18.9	12.2
Chad	42.6	15.3	21.6	17.1	3.4
Comoros	38.1	0.0	23.4	33.8	4.8
Djibouti	30.6	16.0	23.7	17.9	11.8
Egypt	19.9	24.7	19.3	19.8	16.3
Gabon	24.8	23.8	14.4	14.7	22.4
Gambia	30.6	20.5	19.0	22.7	7.3
Guinea	36.5	22.3	14.8	21.4	4.9
Guinea-Bissau	35.2	28.6	15.4	18.9	1.9
Guyana	20.7	25.7	12.2	25.6	15.7
Indonesia	24.5	20.5	25.8	22.2	7.1
Iran	20.2	23.2	18.3	19.9	18.4
Iraq	22.7	20.1	23.6	18.5	15.2
Ivory Coast	41.1	22.2	0.0	24.5	12.2
Jordan	17.9	22.6	19.2	19.8	20.4
Kazakhstan	0.0	29.8	18.4	27.4	24.4
Kuwait	18.2	24.5	20.3	22.9	14.1
Kyrgyzstan	16.5	24.7	19.5	25.2	14.1
Lebanon	19.7	25.2	20.8	19.9	14.5
Libya	20.0	24.1	19.2	22.9	13.9
Malaysia	20.1	23.0	18.9	17.1	20.9
Maldives	21.0	21.8	20.8	18.8	17.6
Mali	28.9	26.8	21.6	21.6	1.2
Mauritania	32.6	26.2	17.6	15.0	8.7
Morocco	20.8	22.4	21.5	18.7	16.5
Mozambique	35.5	12.0	33.9	18.1	0.4
Niger	33.3	25.0	28.8	10.8	2.2
Nigeria	33.7	26.9	19.0	20.4	0.0

Oman	19.2	18.4	24.4	23.2	14.8
Pakistan	31.5	18.7	23.0	18.8	8.0
Palestine	25.4	10.8	22.1	24.8	16.9
Qatar	18.9	18.1	23.3	25.1	14.6
Saudi Arabia	17.6	23.7	21.4	23.7	13.6
Senegal	31.5	18.7	22.6	20.5	6.8
Sierra Leone	38.6	16.5	20.7	23.0	1.2
Somalia	41.0	11.9	40.0	0.0	7.1
Sudan	31.8	10.4	13.5	33.2	11.1
Suriname	21.6	19.2	20.4	23.9	15.0
Syria	18.4	24.7	20.4	19.6	16.9
Tajikistan	21.8	11.3	26.3	27.0	13.6
Togo	31.5	19.7	19.5	22.7	6.6
Tunisia	18.9	22.7	20.3	20.1	18.1
Turkey	17.3	24.1	18.8	21.0	18.9
Turkmenistan	12.4	24.0	17.9	21.6	24.0
Uganda	35.9	14.1	24.7	18.8	6.4
United Arab Emirates	18.1	24.4	22.6	21.0	14.0
Uzbekistan	13.8	23.3	21.1	25.6	16.2
Yemen	27.4	12.9	27.4	22.4	9.9

**Table-5**  
**Percentage Contribution of Five Indicators of the Embellishment Category**

Individual Share	Embellishments				
	Religion	Life	Progeny	Intellect	Property
Afghanistan	25.9	21.1	30.1	6.0	16.9
Albania	11.3	15.3	23.6	27.4	22.4
Algeria	16.4	13.8	23.0	22.9	23.9
Azerbaijan	23.0	7.3	21.5	18.3	29.8
Bahrain	30.6	5.8	12.8	30.4	20.5
Bangladesh	15.2	24.4	23.4	11.3	25.7
Benin	16.2	5.3	32.5	15.5	30.5
Brunei	30.8	16.1	8.8	22.1	22.1
Burkina Faso	17.5	10.5	34.3	7.8	29.8
Cameroon	22.6	9.2	28.6	13.0	26.5
Chad	22.4	6.2	36.9	3.4	31.2
Comoros	19.8	16.0	27.4	11.8	25.0
Djibouti	20.4	9.3	31.4	8.3	30.6
Egypt	17.7	15.2	22.4	20.3	24.3
Gabon	23.1	11.8	26.7	10.0	28.3
Gambia	19.9	14.3	30.8	7.2	27.8
Guinea	21.7	12.6	28.2	10.2	27.4
Guinea-Bissau	20.3	14.7	32.4	4.1	28.5
Guyana	25.6	18.5	24.4	13.8	17.7
Indonesia	27.8	7.2	22.0	18.3	24.8
Iran	26.4	13.6	15.6	26.3	18.2
Iraq	22.1	12.2	24.0	16.9	24.7
Ivory Coast	0.0	9.6	40.2	14.6	35.7
Jordan	18.5	9.1	22.9	26.0	23.5
Kazakhstan	21.1	16.4	14.8	32.6	15.1
Kuwait	32.5	16.0	4.4	22.0	25.0
Kyrgyzstan	17.9	14.5	24.5	24.1	19.0
Lebanon	21.2	10.4	19.3	25.5	23.7

Libya	28.3	13.5	15.4	20.2	22.5
Malaysia	20.6	22.5	16.8	23.1	17.0
Maldives	27.3	22.6	25.7	15.8	8.6
Mali	18.3	17.5	29.8	9.4	25.0
Mauritania	26.1	1.9	32.5	8.8	30.7
Morocco	17.8	13.3	28.0	17.3	23.6
Mozambique	21.6	0.0	36.2	8.7	33.5
Niger	17.5	23.5	31.7	0.0	27.3
Nigeria	22.6	15.1	26.4	11.3	24.6
Oman	36.3	3.8	11.5	19.5	28.9
Pakistan	21.5	22.0	27.7	11.8	16.9
Palestine	14.7	14.1	24.3	24.7	22.2
Qatar	35.9	18.7	0.0	15.9	29.5
Saudi Arabia	18.1	27.5	9.6	25.1	19.7
Senegal	15.7	25.2	25.3	9.0	24.9
Sierra Leone	23.7	20.0	26.7	8.3	21.2
Somalia	27.2	6.7	30.1	9.7	26.3
Sudan	21.5	16.4	24.4	17.7	20.0
Suriname	32.2	23.9	26.6	17.4	0.0
Syria	22.8	9.7	21.8	18.9	26.8
Tajikistan	20.3	15.7	24.5	16.0	23.6
Togo	13.6	11.4	32.5	13.3	29.1
Tunisia	17.2	21.1	20.7	20.7	20.3
Turkey	11.7	26.1	18.0	26.4	17.8
Turkmenistan	28.3	14.6	14.5	20.2	22.4
Uganda	23.1	14.8	27.8	10.2	24.1
United Arab Emirates	27.0	18.9	9.7	22.8	21.6
Uzbekistan	26.8	23.3	20.9	10.4	18.6
Yemen	15.2	17.5	29.1	13.0	25.1

**Table-6**  
**MSI of the OIC Countries (Some OIC Countries of South America not Shown in this Map)**

