Can religious values reinvigorate the links between development and *falāh*?

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Abstract

Purpose — Previous studies have challenged the Human Development Index's (HDI) ability to emulate the achievement of *falāh* (happiness). This study aims to evaluate the role of religious values in establishing a positive link between the current measurement of development and *falāh*.

Design/methodology/approach — First, this study derives an improved value-loaded development measure from the concept of *Maqāsid al-Sharī'ah* (the higher objectives of Islamic law). Second, this paper compares the calculated *Maqāsid al-Sharī'ah* Index (MSI) with the HDI of some OIC countries by employing the parametric pair difference *z*-test and *t*-test along with the non-parametric Wilcoxon signed-rank test. Finally, the relationship of both indices and the proxy of *falāh* are examined by using the Ordinary Least Squares and the Generalised Method of Moments estimations.

Findings — As far as the religious-led development is concerned, the HDI underestimates OIC countries' development progress. Here, the MSI can better embody the attainment of *falāh* than the HDI.

Originality — To the best of our knowledge, this is the first study examining the empirical relationship between the MSI and *falāh*.

Research limitations/implications — This study only covers limited OIC countries due to the data availability issue.

Practical implications — The cultural-based development stemming from the religious values proves useful for putting the government effort towards the attainment of the objective of human well-being in the right direction.

Keywords: *Falāh* (*eudaimonia*/happiness), Human Development Index, *Maqāsid al-Sharī'ah*, Sustainable development, Well-being.

Type of paper: Research paper

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1. Introduction

As Simon Feeny and his co-authors rightly put it, "*...there is little evidence of income explaining the variation in happiness... The quest for alternative indicators of well-being ... is therefore well justified*" (Feeny et al., 2014, p. 454). Human well-being is a critical objective of development. However, the appropriate reporting method capturing the extent to which the development progress brings about happiness (*falāh* or *eudaimonia*) as the ultimate goal of the human being remains obscure (Kahneman et al., 2006; Naqvi, 2016).[1]

Even though economic growth should not be neglected, it can only capture a small picture of human happiness (Sen, 1999; Frey and Stutzer, 2002). It fails to integrate the non-market economic activities, non-money values and economic distribution (Tilak, 1992). The United Nations Development Programme (UNDP) constructs the Human Development Index (HDI) to address this issue. However, a plethora of literature has criticised the HDI for utilising inappropriate variables and oversimplifying the dimensions (Oladapo and Ab Rahman, 2018). This is the reason behind Blanchflower and Oswald's (2004) findings of the HDI's failure to predict the attainment of happiness in Australia. Achieving the third place in the 2004 HDI league table, Australia was unable to deliver happiness and satisfaction to its people relative to several lower HDI countries.[2] This raises the question of whether HDI can genuinely represent the process of human development.

This study seeks to construct a multidimensional index incorporating morality into both material and non-material aspects of development. Cultural (moral) values are among the omitted factors in the contemporary measurements of development (Granato, 1996), despite

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1   *Falāh* is the ultimate goal of Islamic economics, meaning human happiness and success. Its dimensions spread out between the mundane and hereafter life (Khan, 1984).

2   The findings are deemed feeble by Leigh and Wolfers (2006), who document the opposite results. Our study sheds light on this puzzle within the setting of Muslim majority countries.

the growing literature suggesting its remarkable role on human happiness (Phillips et al., 2017). This paper embeds the country's cultural values stemming from the religious aspects into the formation of development measure, consistent with McCleary and Barro (2006) and Choudhury (2010), and subsequently poses the following fundamental question. Can the religious value-loaded measurement of development reliably proxy the attainment of happiness?

To this end, this paper focuses on predominantly Muslim countries, for they are considered unique and different from the conventional views (Sidani, 2019). Here, development is not merely about achieving the mundane welfare but also the hereafter one through the concept of *mardhatillah*, or seeking God's pleasure (Choudhury, 2019; Aydin, 2020). The latter is maintained to enable humans to continue progressing their *taqwa* (god-fearing) and heart and soul purification (*tazkiyat al-nafs*) (Mohamed, 2018; Khan and Naguib, 2019).

Thus, only by incorporating Islamic moral aspects to both material and non-material dimensions of development is the concept of *falāh* is attainable (Furqani et al., 2020). This requires the scholars of Islamic economics to go beyond traditional Islamic jurisprudence (Asutay and Yilmaz, 2021). Scholars rather derive the Islamic value system from the concept of *Maqāsid al-Sharī'ah* (the higher objectives of Islamic law) (Haniffa and Hudaib 2010). This tenet is hailed as the primary resource of the systematic decision-making framework in the Islamic moral economy (Choudhury, 1986).

This study thus proposes the so-called *Maqāsid al-Sharī'ah* Index (MSI) as the measurement of development, consistent with Dar (2004), Anto (2011), Amin et al. (2015), Aydin (2017), Hasan and Ali (2018), and Oladapo and Ab Rahman (2018).[3] The idea is to

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[3] This concept is also widely applied in Islamic financial institutions' performance evaluation (see Hameed et al., 2004; Mohammed et al., 2008; Kuppusamy et al., 2010; Mergaliyev et al., 2019). This study focuses only on the macro-level development measure.

abolish the domination of a particular factor of production (capital, labour, and environment) when assessing the development progress. Here, monetary value (*maal*) is only a small fraction of comprehensive developmental agenda, including preservation of life (*nafs*), posterity (*nasl*), intellect ('*aql*), and religion (*dien*) (Chapra, 2008).

Despite the growing literature on this topic, to the best of our knowledge, none of those studies has established a clear link between their proposed measurement of development and the realisation of human happiness or *falāh*. Fulfilling this gap will be the primary aim of our study. The novelty of this study also lies in synthesising the quantitative and qualitative approaches while constructing the proposed MSI. This has the ability to tone down the complexity of the qualitative method without succumbing to the lack of precision in quantitative measurement.

The first stage of this study constructs the MSI by integrating both Hasan and Ali's (2018) qualitative approach and Anto's (2011) quantitative method. It allows this study to capture the deeper meanings of MSI dimensions without neglecting the parsimony feature. The second part investigates whether our proposed MSI can predict the attainment of happiness and life satisfaction (*falāh*) better than HDI.

This study not only contributes to the existing literature on the formation of the MSI as an improvement of HDI mentioned above but also enhances the ability of the existing development index to measure the fulfilment of human happiness (Mikucka, 2017). The proposed MSI is applicable to the Muslim regions and the rest of the world as its moral dimensions are constructed using widely accepted indicators. In a way, it also emphasises the universal role of religion in economic development (McCleary and Barro, 2006; Sidani, 2019).

The rest of this study is organised as follows. The next three sections thoroughly review the literature on the evolution of development measurements (Section 2), integration of cultural (*i.e.*, Islamic) value system into the measurement of development (Section 3), and the role of

happiness in representing the goal of development (Section 4). The methodology and construction of the MSI are described in Section 5. Section 6 discusses the empirical results of MSI scores in the Muslim regions and their relationship with *falāh*. Section 7 concludes the study.

2.   The evolution of development measures

Development was originally measured as a nation's capability to maintain its economic growth reflected by the Gross National Product. This paradigm then shifted to the issue of income distribution encouraged by the Kuznets' trickle-down effect. The latest progression started to recognise development beyond economic matters, locating human beings as the primary end and the principal means of development (Anand, 2009). Consequently, the physical well-being, greater choices and enhanced empowerment have become essential aspects of human development (Ranis and Stewart, 2000).

In 1990, UNDP released HDI to embrace more comprehensive indicators comprising the dimensions of (i) economy (income per capita); (ii) education (literacy and gross enrolment ratio); and (iii) health (life expectancy). Those aspects are believed to reflect the attainment of happiness (Hall and Helliwell, 2014). However, the fact that the empirical literature does not necessarily support this notion (see Blanchflower and Oswald, 2004) leads scholars to scrutinise alternatives.

HDI is deemed fail to capture the human development aspects of freedom and human rights, autonomy and self-reliance, independence and sense of community, and environment (Noorbakhsh, 1998). Critiques also concern about the equal weight and trade-off between its variables (Ravallion, 1997); choice of dimensions (Boer and Koekkoek, 1993); and the combination between stock and flow variables (Hou et al., 2015).

Responding to those critiques, UNDP has attempted to publish several supporting indices, including the Human Poverty Index, Gender Development Index, and Gender

Empowerment. Many scholars have also endeavoured to consider additional issues such as environment and sustainability (Neumayer, 2001), moral and ethics (Dar, 2004), family (Bagolin and Comim, 2008), and inequality (Alkire and Foster, 2010). However, they have fallen short of establishing the link between their proposed indices and attainment of happiness.

The eminent limitation of the HDI that becomes the focus of our study is its inability to capture the diverse value system across territories. This is because the growing literature has documented that happiness is contingent on the fulfilment of moral values of agents' lives (Phillips et al., 2017). While HDI has incorporated both material and non-material factors, morality has not been taken into account. This might be among the reasons why the relationship between HDI and happiness is still obscure.

3. Integrating Islamic cultural value into the measurement of development

Cultural value is one of the significant factors of development that should be incorporated into the HDI (Granato et al., 1996). An inseparable part of it comes from religion. Studies have documented general agreement about the significant effect of religion on economic development (McClearly and Barro, 2006; Sidani, 2019).

The Organisation of Islamic Cooperation (OIC), as the focus of our study, has a unique culture stemming from the Islamic value system. Ignoring the Islamic value system may yield a biased picture of their development. Aydin (2017) shows that incorporating the moral value of OIC countries into the development measure leads to significantly different rankings compared to the HDI one. This finding is in harmony with Anto (2011), who documents that the contemporary HDI underestimates the development progress of the Muslim countries. The differences do not merely root in the inclusion of non-material aspects in the Islamic concept of development. HDI has also acknowledged the non-material components of health and education on top of income. It is rather the moral aspect embedded in both material and non-material dimensions that make the Islamic notion of development superior (see Ahmad, 1994).

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The Islamic value system originating from the *Qur'ān* (the holy book of Islam) and *Sunnah* (the prophetic traditions) regards development beyond physical aspects. Chapra (2009, p. 16) summarises the concept as follows.

> "...if human beings are the end as well as the means of development, their reform and well-being need to be given the utmost importance… the religious worldview carries the potential of enabling...the fulfilment of all the spiritual as well as material needs…."

The balance between fulfilling the spiritual and material welfares stems from the *unity* concept advocated by the Islamic worldview. Here, the utility function is maximised not only through satisfying the mundane benefits but also the hereafter one (Choudhury, 2019). In so doing, the concept of *mardhatillah*, or seeking God's pleasure, is essential in the ethical framework of Islamic socio-economic development (Aydin, 2020). The development process should enable human to make continuous progress towards the betterment of their *taqwa* (god-fearing) and purification of their heart and soul (*tazkiyat al-nafs*) (Khan and Naguib, 2019). This mechanism is also expected to benefit society through a more just aggregate socio-economic decision-making done by individual moral agents (Mohamed, 2018). Therefore, in order to achieve *falāh*, development "should recognise the multi-dimensional level of human actions and not reduce them into "mono-dimension" behaviour motivated by narrow material self-interest" (Furqani et al., 2020, p. 455).

The above development agenda can only be conceptualised by going beyond traditional Islamic jurisprudence (Ishak and Asni, 2020; Asutay and Yilmaz, 2021). Some studies provide a potential technical concept and measurement of development ensuing from the *Maqāsid al-Sharī'ah*. The Arabic word *Maqāsid* (a plural of *Maqsid*) lexically means purposes, objectives, goals, ends, means, or principles while *al-Sharī'ah* refers to the Islamic law. Therefore, the *Maqāsid al-Sharī'ah* is commonly translated into "*the objectives/purposes behind Islamic rulings*" (Auda, 2007, p.2).

The very objective of Islamic law is attaining minimum essentialities of basic human needs, namely faith, life, intellect, posterity and wealth (Chapra, 2008; Haniffa and Hudaib 2010). These five dimensions of the *Maqāsid al-Sharī'ah* were first institutionalised by a great Muslim scholar al-Ghazali (1058-1111). It "*covers the total well-being of man and his immediate environment in accordance with the designed to safeguard and achieve human goals both here and hereafter*" (Shinkafi and Ali, 2017, p. 318). Hence, as far as the Ghazalian view is concerned, fulfilling the five necessities is the foundation to achieve the ultimate goal of Islam (*falāh*).[4]

Some studies have endeavoured to construct *Maqāsid Sharī'ah*-based indices in lieu of HDI. Dar (2004) proposes the Ethics-augmented HDI (E-HDI) incorporating the carbon dioxide emissions, freedom, family value, and faith dimensions on top of the existing HDI indicators. His findings suggest that most countries score low-to-moderate on faith indicator.

Another attempt is made by Anto's (2011) Islamic Human Development Index (I-HDI). The index consists of seven quantitative dimensions: faith, life, science, family-social, property, freedom, and justice. Anto's approach is endorsed by Oladapo and Ab Rahman (2018) who propose additional social justice and human rights indicators to the existing HDI in Nigeria. Amin et al. (2015) propose the *Maqāsid*-based Integrated Development Index (I-Dex). The index comprises six indicators: intellectual, moral, wealth, family, human dignity and self developments. However, this study engages with no empirical work.

Moving beyond the Ghazalian perspective, Aydin (2017) advocates the multidimensional Islamic HDI (iHDI) stemming from the Tawhidi anthropology, consistent with Choudhury (2010). Its indicators include physical, reasoning, spiritual, ethical, animal,

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[4] Other scholars (such as Ibn Taymiyyah (1262-1328) and his discipline Ibn Qayyim (1292-1350)) oppose restricting the objectives into mere five categories (Islahi, 2010). However, the Ghazalian perspective is arguably more parsimonious and accepted for the sake of universal measurement.

social, deciding, and oppressive selves. He concludes substantial differences between the advanced Muslim economies' Islamic and conventional indices.

Using the qualitative survey data of the World Values Survey (WVS), Hasan and Ali (2018) construct the *Maqāsid al-Sharī'ah* Deprivation Perception Index (MSDPI) within the framework of Alkire Foster dual-cut-off methodology in selected OIC members. The study categorises countries into four multidimensionally poor groups (very high, high, moderate, and weak). They suggest that *posterity* is the only dimension satisfied by all categories. Unfortunately, none of those studies has empirically examined whether or not their proposed indices can capture the attainment of *falāh.* This is precisely where this study tries to contribute. In so doing, this study synthesises the advantages of quantitative approach of Anto (2011) and the qualitative method of Hasan and Ali (2018) within the Gazalian framework, as discussed in Section 5.1.

4.   Between *falāh* and *eudaimonia*

This study goes beyond the previous literature by not only constructing the MSI but also establish its link with the attainment of human being's ultimate goal from an Islamic perspective, i.e., *falāh.* Realising *falāh* is Islam's development objective. Khan (1984, p. 51) argues that "*Islamic economics aims at the study of human* falāh*...*". As *falāh* covers both the mundane and hereafter, morality should be embedded in its dimensions. The HDI may fail to capture countries' progression towards *falāh* due to the lack of ethics (Phillips et al., 2017). The *Maqāsid Sharī'ah* can fulfil this gap, for Islamic morality is inseparable from its measurement.

This paper concurs with Zaman (1984) and Arif (1985) employing the concept of *eudaimonia* (happiness) as the proxy of *falāh* due to the following reasons. First, happiness is commonly recognised as a meaning and underlying purpose of life regardless of the values

believed by individuals (Oswald, 1997). A strand of the literature suggests that happiness is a valid means to infer the preference and quality of life (Stiglitz et al., 2010). It is dynamic for not only representing the condition of individuals but also showing the capability of them to function and accommodate beyond the material dimensions. It is thus plausible to reflect happiness on the attainment of appropriate human development.

Second, the concept of happiness is relatively straightforward to measure as compared to, for instance, the Aydin's (2017) perfection of the human being. While the definition of happiness is hazy, the measurement is practical. Frey and Stutzer (2002) argue that happiness can be measured by asking people how satisfied they are with their lives. Fortunately, this type of question is available in the WVS database. This study also adds life satisfaction as the second (robustness) proxy of *falāh*, provided by the WVS.

People's adjustment towards unfavourable events (adaptive preference) may jeopardise happiness' accuracy in measuring well-being (Sen, 2000). However, its role in development remains crucial. First, happiness is an essential component of well-being. Sen and his co-authors state that *"[d]ispite the persistence of many unresolved issues, these subjective measures [happiness] provide important information about quality of life"* (Stiglitz et al., 2010, p. 18). Second, recent studies have found that adaptive preference only occurs partially. Oswald and Powdthavee (2008) document that disabled people do not routinely return to their old well-being level after the tragedy. Finally, the survey's respondents can generally separate happiness as a temporary emotion or a judgment about the whole quality of life (Hall and Helliwell, 2014).

To sum up, the above literature review shows the gap between the measurement and the goal of development. Cultural values are among the essential missing aspect uncaptured by contemporary development measures such as HDI. Within the context of Islamic values, fast-growing studies have endeavoured to develop value-loaded development measures based on

the *Maqāsid al-Sharī'ah* to reflect the attainment of *falāh*, the ultimate goal of the human being. Some of them employ a purely quantitative approach, while others are solely qualitative. However, to the best of our knowledge, none of the previous studies has established the link between their constructed *Maqāsid al-Sharī'ah*-based index and *falāh*. This is where our study seeks to contribute. Another contribution is methodological, where we combine both the quantitative and qualitative methods to benefit from the advantages posed by the two seemingly contrasting approaches.

5.   Data and methodology

5.1. *Research philosophy, design and empirical strategy*

This study adopts the pragmatism research philosophy. While the ontology and epistemology are developed under objectivism, its axiology adheres to subjectivism by incorporating the religious values of the Muslim world.

Our research design comprises of two stages. First, this study derives an improved value-loaded development measure from the concept of *Maqāsid al-Sharī'ah*. The index construction is done by synthesising quantitative and qualitative approaches of Anto (2011) and Hasan and Ali (2018), respectively (see Figure 1). While the stand-alone quantitative method is parsimonious, it may fail to capture the dimensional complexity. Anto's (2011) proxies of *posterity* (fertility and mortality rates) and *faith* (corruption perception index) seem to be oversimplified (Hackett, 2014). Contrarily, Hasan and Ali (2018) may better reflect the dimensions but inefficiently requiring primary survey. Our mix-approach reduces the qualitative method's difficulty without trading off the precision of the measures. This will be discussed further in Subsection 5.3.

[Insert Figure 1 about here]

Second, the relationship of both indices and the proxy of *falāh* are examined by using pooled cross-section Ordinary Least Squares (OLS) and the Generalised Method of Moments

(GMM).[5] The pooled cross-section data is utilised since the WVS is not regularly performed in each country every year. The cross-sectional GMM is employed for the robustness test, controlling the endogeneity issue between happiness and development measures. While GMM is generally used in panel data, Hansen (1982) suggests that this method is applicable in every setting. This includes the pooled cross-section data that contains both intertemporal dynamic and individuality information (Wooldridge, 2001). Subsection 5.4 discusses this stage in more detail.

5.2. *Data collection method*

Table I illustrates the data sources for MSI construction.[6] The World Bank and UNDP quantitative data are used to construct *wealth, life* and *intellect* dimensions. The newest possible survey data from WVS wave 4 (1999-2004), 5 (2005-2009), and 6 (2010-2014) are employed to develop *posterity* and *faith* dimensions (see Table II).[7] The WVS data is also retrieved for our dependent variables, namely *happiness* and *life satisfaction* (discussed further in Subsection 5.4). While each WVS wave covers five year-period, every country was surveyed in a single year only. For instance, Iraq data comes from wave 6 (2010-2014), but the survey was conducted only in 2013. This WVS year becomes the basis period for the rest of the variables. If the data is not available in the basis year, interpolation from the nearest pre- and post-points is employed. The 57 OIC members are the focus of our study. However, some

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[5]   Please note that the pooled cross-section OLS is different from the Pooled OLS as far as the data structure is concerned. The latter is arranged as a panel or longitudinal data, comprising a time series for each cross-section. On the other hand, the former is akin to cross-section data, but each individual may be collected from different time points.

[6]   The details of index construction will be discussed in Subsection 5.3.

[7]   The WVS wave 6 is the latest full report that currently available. The 7th round of the survey (2017-2021) has been conducted since 2017, but the complete data and survey documentation will not be accessible until January 2022. This is why our dataset terminated in 2014. See the following link for details of the ongoing WVS wave 7: https://www.worldvaluessurvey.org/WVSContents.jsp (accessed 5 April 2021).

countries are excluded from the analysis due to data availability issue. Thus, our final sample

covers 26 OIC countries across different regions, with the period ranges from 2002 to 2014.

[Insert Table I & II about here]

5.3. First stage: Index construction

The first stage of this study involves the construction of the MSI. Our proposed MSI is derived

from the conceptual framework depicted in Figure 1 and Table I. The *wealth* dimension solely

represents the material well-being index (MWI) measured by the equally weighted index of

three quantitative indicators, namely GNI per capita, Gini, and poverty rate ($MWI =$

$(GNI + Gini + Poverty)/3$).

On the other hand, the non-material well-being index (NWI) is formed by *life*, *intellect*,

posterity, and *faith* dimensions, where each of them has the same weight ($NWI =$

$(Life + Intellect + Posterity + Faith)/4$). *Life* is formed using the quantitative indicator of

life expectancy and *intellect* is composed of the mean years of schooling and expected years of

schooling indicators.

This study transforms all the quantitative indicators into an index by employing eq.1a,

consistent with the HDI methodology of UNDP. The inverse formula of eq.1b is used to

calculate indicators that negatively related to the index, namely Gini and Poverty. The actual

value represents a country's indicator score, while the maximum and minimum ones are

respectively the highest and the lowest possible values of the respective indicator.

$$Indicator_i(+) = \frac{actual\ value_i - \text{minimum}\ value_i}{maximum\ value_i - minimum\ value_i} \tag{1a}$$

$$Indicator_i(-) = 1 - \frac{actual\ value_i - \text{minimum}\ value_i}{maximum\ value_i - minimum\ value_i} \tag{1b}$$

The survey data provided by the WVS is utilised for constructing the *posterity* and *faith*

dimensions. In the survey, respondents were asked to answer questionnaires, which mainly are

Likert scale questions. Table III illustrates the summary of questionnaires used to calculate

them. *Posterity* employs questions regarding (i) *importance of family* (IF) and (ii) *justifying prostitution* (JP). *Faith* is captured by (i) *importance of religion* (IR), (ii) *attendance to religious service* (AR), (iii) *importance of God* (IG), (iv) *respect for human right* (HR), and (v) *accepting bribes* (AB).

[Insert Table III about here]

This paper employs eq.2a to construct the index of the qualitative data. Again, eq.2b is utilised when the Likert scale inversely measures the prevalent index, i.e., JP and AB. Where *s* represents the Likert score, *p* depicts the proportion of respondents choosing that value (*s*), and *n* stands for the number of the scale.[8] Each dimension is an equally-weighted average of its indicators.

$$Indicator_i(+) = \frac{\sum_{k=1}^{n} p_k \cdot s_k}{n} \tag{2a}$$

$$Indicator_i(-) = 1 - \frac{\sum_{k=1}^{n} p_k \cdot s_k}{n} \tag{2b}$$

Finally, we calculate the MSI assuming that the MWI and NWI have the same weight ($MSI = (MWI + NWI)/2$). While the index is derived from the unique Islamic morality, this subsection shows that its construction employs general indicators. This implies that the MSI is universal and applicable to all nations, regardless of their religion.

This study further comparatively analyses the scores of MSI with that of HDI for the respective countries in the sample. On top of the pictorial comparison between the two, this article also performs both parametric t- and z-paired difference tests as well as the non-parametric Wilcoxon signed test. These are done to evaluate whether the constructed MSI offers different results than the HDI.

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[8] For instance, the indicator A has two-scale of Likert. The survey shows that 20% of country Z's respondents choose 1 and the rest opt 2. The value of A becomes 0.9 $\left(\frac{20\%*1+80\%*2}{2}\right)$ calculated utilising eq.2a. Eq.2b applies when the Likert scale measures the indicator inversely. Here, the value of A becomes 0.1 ($1 - 0.9$).

5.4.   Second stage: Link between MSI/HDI and falāh

The second stage of this study seeks to examine the nexus between our constructed MSI/HDI and *falāh*. In so doing, the following models (eq.3a-3d) are estimated using the pooled cross-section OLS and GMM methodologies.

$$Happiness_{i,t} = \alpha + \beta MSI_{i,t} + \gamma X + u_{i,t} \tag{3a}$$

$$Happiness_{i,t} = \alpha + \beta HDI_{i,t} + \gamma X + u_{i,t} \tag{3b}$$

$$Life\ Satisfaction_{i,t} = \alpha + \beta MSI_{i,t} + \gamma X + u_{i,t} \tag{3c}$$

$$Life\ Satisfaction_{i,t} = \alpha + \beta HDI_{i,t} + \gamma X + u_{i,t} \tag{3d}$$

On the left hand-side of the equations, *Happiness* and *Life Satisfaction* are utilised as proxies of *falāh*. The construction of the two ensues from the WVS questions illustrated in Table III. First, the *happiness* variable is constructed using the 5-scale Likert question of *"[t]aking all things together, would you say you are feeling happy?"* Second, *life satisfaction* is used to address the bias stemming from adaptive preference (Hall and Helliwell, 2014). The 10-scale Likert question asks that *"[all] things considered, how satisfied are you with your life as a whole these days?"* Eq.2a is then applied to calculate their aggregate scores.

On the right-hand side of the equations, the MSI and HDI respectively depict our *Maqāsid Sharī'ah* Index and the Human Development Index. *X* represents the control for the region of the country in the sample. Four dichotomous variables are used to capture the CIS (Commonwealth of Independent States), NEAST (Near East), NAFRICA (North Africa) and SSA (Sub Saharan Africa) regions. Six Instrumental Variables (IVs) from the Worldwide Governance Indicators are also employed in the GMM, namely (i) Control of Corruption, (ii) Government Effectiveness, (iii) Rule of Law, (iv) Political Stability, (v) Regulation Quality and (vi) Population. The data is retrieved from the World Bank Database.

6. Result and discussion

6.1. Comparative descriptive analysis of the proposed MSI

Some main findings from the proposed MSI are worth highlighting in this subsection. First, Table IV and Figure 2 indicate the uneven geography of development within the OIC region, with respect to the *intellect* and *wealth* dimensions. This can be inferred from their relatively high standard deviations (*i.e.*, 15.18 and 13.06, respectively), provided that the majority of variables are normally distributed at 5% significance level employing the Kolmogorov-Smirnov test. The *intellect* is an aspect the OIC countries still lack behind. Its average is only 56.20, with the lowest value of 19.40 belongs to Burkina-Faso. Kazakhstan scores the highest *intellect* dimension of 79.10. On the other hand, the *wealth* aspect has a maximum value of 100, the lowest score of 50.18 dragging its mean to 71.28. The petroleum-based economy, such as Qatar, Kuwait, and Saudi Arabia, score well above the others in this dimension as expected.

[Insert Table IV & Figure 2 about here]

Second, the uneven dimension of development also occurred, particularly between *intellect* and *posterity*. While the overall score of *intellect* is low, the OIC countries seem to pay good attention to the *posterity*. On average, they gain 93.19, with the lowest value equals to 80.22. In other words, they put a very high priority on family and reject the practice of prostitution.

Third, as far as the HDI is concerned, our findings suggest that the OIC countries' development scores seem to be underestimated. They generally notch higher development scores after accounting for their cultural value employing the proposed MSI. On average, their MSI score is 73.99, higher than a 66.40 of the HDI one. Figure 3 shows that the distribution of the development score moves to the right. The lowest and the highest values increase from 34.40 to 55.27 and from 82.50 to 93.28, respectively. Our paired difference tests employing

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both the parametric (*z*- and *t*-test) and non-parametric (Wilcoxon signed-rank) also consistently confirm that the MSI provides a statistically higher score than the HDI (see Table V). The MSI also offers a less unequal development score distribution than the HDI in the spatial context of the OIC countries (see again Figure 3).

[Insert Table V about here]

[Insert Figure 3 about here]

Fourth, the fact that the two indices have a strong Pearson correlation of 0.9 (see Table V) does not annul the improvement offered by MSI. This high association is predicted since the two share similar measurements of *intellect*, *life*, and part of *wealth*. This allows us to control the distinctions between the two indices ensuing only from the additional spiritual and moral indicators employed in the proposed MSI. Table IV illustrates how incorporating ethical aspects significantly changes most countries' ranks (more than 80%). This is not to mentioned that the MSI generally advances higher scores than HDI, as discussed earlier.

Fifth, this study also compares our constructed index with the I-HDI of Anto (2011) and MSDPI of Hasan and Ali (2018) in Table VI.[9] This paper accords with the two previous studies that HDI underestimates the development progress in the Muslim world. A consensus is also reached regarding the top performers, such as Qatar and Kuwait. However, the rest of the ranking shows a few differences. Our proposed MSI converges with I-HDI while bridging the gap between the sole quantitative method of Anto (2011) and the whole qualitative approach of Hasan and Ali (2018). Malaysia is a compelling example of this. The Southeast Asian country ranks 3 in I-HDI and 11 in MSDPI, while the proposed MSI adjusts Malaysia's rank to 4.

[Insert Table VI about here]

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9   This comparative analysis should be analysed with cautions due to the diverse base year of the three studies.

Finally, where the *falāh* is concerned, the happiness and life satisfaction variables have a consistent pattern, with the average index values of 75.69 and 64.20, respectively (see again Table IV). Egypt becomes the least happy and satisfied country as it scores only 46.88 and 48.59 of the happiness and life satisfaction variables. On the other hand, Uzbekistan and Qatar are the happiest and the most satisfied countries, respectively.

6.2.   Relationship between MSI/HDI and falāh

6.2.1.   Correlation

The relationship between MSI/HDI and happiness/life satisfaction is quite intriguing as the patterns between the paired series is not clearly observed through the descriptive analysis. Figure 4 shows the scatter diagram for the four mentioned variables. While a country like Qatar has a consistent positive relationship between HDI/MSI and happiness/life satisfaction, others seem more obscure. Burkina-Faso is a compelling example. Obtaining the lowest HDI and MSI scores does not necessarily make the West African country the least happy or satisfied. Instead, Egypt situated in the 15th and 16th MSI and HDI ranks, respectively, scores the lowest happiness and life satisfaction values.

[Insert Figure 4 about here]

The correlation graph depicted in Figure 5 offers a clearer picture. Here, MSI seems better capturing the attainment of happiness and life satisfaction than HDI. The MSI has consistently higher correlation slopes and more statistical significance against both proxies of *falāh* than the HDI. The MSI-happiness correlation is 0.27 (0.14 in the case of HDI), while that of MSI-life satisfaction is 0.53 (0.48 in HDI), even though the former is statistically insignificant.

[Insert Figure 5 about here]

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6.2.2. OLS results

The relationship between MSI/HDI and *falāh* proxies is then examined by employing a standard OLS methodology. Table VII presents the results of our regression analysis. The model regresses each development index on happiness and life satisfaction separately after controlling the region's fixed effect to exclude biases stemming from their diverse political conditions (see Table II). The findings indicate that both indices have a positive and significant relationship with happiness and life satisfaction. They are thus good proxies for the development measure. However, the MSI can be a better proxy in determining the attainment of *falāh*, agnostic to its measurement of happiness or life satisfaction, due to the following grounds.

[Insert Table VII about here]

First, MSI consistently provides higher explanatory powers than HDI, as shown by the adjusted R-squared. The proposed index, along with the control variables, explains 24.3% of the happiness. While the HDI can explain some variation in the happiness variable, its power is much less than that of the MSI, *i.e.*, 14.7%. This circumstance is also true in the context of life satisfaction. MSI even has a higher ability to explain the movement of life satisfaction by 47.5%, as compared to 42.8% in the case of HDI.

Second, the effect of MSI to happiness is positive and significant at 1%. Even though the positive sign is also observed in the HDI-happiness relationship, its marginal effect is lower and less significant. As far as happiness is concerned, the HDI parameter is almost half of that of MSI (*i.e.*, 0.238 vs 0.463) and is only statistically significant when the confidence level is relaxed to 90%. The two development proxies seem to have a greater role in determining life satisfaction. Both MSI and HDI have a positive relationship with our second proxy of *falāh*. This nexus is strong at 1% significance level. However, in harmony with the effect on

happiness, MSI has a more substantial marginal effect of 0.609 against 0.448 in the case of HDI.

Thus, incorporating value-specific aspects in the MSI, such as *faith* and *posterity*, can improve its power to determine the attainment of *falāh* as the primary goal of the human being.

6.2.3. Robustness: GMM results

We also apply the cross-sectional GMM to check the robustness of the previous regression results in Table VIII. The two-step procedure is employed to improve the efficiency of our GMM estimator. Here, some instrumental variables (IVs) are used, including the control of corruption, government effectiveness, the rule of law, political stability, regulation quality, and population. The Sargan test suggests that the overidentification of our IVs is valid since all J-statistics are statistically insignificant and thus fail to reject the null hypothesis. The GMM estimation suggests consistent findings against the OLS. First, the relationship between the development proxies (MSI and HDI) and *falāh* is positive and significant. Second, the marginal effect of the former on the *falāh* proxies of happiness and life satisfaction is greater than that of the latter. One per cent increase in MSI leads to 0.72% and 0.65% improvement in happiness and life satisfaction. On the other hand, the same rise in HDI only enhances the two proxies of *falāh* by 0.67% and 0.61%, respectively.

[Insert Table VIII about here]

7.   Conclusion and policy implication

The HDI is hitherto the most widely used measurement of development. Some, however, put doubt in its ability to represent the attainment of *falāh*—Islam's development objective (Khan, 1984). The disembeddedness of moral values from the index is to blame (Granato, 1996; Phillips et al., 2017). Our study sheds light on this issue by not only proposing an improved index but also examining whether the constructed measurement can better representing the progression towards *falāh*. In so doing, this study advocates the *Maqāsid al-Sharī'ah* Index

(MSI), incorporating preservations of five main dimensions of Islamic law's ethical objectives, namely *wealth*, *life*, *intellect*, *posterity*, and *faith*, into development measure. While this concept stems primarily from religious-driven cultural values of Muslim majority countries, its constructions are universally applicable. It thus can be applied by all nations, just like HDI.

Our study uncovers some pivotal findings. First, our proposed MSI illustrates the inequality of development progress in the *intellect* and *wealth* dimensions within the OIC countries. Burkina-Faso scores the lowest in both dimensions, far behind Kazakhstan for the *intellect* and Qatar and Kuwait for the *wealth.* Second, the uneven dimension of development is observed between *intellect* and *posterity*. The OIC countries lack far behind in the *intellect* dimension but are superior in preserving *posterity* (future generations).

Third, the HDI underestimates the OIC's development progress, consistent with Anto (2011) and Aydin (2017). Our paired difference tests confirm that the MSI provides a statistically higher score than the HDI. Moreover, employing a mixed-method methodology can bridge the gap between a fully quantitative study like Anto (2011) and a sole qualitative one like Hasan and Ali (2018). It offers the benefit of capturing hard-to-quantify variables without trading off the parsimony principle.

Finally, our regression results show that MSI can better predict the attainment of *falāh* than the HDI. HDI is a determinant of happiness and life satisfaction, in harmony with Leigh and Wolfers (2006) but at odds with Blanchflower and Oswald (2004). However, MSI consistently provides higher explanatory powers and marginal effects. These findings reveal the significance of the cultural aspect in improving the measure of development. The improved performance of MSI stems from the additional dimensions of *posterity* and *faith*, along with the adjustment in the indicator of *wealth*.

The main implication of our findings to the development economics literature is apparent. Religious values can reinvigorate the link between development and *falāh*. The cultural-based

development stemming from religious values proves useful in putting the government effort towards attaining the objective of human well-being in the right direction. Our findings provide, to the best of our knowledge, the first empirical evidence to the theory that advocates the critical role of morality on the development process, including Dar (2004), Anto (2011), Amin et al. (2015), Aydin (2017), Hasan and Ali (2018), Mohamed (2018), Oladapo and Ab Rahman (2018), Choudhury (2019), Khan and Naguib (2019), Aydin (2020), and Furqani et al. (2020). It, thus, paves the way for further empirical research on the subject matter.

This study also derives three main practical implications for policymakers. First, as far as cultural-based development is concerned, countries have to incorporate morality into their measurement of development for bringing about *falāh* to their citizens. Each country needs to perform a yearly WVS-like survey to capture difficult-to-quantify variables such as *posterity*, *faith, happiness* and *life satisfaction*. Adding a few more questions to the annual survey is not a burdensome task for the national bureau of statistics. J,k.

Second, as far as the inter-dimensional inequality is concerned, the development of the *intellect* needs to be accelerated by OIC countries. Human capital is the fuel of development. The bright mind brings about the vision for the country to develop in the right way. Investment surely needs to be allocated to provide high-quality educations.

Finally, the partnership and solidarity among OIC members should be strengthened to redeem the regions from uneven geographies of development. A collective mechanism of cross-border resource allocation, allowing the top performer countries to help the deprived ones, is needed. The unbounded *zakat* practice of transferring benefits from a developed nation to beneficiaries in less-developed ones can be a good start.

This study acknowledges some limitations for future research considerations. First, the limited sample size due to the data availability needs to be improved. Accordingly, further studies may expand the analysis to non-OIC countries, hence a larger sample. Second, the index

construction in this study is restricted to the Ghazalian *Maqāsid al-Sharī'ah*. While it is widely acceptable and relatively straightforward to execute, some critical aspects are left unexplored. Subsequently, further research may enhance the index construction by applying beyond the five dimensions of Ghazalian *Maqāsid al-Sharī'ah*, including environmental and social aspects.

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Tables

<p align="center">Table I. Maqāsid al-Sharī'ah Index (MSI) construction</p>

Well-being index	W₁	Dimension	W₂	Indicator	W₃	Data source
Material (MWI)	0.50	*Wealth*	1.00	GNI per capita	0.33	UNDP
				Gini	0.33	World Bank
				Poverty rate	0.33	
Non-material (NWI)	0.50	*Life*	0.25	Life expectancy	1.00	UNDP
		Intellect	0.25	Mean years of schooling	0.50	
				Expected years of schooling	0.50	
		Posterity	0.25	Importance of family	0.50	WVS
				Justifying prostitution	0.50	
		Faith	0.25	Importance of religion	0.20	
				Attendance to religious service	0.20	
				Importance of God	0.20	
				Respect for human right	0.20	
				Accepting bribes	0.20	

Note: W₁, W₂, and W₃ respectively represent each element's weight for calculating the MSI index, dimension, and indicator.

<p align="center">Table II. Sample across regions</p>

No	Near East	Wave(Year)	Asia	Wave(Year)	North Africa	Wave(Year)
1	Iraq	6(2013)	Bangladesh	4(2002)	Algeria	6(2014)
2	Jordan	6(2014)	Indonesia	5(2006)	Egypt	6(2012)
3	Kuwait	6(2013)	Iran	5(2005)	Libya	6(2013)
4	Lebanon	6(2013)	Malaysia	6(2011)	Morocco	5(2007)
5	Palestine	6(2013)	Pakistan	6(2012)	Tunisia	6(2013)
6	Qatar	6(2010)				
7	Saudi Arabia	4(2003)				
8	Turkey	6(2011)				
9	Yamen	6(2013)				

No	CIS	Wave(Year)	Sub-Saharan	Wave(Year)	East Europe	Wave(Year)
1	Azerbaijan	6(2012)	Burkina-Faso	5(2007)	Albania	4(2002)
2	Kazakhstan	6(2011)	Mali	5(2007)		
3	Kyrgyzstan	6(2011)				
4	Uzbekistan	6(2011)				

Note: CIS stands for Commonwealth of Independent States. Wave and Year represent the wave of WVS and the survey period for each country.

Table III. Qualitative dimensions construction

Dimension	VWS Questions	Code	VWS4	VWS5	VWS6
Posterity	Importance of family	IF	V4	V4	V4
	Justifying prostitution	JP	V209	V203	V203
	Importance of religion	IR	V9	V9	V9
	Attendance to religious service	AR	V185	V186	V145
Faith	Importance of God	IG	V196	V192	V152
	Respect for human right	HR	V173	V164	V142
	Accepting bribes	AB	V207	V201	V202
Dependent Variables					
Happiness	Feeling of happiness		V11	V10	V10
Life Satisfaction	Life Satisfaction		V81	V22	V23

Note: WVS stands for the Wave of the World Values Survey. V represents the questionnaire number in a given wave.

Table IV. Descriptive statistics

No	Country	Wealth	Life	Intellect	Posterity	Faith	MSI	HDI	Happiness	Life Satisfaction	MSI-Rank	HDI-Rank	Diff.
1	Albania	59.53	84.00	59.80	96.51	66.05	68.06	68.20	64.30	51.55	21	14	-7
2	Algeria	80.20	85.20	66.10	87.66	79.64	79.92	74.70	69.58	61.27	6	8	2
3	Azerbaijan	81.07	79.20	68.90	93.32	75.26	80.12	74.50	76.30	66.62	4	9	5
4	Bangladesh	55.05	75.10	36.20	98.61	85.09	64.40	48.30	72.48	55.75	23	24	1
5	Burkina-Faso	50.18	53.60	19.40	89.67	78.80	55.27	34.40	73.70	54.37	26	26	0
6	Egypt	70.93	78.10	57.10	92.92	78.89	73.84	67.50	46.88	48.59	15	16	1
7	Indonesia	53.34	72.90	56.70	96.71	85.56	65.65	64.10	78.50	65.42	22	19	-3
8	Iran	66.35	79.90	55.20	95.83	77.68	71.75	69.50	72.60	64.18	18	13	-5
9	Iraq	76.57	75.70	50.10	89.81	79.68	75.19	66.60	67.98	58.69	11	18	7
10	Jordan	73.03	83.00	69.60	98.86	85.82	78.68	73.00	75.58	66.15	8	10	2
11	Kazakhstan	81.70	74.00	79.10	92.22	66.73	79.86	77.20	79.83	72.28	7	4	-3
12	Kuwait	100.00	84.00	60.10	97.30	83.98	90.67	79.50	82.25	69.95	2	2	0
13	Kyrgyzstan	61.57	76.00	69.70	94.28	75.29	70.19	63.90	82.90	69.17	19	20	1
14	Lebanon	71.93	90.80	62.30	83.52	72.39	74.59	75.10	73.25	64.58	13	7	-6
15	Libya	72.30	79.40	61.60	91.03	78.60	74.98	70.70	80.33	72.04	12	12	0
16	Malaysia	78.47	83.70	69.40	92.81	80.99	80.10	77.80	80.53	71.41	5	3	-2
17	Mali	54.92	51.60	22.20	81.42	80.47	56.92	36.70	79.13	56.80	25	25	0
18	Morocco	70.60	80.90	42.20	98.85	87.73	74.01	59.40	75.60	52.29	14	21	7
19	Pakistan	64.70	70.30	37.60	96.49	82.54	68.22	53.50	81.43	75.43	20	22	2
20	Palestine	65.84	81.50	65.40	94.28	81.19	73.22	67.90	69.60	55.94	17	15	-2
21	Qatar	100.00	88.20	63.70	98.06	96.29	93.28	82.50	88.46	80.00	1	1	0
22	Saudi Arabia	91.40	81.50	58.00	96.50	81.07	85.33	75.60	83.58	72.34	3	5	2
23	Tunisia	72.79	84.90	63.80	94.03	79.74	76.71	72.30	72.73	55.47	10	11	1
24	Turkey	74.50	83.70	63.90	96.01	78.97	77.57	75.30	79.13	72.36	9	6	-3
25	Uzbekistan	69.07	77.40	68.10	96.01	72.90	73.84	67.40	89.83	78.50	16	17	1
26	Yamen	57.20	68.10	34.90	80.22	79.88	61.48	50.70	71.63	57.99	24	23	-1
	Mean	71.28	77.80	56.20	93.19	79.66	73.99	66.40	75.69	64.20			
	Minimum	50.18	51.60	19.40	80.22	66.05	55.27	34.40	46.88	48.59			
	Maximum	100.00	90.80	79.10	98.86	96.29	93.28	82.50	89.83	80.00			
	St.Dev.	13.06	9.12	15.18	5.16	6.24	8.98	12.45	8.48	8.83			
	KS-statistic	0.10	0.15	0.21^{Ψ}	0.16	0.16	0.13	0.20^{Ψ}	0.12	0.12			

Note: $^{\Psi}$ represents that the Kolmogorov-Smirnov normality test is significant at 5%.

Table V. Paired difference and correlation tests between MSI and HDI

Paired Tests	Statistic Values	
t-test	6.60	***
z-test	2.52	***
Wilcoxon signed test	0.00	***
Pearson Correlation Test	0.90	***

Note: The table depicts the parametric (*z*- dan *t*-statistic) and the non-parametric Wilcoxon signed-rank tests between MSI and HDI. The null hypothesis for all of them is that the increment between MSI and HDI is higher than zero (one-tailed positive). ***, ** and * represent significance at 1%, 5% and 10%, respectively.

Table VI. Comparison with related studies

No	Country	MSI vs I-HDI			MSI vs MSDPI			I-HDI vs MSDPI		
		MSI	I-HDI	Diff.	MSI	MSDPI	Diff.	I-HDI	MSDPI	Diff.
1	Albania	21	8	13						
2	Algeria	6	11	-5	5	17	-12	9	17	-8
3	Azerbaijan	4	19	-15	3	14	-11	15	14	1
4	Bangladesh	23	22	1						
5	Burkina-Faso	26	24	2						
6	Egypt	15	10	5	14	8	6	8	8	0
7	Indonesia	22	12	10						
8	Iran	18	13	5						
9	Iraq	11	26	-15	10	12	-2	19	12	7
10	Jordan	8	5	3	7	3	4	4	3	1
11	Kazakhstan	7	9	-2	6	19	-13	7	19	-12
12	Kuwait	2	2	0	2	2	0	2	2	0
13	Kyrgyzstan	19	14	5	17	15	2	10	15	-5
14	Lebanon	13	16	-3	12	18	-6	12	18	-6
15	Libya	12	18	-6	11	5	6	14	5	9
16	Malaysia	5	3	2	4	11	-7	3	11	-8
17	Mali	25	25	0						
18	Morocco	14	17	-3	13	7	6	13	7	6
19	Pakistan	20	20	0	18	13	5	16	13	3
20	Palestine	17	23	-6	16	4	12	18	4	14
21	Qatar	1	1	0	1	1	0	1	1	0
22	Saudi Arabia	3	4	-1						
23	Tunisia	10	7	3	9	10	-1	6	10	-4
24	Turkey	9	6	3	8	6	2	5	6	-1
25	Uzbekistan	16	15	1	15	16	-1	11	16	-5
26	Yamen	24	21	3	19	9	10	17	9	8

Note: This table compares the results of MSI with Anto's (2011) Islamic Human Development Index (I-HDI) and Hasan and Ali's (2018) *Maqāsid al-Sharī'ah* Deprivation Index (MSDPI). I-HDI's year base is 2007 while the MSDPI's is 2010-2014.

Table VII. The OLS (Ordinary Least Square) estimation results

|	Happiness		Life Satisfaction	
C	32.769***	48.044***	10.113	21.021**
	(3.018)	(5.277)	(0.950)	(2.778)
MSI	0.463***		0.609***	
	(2.904)		(3.891)	
HDI		0.238*		0.448***
		(1.786)		(4.034)
ASIA	11.896***	14.131***	13.692***	17.377***
	(7.407)	(7.244)	(4.619)	(5.099)
CIS	14.233***	17.305***	15.257***	18.951***
	(3.526)	(5.110)	(4.016)	(5.777)
NEAST	7.508***	11.667***	8.301***	13.283***
	(3.466)	(6.670)	(3.400)	(8.317)
NAFRICA	1.092	4.548	1.614	6.060
	(0.169)	(0.741)	(0.350)	(1.569)
SSA	17.656***	19.895***	11.320***	18.650***
	(7.425)	(4.938)	(6.129)	(5.431)
Adj. R2	0.243	0.147	0.475	0.428
P(Wald F)	0.000	0.000	0.000	0.000

Note: The dependent variables are *happiness* and *life satisfaction*. It compares MSI and HDI as the independent variable and region as a dummy variable. CIS, NEAST, NAFRICA and SSA respectively stand for Commonwealth of Independent States, Near East, North Africa and Sub Saharan Africa. ***, ** and * represent significance at 1%, 5% and 10%, respectively.

**Table VIII**. The GMM (Generalised Method of Moments) estimation results

	Happiness		Life Satisfaction	
C	56.265	29.296	42.093	17.646
	(0.475)	(0.309)	-0.328	-0.178
MSI	0.719**		0.652**	
	(2.126)		-2.022	
HDI		0.670**		0.607**
		(1.933)		-1.824
Region	YES	YES	YES	YES
J-statistics	0.000	0.000	0.000	0.000

Note: The instrumental variables are control of corruption, government effectiveness, the rule of law, political stability, regulation quality and population. The null hypothesis for Sargan's J-statistics is that the IVs are valid. ***, ** and * represent significance at 1%, 5% and 10%, respectively.
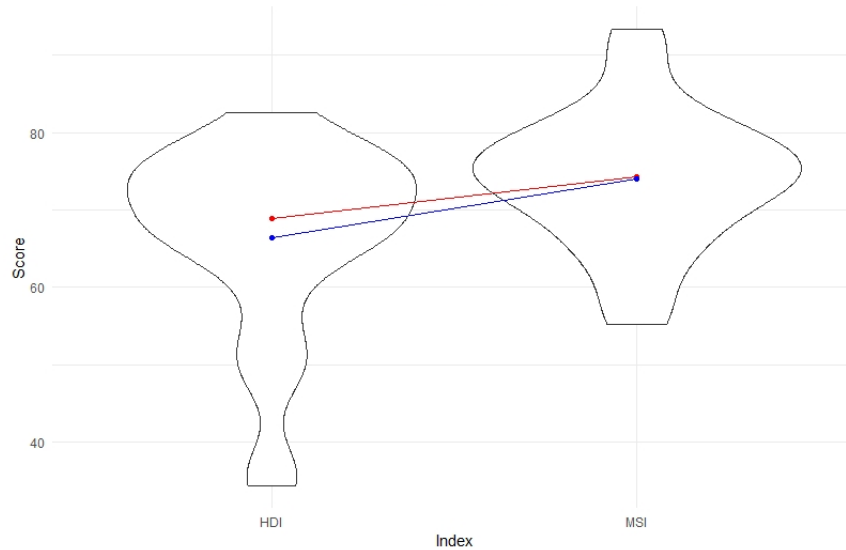
Figures
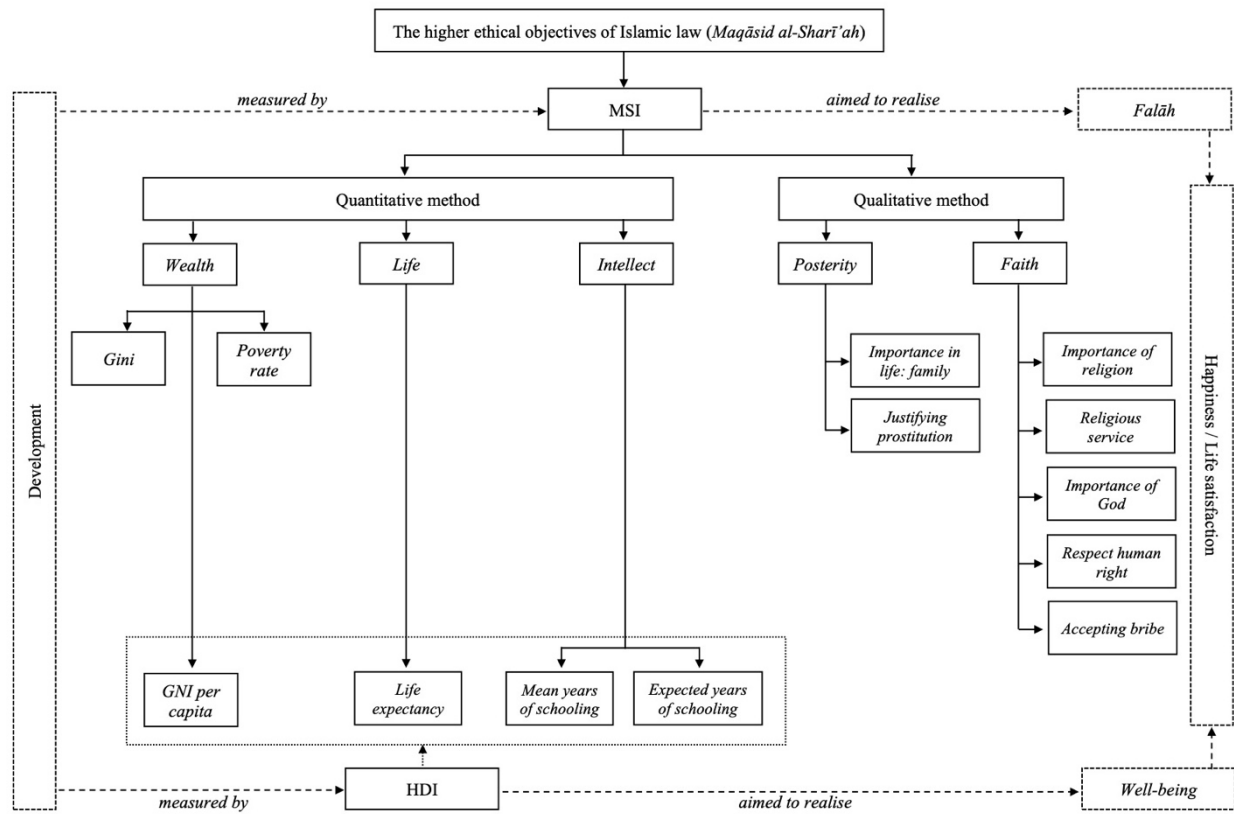
Figure 1. *Maqāsid al-Sharī'ah*-based development framework
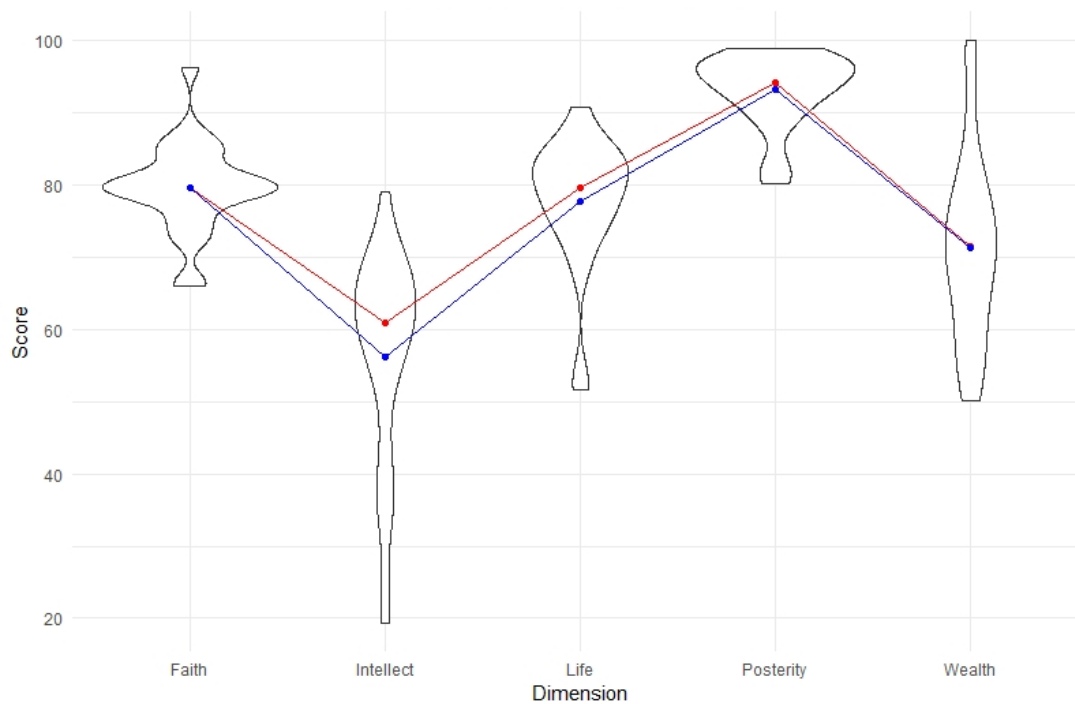

Figure 2. Interdimensional comparison of MSI

Note: The shape of the violin represents the quantity of country in that score point. Red-line and blue line respectively compare the mean value and median value among the dimensions.

Figure 3. Comparative distribution of HDI and MSI

Note: This figure illustrates the distribution of HDI and MSI scores across countries in the sample. The area of the violin represents the number of countries in the respective score. Red-line and blue lines respectively compare the mean and median values between HDI and MSI.
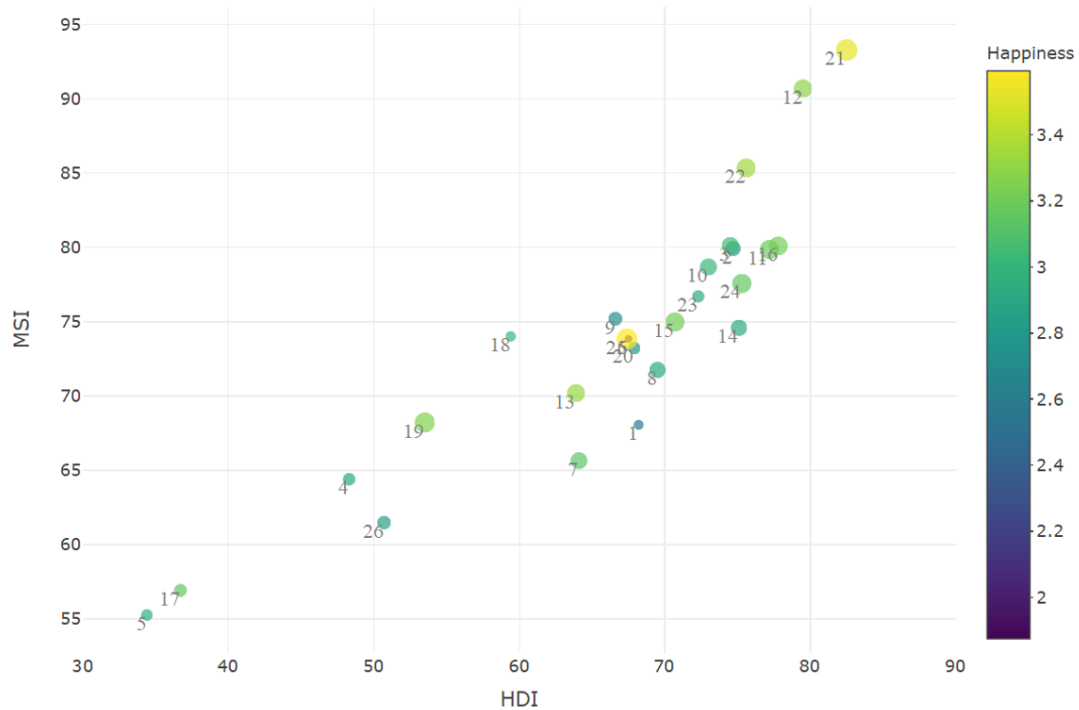
Figure 4. The scatter plot of MSI, HDI, happiness and life satisfaction

Note: Size of the circle shows the life satisfaction score. The bigger the circle, the highest the life satisfaction score is. Number in the bottom of the circle indicates the country following Table IV.
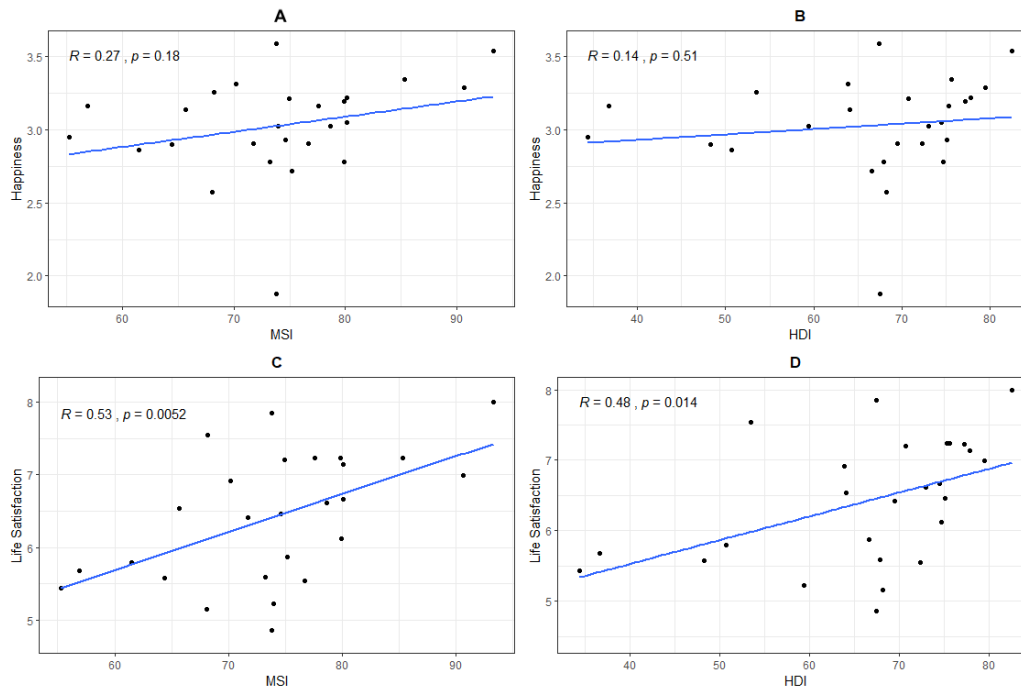
Figure 5. Correlation between HDI/MSI and happiness/life satisfaction

Note: The Pearson correlation (*R*) is presented along with the p-value (*p*).