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Translating Islamic Identity into Numbers

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Abstract--- This research aims to define various Islamic based identity profile to different individuals by identifying the various degrees of Islamic based identity profile. A scale of measurement in ordinal scale has been used to determine an Islamic based identity profile. The scale is subdivided into three main subsections, namely very rarely, average level and very frequently. By using the scale of measurement on an ordinal scale, it assists in developing a numerical hypothesis that is then used to determine an individual's Islamic based identity profile using the Dempster-Shafer theory of evidence. Using twentyfour set of questions, the research used the evidence presented to support a given Islamic based identity profile of a specific individual and filtered it using various degrees of probabilities of the evidence theory model, which have aided in proving or validating a particular hypothesis. The questions are divided into three types based on Islamic identity profile which include Fitrah, Khalifah and Din. The conclusion made is that we may be able to easily diagnose an individual's Islamic based identity profile using Dempster-Shafer theory of evidence.

Keywords---British Muslim women, community, environment, human nature, identity profile, Islamic identity, social actors, translating.

Introduction

In the religious system, Islamic identity is developed based on social actors, and the organizations of society. Brown studied the role of Islamic identity among British Muslim women. The strategy of Islamic identity is co-picked as a segment of alternative strategies to supervie diverse concerns, for instance, survival and welfare. The section is specifically designed to add weight to the overall profile being generated. It is more for the usage of the learner know more about the areas of their strengths and improvements (Al-Attas, 1976; Maseleno et al., 2019). Using twenty-four set of questions, the questions are divided into three types based on Islamic identity profile: Natural disposition (Fitrah), Vicegerent's obligations and responsibilities (Khalifah) and Lifestyle and God-human interrelationships (Din). The concept of Fitrah (natural disposition), Din (religion as a way of life) and Khalifah (status of vicegerent-ship) within this paper scope is based on the current working paper of Sabki and Hardaker (n.d.). They have highlighted on how these three aspects are prominent in the understanding the human nature, their inclination as well as own sense of being within their spiritual and temporal Islamic realm, which in turns relate to Islamic Anthropology. Davies highlighted how these three different aspects, other relevant aspects of Islam, including shariah (law) and minhaj (way of life), determines not only the outlook but also of their understanding of themselves and others and how the surrounding is impacting and is being impacted by them.

Method

Inception for the three components of Islamic based identity

Fitrah or natural disposition renders heavily on one's innate beliefs, which impacts their values and way of life as well as their interactions with others (Mohammed 1995). Within the Islamic understanding of this view, it is an instinctive awareness of their commitment towards God, based on the goals of beings, as God intended. Additionally, with this natural disposition, is the capacity to adhere in servitude of what is anticipated by God and the need to surrender to these dispositions. Sabki and Hardaker (n.d.) argued that, with awareness towards their fitrah, one may be able to foresee positive contribution, as purposeful beings, to their community and surroundings (Hardaker et al., 2017; Suroso et al., 2021).

As a propagator of the non-individualistic way of life, this relates heavily to the second component, which is khalifah or awareness of the responsibilities of becoming a vicegerent on earth. What this entails is the understanding that as part of human's submission towards God, is the responsibilities and tasks that are to be carried out and endured. From an Islamic perspective, this means that there are certain moral obligations, including amanah, or trust, for the betterment of humankind (Attas & Ashraf, 1979; Al-Mahdi, 2004; Brown, 2006). Al-Mahdi highlighted that there are three principal responsibilities of perfecting

themselves, their immediate community and environment, specifically, and the humankind and physical realm in general as an extension of these obligations. Most importantly, as the bearings of khalifah are not born independently, it highlights the ongoing relationship with God as the determiner of such moral obligations and tasks. In general, from learning and teaching point of views, the questions created for this aggregation highlights on the awareness of attempting one's best in learning and becoming a role model for others. It also focuses on learners' capacity to peer teach and learn, indirectly enhancing their learning experiences (Brown, 2006; Warren, 2019; Poppitt et al., 1996).

Last but not least, is the aspect of din, or has been defined as a way one conducts themselves from the social and cultural point of view, which is a direct consequence of one's relationship with God. The relationship bears immense implications, as a consequence of one's indebtedness, submission and tendency, that is highlighted to be implied within the understanding of the concept of the din (Castells, 2011; Davies, 1988; Shafer, 1976). These implications may be denoted through ibadah or worship, in general, or more specifically, as a way of life or minhaj that renders oneself through their devotion and submission towards God. Table 1 shows Islamic based identity profile with degree of belief.

Table 1 Islamic based identity profile with degree of belief

	Statement	Key concepts*	Fitrah/ Khalifah/ Din	Degree of Belief
1	I believe by remembering Allah (**God), my learning process will be enhanced. I see Prophet Muhammad	Innate reality/ natural disposition and awareness.	FITRAH {F}	0.9
2	(pbuh) as my role model and try to internalise his conducts in my attitude and approach to learning.	Responsibilities to perfect ourselves.	KHALIFAH {K}	0.8
3	I establish my learning schedule to accommodate my Islamic (religious) obligations.	Ibadah as ultimate submission to Allah (God).	DIN {D}	0.6
4	I am persistent in my studies despite its difficulties as it is constructive to my learning development.	A process of following divine will of God.	FITRAH {F}	0.5
5	Mentoring responsibility and peer learning benefits both mentor and protégé.	Responsibilities to perfect all human society.	KHALIFAH {K}	0.6
6	I am responsible while using and sharing educational institution's resources.	Responsibilities to perfect the physical realm. Natural	KHALIFAH {K	0.8
7	Part of my learning routine includes seeking God's forgiveness (istighfar).	disposition/intuitive ability.	FITRAH {F}	0.6
8	I balance and pay attention	Responsibilities to	KHALIFAH {K}	0.7

	to my physical, emotional	perfect ourselves.		
9	and spiritual needs. I am consistent and thorough in completing my learning activities.	Responsibilities to perfect ourselves.	KHALIFAH {K}	0.5
10	I often reflect on my spiritual awareness (awareness of my purpose as a creation).	Conscious of the necessary relationship between humankind and God.	FITRAH {F}	0.6
11	I reflect on the permissibility (<i>Halal</i>) and the purity (<i>Tayyiban</i>) of my food intake.	Observance of law as <i>minhaj</i> or way of life.	DIN {D}	0.8
12	I am consistent in undertaking Islamic (religious) learning, regardless my other education obligations.	Operational process out of humankind's continuing relationship with God.	Din {D}	0.6
13	I am motivated and have a positive outlook in all stages of my learning.	Instinctive surrender to the will of God/ natural disposition.	FITRAH {F}	0.7
14	I am mindful of my learning intentions before studying.	Make judgments with a natural inclination to submit to God. Operational	DIN {D}	0.8
15	I supplicate or pray before learning.	process out of humankind's continuing relationship with God.	DIN {D}	0.8
16	I continuously seek knowledge.	Natural disposition to seek and be aware of the purpose of creation as an evidence of God.	FITRAH {F}	0.6
17	I join community activities to support learning development and to assist others.	Responsibilities to perfect ourselves and community.	KHALIFAH {K}	0.5
18	I believe that positive outcomes are based on my best effort and Allah's (God's) blessings.	Instinctive recognition of God and the need to surrender to the	FITRAH {F}	0.7

19	My actions are aligned with my Islamic (religious) beliefs.	will of God. Natural tendency to obey laws / Operational process out of humanity's continuing relationship with God.	DIN {D}	0.5
20	I have Islamic (religious) moral responsibilities towards myself and my community.	Responsibilities to perfect ourselves and community.	KHALIFAH {K}	0.8
21	I regard learning activities as a form of worship and service to Allah (God).	Repaying our loan to God through "ibadah" and total submission.	DIN {D}	0.8
22	I believe having compassion for my parents, and close friends will consequently impact my learning development.	Relevance to one's beliefs, values and attitudes to life, worldview and interaction with the surrounding environment.	FITRAH {F}	0.6
23	I take responsibility to assist my family and friends in their learning experiences.	Responsibilities to perfect ourselves and community.	KHALIFAH {K}	0.7
24	In any learning condition, I allocate time for my prayers and supplications.	Repaying our loan to God through "ibadah" and total submission.	DIN {D}	0.8

Note:

- Key concepts are derived from Sabki, A & Hardaker, G (n.d), Working document for Fitrah, Khalifah and Din.
- The concept God to ascribe Allah is based on the work of Haleem, M. A. (2005), *The Qur'an: OUP Oxford.*

Dempster-shafer theory of evidence

The Dempster-Shafer theory, also referred to as evidential theory. The central idea of Dempster-Shafer theory is what is called as Dempster's rule of combination. This rule tells us how to combine beliefs (upper and lower probabilities) based on independent bodies of evidence (Dempster, 2008; Dempster, 1968). The mathematical theory of evidence uses two measures of uncertainty, belief and plausibility, expressed as Bel() and Pls() respectively. First of all, we must define a finite set called a frame of discernment, indicated by the sign Θ . A frame of discernment is a set of mutually exclusive and exhaustive hypotheses. The sign 2^{Θ} indicates the set composed of all the subset generated by the frame of

discernment. Any subset of Θ is also a hypothesis. For hypotheses set, a basic belief degree is denoted by m: 2^{Θ} (Pascual et al., 2017; Kostyra & Baryłko, 2006).

$$m\left(\emptyset\right) = 0\tag{1}$$

$$\sum_{A\subseteq\Theta} m(A) = 1 \tag{2}$$

Based on a mass distribution, a belief function (Bel), corresponding to the minimum uncertainty value about the hypothesis, is defined as the following:

$$Bel(A) = \sum_{A_i \subseteq A} m(A_i)$$
(3)

Bel (A) measures the total belief that the object is in A. A belief function assigns a measure of total belief to each subset of Θ . In comparison, m(A) is the belief assigned only to the set A.

A plausibility function (Pls), corresponding to the maximum uncertainty value, is defined as the following:

$$Pls(A) = \sum_{A_i \cap A \neq 0} m(A_i) \tag{4}$$

These two functions, which have sometimes been referred to as lower and upper probability functions, the relationship between the plausibility of a set A, and the belief of the complement of set A, A υ \bar{A} = The plausibility Pls (A) is defined as the degree to which the evidence fails to refute A.

$$Pls (A) = 1 - Bel (\bar{A})$$
 (5)

$$Pls(A) = 1 - \sum_{A_i \subseteq \bar{A}} m(A_i)$$
(6)

$$Bel (A) \le Pls (A) \tag{7}$$

Pls (A) measures the total belief that can move into A. The measures are related each other.

The mathematical theory of evidence provides a method to combine the previous measures of evidence of different sources. Theory of evidence assumes that these sources are independent. The combination is defined according to the Dempster's rule of combination (Shafer, 1976): $m = m1 \oplus m2$, also called orthogonal sum

$$(m_1 \oplus m_2)(\emptyset) = 0 \tag{8}$$

$$m_1 \oplus m_2(A) = \frac{1}{1 - R} \sum_{A_i \cap A_j = A} m_1(A_i) m_2(A_j)$$
 (9)

Where

$$R = \sum_{A_i \cap A_j = \emptyset} m_1(A_i) m_2(A_j)$$
(10)

$$m(A), m_1(A_i), m_2(A_i) \to [0,1], A \neq \emptyset$$
 (11)

 \emptyset is the sign of an empty set. The function m is called the degree of belief, m (A) denotes membership degree of A to Θ . The mathematical theory of evidence combines two independent sets of mass assignments.

Implementation

- I believe by remembering Allah (*God), my learning process will be enhanced. In this 1st statement which represented Fitrah, student filling in the statement with 9, it means the degree of belief m_1 {F} = 0.9, m_1 { θ } = 1 0.9 = 0.1.
- I see Prophet Muhammad (pbuh) as my role model and try to internalise his conducts in my attitude and approach to learning m_2 {K} = 0.8. In this 2^{nd} statement which represented Khalifah, student filling in the statement with 8, it means the degree of belief m_2 {K} = 0.8, m_2 { θ } = 1 0.8 = 0.2. Combination for Islamic identity statement 1 and 2 are tabulated in Table 2.

Table 2 Combining Islamic identity statement 1 and 2

		{K}	0.8	{θ}	0.2
{F}	0.9	{Ø}	0.72	{F}	0.18
{ θ}	0.1	{K}	0.08	$\{\Theta\}$	0.02

From Table 2 we calculate Islamic identity statement 1 and 2 to yield degree of belief m_3 by a combination rule as follows.

$$m_3$$
 {F} = 0.18/1-0.72 = 0.64, m_3 {K} = 0.08/1-0.72 = 0.29, m_3 { θ } = 0.02/1-0.72 = 0.07

I establish my learning schedule to accommodate my Islamic (religious) obligations. In this 3^{rd} statement which represented Din, student filling in the statement with 6, it means the degree of belief m_4 {D} = 0.6, m_4 { θ } = 1 - 0.6 = 0.4. Combination for Islamic identity statement 2 and 3 are tabulated in Table 3.

Table 3
Combining Islamic identity statement 2 and 3

		{D}	0.6	{θ}	0.4
{F}	0.64	{Ø}	0.384	{F}	0.256
{K}	0.29	$\{\emptyset\}$	0.174	{K}	0.116
$\{\Theta\}$	0.07	$\{D\}$	0.042	$\{\Theta\}$	0.028

From Table 3 we calculate Islamic identity statement 2 and 3 to yield degree of belief m_5 by a combination rule as follows.

$$\begin{array}{l} m_5\left\{F\right\} = 0.256/1 - 0.384 + 0.174 = 0.580, \, m_5\left\{K\right\} = 0.116/1 - 0.384 + 0.174 = 0.262, \\ m_5\left\{D\right\} = 0.042/1 - 0.384 + 0.174 = 0.095, \, m_5\left\{\theta\right\} = 0.028/1 - 0.384 + 0.174 = 0.063 \end{array}$$

I am persistent in my studies despite its difficulties as it is constructive to my learning development. In this 4^{th} statement which represented Fitrah, student filling in the Islamic identity statement with 5, it means the degree of belief m_6 {F} = 0.5, m_6 { θ } = 1 - 0.5 = 0.5. Combination for Islamic identity statement 3 and 4 are tabulated in Table 4.

Table 4
Combining Islamic identity statement 3 and 4

		{F}	0.5	{θ}	0.5
{F}	0.580	{F}	0.29	{F}	0.29
{K}	0.262	$\{\emptyset\}$	0.131	{K}	0.131
{D}	0.095	$\{\emptyset\}$	0.047	{D}	0.047
{θ}	0.063	{F}	0.031	{θ}	0.031

From Table 4 we calculate Islamic identity statement 3 and 4 to yield degree of belief m_7 by a combination rule as follows.

$$m_7$$
 {F} = 0.29+0.29+0.031/1-(0.131+0.047) = 0.743, m_7 {K} = 0.131/1-(0.131+0.047) = 0.159,

$$m_7 \{D\} = 0.047/1 - (0.131 + 0.047) = 0.060, m_7 \{\theta\} = 0.031/1 - (0.131 + 0.047) = 0.038$$

Mentoring responsibility and peer learning benefits both mentor and protégé. In this 5^{th} statement which represented Khalifah, student filling in the Islamic identity statement with 6, it means the degree of belief m_8 {K} = 0.6, m_8 { θ } = 1-0.6 = 0.4. Combination for Islamic identity statement 4 and 5 are tabulated in Table 5.

Table 5
Combining Islamic identity statement 4 and 5

		{K}	0.6	{θ}	0.4
{F}	0.743	{Ø}	0.446	{F}	0.297
{K}	0.159	{K}	0.095	{K}	0.064
{D}	0.060	$\{\emptyset\}$	0.036	{D}	0.024
{ θ}	0.038	{K}	0.023	$\{\Theta\}$	0.015

From Table 5 we calculate Islamic identity statement 4 and 5 to yield degree of belief m_9 by a combination rule as follows.

 m_9 {F} = 0.297/1-(0.446+0.036) = 0.573, m_9 {K} = 0.095+0.064+0.023/1-(0.446+0.036) = 0.351,

 m_9 {D} = 0.024/1-(0.446+0.036) = 0.046, m_9 { θ } = 0.015/1-(0.446+0.036) = 0.030

I am responsible while using and sharing educational institution's resources. In this 6^{th} statement which presented Khalifah, student filling in the Islamic identity statement with 8, it means the degree of belief m_{10} {K} = 0.8, m_{10} { θ } = 1 - 0.8 = 0.2. Combination for Islamic identity statement 5 and 6 are tabulated in Table 6.

Table 6 Combining Islamic identity statement 5 and 6

		{K}	0.8	{θ}	0.2
{F}	0.573	{Ø}	0.458	{F}	0.115
{K}	0.351	{K}	0.281	{K}	0.070
$\{D\}$	0.046	$\{\emptyset\}$	0.037	$\{D\}$	0.009
_{θ}	0.030	{K}	0.024	$\{\Theta\}$	0.006

From Table 6 we calculate Islamic identity statement 5 and 6 to yield degree of belief m_{11} by a combination rule as follows.

 m_{11} {F} = 0.115/1-(0.458+0.037) = 0.228, m_{11} {K} = 0.281+0.070+0.024/1-(0.458+0.037) = 0.742,

 m_{11} {D} = 0.009/1-(0.458+0.037) = 0.018, m_{11} { θ } = 0.006/1-(0.458+0.037) = 0.012

Part of my learning routine includes seeking forgiveness (istighfar). In this 7th statement which represented Fitrah, student filling in the Islamic identity statement with 6, it means the degree of belief m_{12} {F} = 0.6, m_{12} { θ } = 1 - 0.6 = 0.4. Combination for Islamic identity statement 6 and 7 are tabulated in Table 7.

Table 7
Combining Islamic identity statement 6 and 7

		{F}	0.6	{θ}	0.4
{F}	0.228	{F}	0.137	{F}	0.091
$\{K\}$	0.742	$\{OOM}$	0.445	{K}	0.297
$\{D\}$	0.018	$\{\emptyset\}$	0.011	{D}	0.007
$\{\Theta\}$	0.012	{ F }	0.007	$\{\Theta\}$	0.005

From Table 7 we calculate Islamic identity statement 6 and 7 to yield degree of belief m_{13} by a combination rule as follows.

 m_{13} {F} = 0.137+0.091+0.007/1-(0.445+0.011) = 0.432, m_{13} {K} = 0.297/1-(0.445+0.011) = 0.546,

 m_{13} {D} = 0.007/1-(0.445+0.011) = 0.013, m_{13} { θ } = 0.005/1-(0.445+0.011) = 0.009

I balance and pay attention to my physical, emotional and spiritual needs. In this 8^{th} statement which represented Khalifah, student filling in the Islamic identity statement with 7, it means the degree of belief m_{14} {K} = 0.7, m_{14} { θ } = 1 - 0.7 = 0.3. Combination for Islamic identity statement 7 and 8 are tabulated in Table 8.

Table 8
Combining Islamic identity statement 7 and 8

		{K}	0.7	{θ}	0.3
{F}	0.432	{Ø}	0.302	{F}	0.130
{K}	0.546	{K}	0.382	{K}	0.164
$\{D\}$	0.013	$\{\emptyset\}$	0.009	$\{D\}$	0.004
$\{\Theta\}$	0.009	{K}	0.006	$\{\Theta\}$	0.003

From Table 8 we calculate Islamic identity statement 7 and 8 to yield degree of belief m_{15} by a combination rule as follows.

 m_{15} {F} = 0.130/1 - (0.302+0.009) = 0.189, m_{15} {K} = 0.382+0.164+0.006/1 - (0.302+0.009) = 0.801,

 m_{15} {D} = 0.004/1 - (0.302+0.009) = 0.006, m_{15} { θ } = 0.003/1 - (0.302+0.009) = 0.004

I am consistent and thorough in completing my learning activities. In this 9th statement which represented Khalifah, student filling in the Islamic identity statement with 5, it means the degree of belief m_{16} {K} = 0.5, m_{16} { θ } = 1 - 0.5 = 0.5. Combination for Islamic identity statement 8 and 9 are tabulated in Table 9.

Table 9
Combining Islamic identity statement 8 and 9

		{K}	0.5	{θ}	0.5
{F}	0.189	{Ø}	0.094	{F}	0.094
{ K }	0.801	{K}	0.4	{K}	0.4
{D}	0.006	{Ø}	0.003	$\{D\}$	0.003
{θ}	0.004	{K}	0.002	{θ}	0.002

From Table 9 we calculate Islamic identity statement 8 and 9 to yield degree of belief m_{17} by a combination rule as follows.

 m_{17} {F} = 0.094/1 - (0.094+0.003) = 0.104, m_{17} {K} = 0.4+0.4+0.002/1 - (0.094+0.003) = 0.891,

 m_{17} {D} = 0.003/1 - (0.094+0.003) = 0.003, m_{17} { θ } = 0.002/1 - (0.094+0.003) = 0.002

I often reflect on my spiritual awareness (awareness of my purpose as a creation). In this $10^{\rm th}$ statement which represented Fitrah, student filling in the Islamic identity statement with 6, it means the degree of belief m_{18} {F} = 0.6, m_{18} { θ } = 1 - 0.6 = 0.4. Combination for Islamic identity statement 9 and 10 are tabulated in Table 10.

Table 10 Combining Islamic identity statement 9 and 10

		{F}	0.6	{θ}	0.4
{F}	0.104	{F}	0.062	{F}	0.042
{K}	0.891	{Ø}	0.535	$\{K\}$	0.356
{D}	0.003	{Ø}	0.002	$\{D\}$	0.001
{θ}	0.002	{F}	0.001	{θ}	0.001

From Table 10 we calculate Islamic identity statement 9 and 10 to yield degree of belief m_{19} by a combination rule as follows.

 m_{19} {F} = 0.062+0.042+0.001/1 - (0.535+0.002) = 0.227, m_{19} {K} = 0.356/1 - (0.535+0.002) = 0.769,

 m_{19} {D} = 0.001/1 - (0.535+0.002) = 0.002, m_{19} { θ } = 0.001/1 - (0.535+0.002) = 0.002

I reflect on the permissibility (*Halal*) and the purity (*Tayyiban*) of my food intake. In this 11^{th} statement which represented Din, student filling in the Islamic identity statement with 8, it means the degree of belief m_{20} {D} = 0.8, m_{20} { θ } = 1 - 0.8 = 0.2. Combination for Islamic identity statement 10 and 11 are tabulated in Table 11.

Table 11 Combining Islamic identity statement 10 and 11

		{D}	0.8	{θ}	0.2
{F}	0.227	{Ø}	0.182	{F}	0.045
{K}	0.769	$\{\emptyset\}$	0.615	$\{K\}$	0.153
{D}	0.002	$\{D\}$	0.002	{D}	0.0004
$\{\Theta\}$	0.002	{D}	0.002	$\{\Theta\}$	0.0004

From Table 11 we calculate Islamic identity statement 10 and 11 to yield degree of belief m_{21} by a combination rule as follows.

 m_{21} {F} = 0.045/1 - (0.182+0.615) = 0.222, m_{21} {K} = 0.153/1 - (0.182+0.615) = 0.754,

 m_{21} {D} = 0.002+0.0004+0.002/1 - (0.182+0.615) = 0.022, m_{21} {0}=0.0004/1-(0.182+0.615)=0.002

I am consistent in undertaking Islamic (religious) learning, regardless my other education obligations. In this 12^{th} statement which represented Din, student filling in the Islamic identity statement with 6, it means the degree of belief m_{22} {D} = 0.6, m_{22} { θ } = 1 - 0.6 = 0.4. Combination for Islamic identity statement 11 and 12 are tabulated in Table 12.

Table 12 Combining Islamic identity statement 11 and 12

		{D}	0.6	{θ}	0.4
{F}	0.222	{Ø}	0.133	{F}	0.089
{K}	0.754	{Ø}	0.452	$\{K\}$	0.302
{D}	0.022	{D}	0.013	$\{D\}$	0.009

{θ}	0.002	{D}	0.001	{θ}	0.001

From Table 12 we calculate Islamic identity statement 11 and 12 to yield degree of belief m_{23} by a combination rule as follows.

 m_{23} {F} = 0.089/1 - (0.133+0.452) = 0.215, m_{23} {K} = 0.302/1 - (0.133+0.452) = 0.728.

 m_{23} {D} = 0.013+0.009+0.001/1 - (0.133+0.452) = 0.055, m_{23} { Θ }=0.001/1-(0.133+0.452)=0.002

I am consistent in undertaking Islamic (religious) learning, regardless my other education obligations. In this 13^{th} statement which represented Fitrah, student filling in the Islamic identity statement with 7, it means the degree of belief m_{24} {F} = 0.7, m_{24} { θ } = 1 - 0.7 = 0.3. Combination for Islamic identity statement 12 and 13 are tabulated in Table 13.

Table 13
Combining Islamic identity statement 12 and 13

		{F}	0.7	{θ}	0.3
{F}	0.215	{F}	0.151	{F}	0.065
{K}	0.728	{Ø}	0.510	{K}	0.218
$\{D\}$	0.055	{Ø}	0.038	{D}	0.016
$\{\Theta\}$	0.002	{F}	0.001	$\{\Theta\}$	0.001

From Table 13 we calculate Islamic identity statement 12 and 13 to yield degree of belief m_{25} by a combination rule as follows.

 $m_{25} \{F\} = 0.151 + 0.065 + 0.001/1 - (0.510 + 0.038) = 0.481,$

 m_{25} {K} = 0.218/1 - (0.510+0.038) = 0.482, m_{25} {D} = 0.016/1 - (0.510+0.038) = 0.035,

 $m_{25}\{\theta\}=0.001/1-(0.510+0.038)=0.002$

I am mindful of my learning intentions before studying. In this 14^{th} statement which represented Din, student filling in the Islamic identity statement with 8, it means the degree of belief m_{26} {D} = 0.8, m_{26} { θ } = 1 - 0.8 = 0.2. Combination for Islamic identity statement 13 and 14 are tabulated in Table 14.

Table 14
Combining Islamic identity statement 13 and 14

		{D}	0.8	{θ}	0.2
{F}	0.481	{Ø}	0.385	{F}	0.096
$\{K\}$	0.482	$\{\emptyset\}$	0.386	{K}	0.096
$\{D\}$	0.035	{D}	0.028	{D}	0.007
{θ}	0.002	{D}	0.002	{θ}	0.0004

From Table 14 we calculate Islamic identity statement 13 and 14 to yield degree of belief m_{27} by a combination rule as follows.

 m_{27} {F} = 0.096/1 - (0.385+0.386) = 0.419, m_{27} {K} = 0.096/1 - (0.385+0.386) = 0.419,

 $m_{27} \{D\} = 0.028 + 0.007 + 0.002 / 1 - (0.385 + 0.386) = 0.161,$

 $m_{27} \{\theta\} = 0.0004/1 - (0.385 + 0.386) = 0.001$

I supplicate or pray before learning. In this 15^{th} statement which is represented Din, student filling in the Islamic identity statement with 8, it means the degree of belief m_{28} {D} = 0.8, m_{28} { θ } = 1 - 0.8 = 0.2. Combination for Islamic identity statement 14 and 15 are tabulated in Table 15.

Table 15
Combining Islamic identity statement 14 and 15

		{D}	0.8	{θ}	0.2
{F}	0.419	{Ø}	0.335	{F}	0.084
{K}	0.419	$\{\emptyset\}$	0.335	{K}	0.084
$\{D\}$	0.161	$\{D\}$	0.129	$\{D\}$	0.032
{θ}	0.001	$\{D\}$	0.001	{θ}	0.0002

From Table 15 we calculate Islamic identity statement 14 and 15 to yield degree of belief m_{29} by a combination rule as follows.

 m_{29} {F} = 0.084/1 - (0.335+0.335) = 0.254, m_{29} {K} = 0.084/1 - (0.335+0.335) = 0.254,

 m_{29} {D} = 0.129+0.032+0.001/1 - (0.335+0.335) = 0.491, m_{29} { θ }=0.0002/1-(0.335+0.335)=0.001

I continuously seek knowledge. In this 16^{th} statement, student filling in the Islamic identity statement with 6 which represented Fitrah, it means the degree of belief m_{30} {F} = 0.6, m_{30} { θ } = 1 - 0.6 = 0.4. Combination for Islamic identity statement 15 and 16 are tabulated in Table 16.

Table 16
Combining Islamic identity statement 15 and 16

		{F}	0.6	{θ}	0.4
{F}	0.254	{F}	0.152	{F}	0.102
{K}	0.254	$\{\emptyset\}$	0.152	{K}	0.102
{D}	0.491	$\{\emptyset\}$	0.295	$\{D\}$	0.196
{θ}	0.001	{F}	0.001	{θ}	0.0004

From Table 16 we calculate Islamic identity statement 15 and 16 to yield degree of belief m_{31} by a combination rule as follows.

$$m_{31}$$
 {F} = 0.152+0.102+0.001/1 - (0.152+0.295) = 0.461, m_{31} {K} = 0.102/1 - (0.152+0.295) = 0.184,

$$m_{31}$$
 {D} = 0.196/1 - (0.152+0.295) = 0.354, m_{31} {0} = 0.0004/1 - (0.152+0.295) = 0.001

I join community activities to support learning development and to assist others. In this 17^{th} statement which represented Khalifah, student filling in the Islamic identity statement with 5, it means the degree of belief m_{32} {K} = 0.5, m_{32} { θ } = 1 - 0.5 = 0.5. Combination for Islamic identity statement 16 and 17 are tabulated in Table 17.

Table 17
Combining Islamic identity statement 16 and 17

		{K}	0.5	{θ}	0.5
{F}	0.461	{Ø}	0.230	{F}	0.230
{K}	0.184	{K}	0.092	{K}	0.092
$\{D\}$	0.354	{Ø}	0.177	$\{D\}$	0.177
$\{\Theta\}$	0.001	{K}	0.001	$\{\Theta\}$	0.001

From Table 17 we calculate Islamic identity statement 16 and 17 to yield degree of belief m_{33} by a combination rule as follows.

 m_{33} {F} = 0.231/1 - (0.230+0.177) = 0.389, m_{33} {K} = 0.092+0.092+0.001/1 - (0.231+0.177) = 0.312,

 m_{33} {D} = 0.177/1 - (0.231+0.177) = 0.298, m_{33} { θ } = 0.001/1 - (0.231+0.177) = 0.001

I believe that positive outcomes are based on my best effort and Allah's (God's) blessings. In this 18^{th} statement which represented Fitrah, student filling in the Islamic identity statement with 7, it means the degree of belief m_{34} {F} = 0.7, m_{34} { θ } = 1 - 0.7 = 0.3. Combination for Islamic identity statement 17 and 18 are tabulated in Table 18.

Table 18
Combining Islamic identity statement 17 and 18

		{F}	0.7	{θ}	0.3
{F}	0.389	{F}	0.272	{F}	0.117
{K}	0.312	$\{\emptyset\}$	0.218	{K}	0.094
$\{D\}$	0.298	$\{\emptyset\}$	0.209	$\{D\}$	0.089
{θ}	0.001	{F}	0.001	{θ}	0.0003

From Table 18 we calculate Islamic identity statement 17 and 18 to yield degree of belief m_{35} by a combination rule as follows.

 $m_{35}~\{F\}=0.272\pm0.117\pm0.001/1$ - $(0.218\pm0.209)=0.680,~m_{35}~\{K\}=0.094/1$ - $(0.218\pm0.209)=0.164,$

 m_{35} {D} = 0.089/1 - (0.218+0.209) = 0.155, m_{35} { θ } = 0.0003/1 - (0.218+0.209) = 0.001

My actions are aligned with my Islamic (religious) beliefs. In this 19th statement which represented Din, student filling in the Islamic identity statement with 5, it means the degree of belief m_{36} {D} = 0.5, m_{36} { θ } = 1 - 0.5 = 0.5. Combination for Islamic identity statement 18 and 19 are tabulated in Table 19.

Table 19
Combining Islamic identity statement 18 and 19

		{D}	0.5	{θ}	0.5
{F}	0.680	{Ø}	0.340	{F}	0.340
{K}	0.164	{Ø}	0.082	$\{K\}$	0.082

{D}	0.155	{D}	0.077	{D}	0.077
{θ}	0.001	$\{D\}$	0.001	{θ}	0.001

From Table 19 we calculate Islamic identity statement 18 a nd 19 to yield degree of belief m_{37} by a combination rule as follows.

 m_{37} {F} = 0.340 /1 - (0.340+0.082) = 0.588, m_{37} {K} = 0.082/1 - (0.340+0.082) = 0.142,

 m_{37} {D} = 0.077+0.077+0.001/1 - (0.340+0.082) = 0.268, m_{37} { θ } = 0.001/1 - (0.340+0.082) = 0.002

I have Islamic (religious) moral responsibilities towards myself and my community. In this 20^{th} statement which represented Khalifah, student filling in the Islamic identity statement with 8, it means the degree of belief m_{38} {K} = 0.8, m_{38} { θ } = 1 - 0.8 = 0.2. Combination for Islamic identity statement 19 and 20 are tabulated in Table 20.

Table 20 Combining Islamic identity statement 19 and 20

		{K}	0.8	{θ}	0.2
{F}	0.588	{Ø}	0.470	{F}	0.118
{K}	0.142	{K}	0.114	{ K }	0.028
{D}	0.268	{Ø}	0.214	$\{D\}$	0.054
$\{\Theta\}$	0.002	{K}	0.002	$\{\Theta\}$	0.0004

From Table 20 we calculate Islamic identity statement 19 and 20 to yield degree of belief m_{39} by a combination rule as follows.

 $m_{39} \{F\} = 0.118 / 1 - (0.470 + 0.214) = 0.373,$

 $m_{39} \{K\} = 0.114 + 0.028 + 0.002 / 1 - (0.470 + 0.214) = 0.456,$

 m_{39} {D} = 0.054/1 - (0.470+0.214) = 0.170, m_{39} { θ } = 0.0004/1 - (0.470+0.214) = 0.001

I regard learning activities as a form of worship and service to Allah (God). In this 21^{st} statement which is represented Din, student filling in the Islamic identity statement with 8, it means the degree of belief m_{40} {D} = 0.8, m_{40} { θ } = 1 - 0.8 = 0.2. Combination for Islamic identity statement 20 and 21 are tabulated in Table 21.

Table 21 Combining Islamic identity statement 20 and 21

		{D}	0.8	{θ}	0.2
{F}	0.373	{Ø}	0.298	{F}	0.075
{K}	0.456	{Ø}	0.365	{ K }	0.091
$\{D\}$	0.170	{D}	0.136	$\{D\}$	0.034
{θ}	0.001	{D}	0.001	$\{\Theta\}$	0.0002

From Table 21 we calculate Islamic identity statement 20 and 21 to yield degree of belief m_{41} by a combination rule as follows.

 m_{41} {F} = 0.075 /1 - (0.298+0.365) = 0.222, m_{41} {K} = 0.091/1 - (0.298+0.365) = 0.270,

 m_{41} {D} = 0.136+0.034+0.001/1 - (0.298+0.365) = 0.507, m_{41} { Θ }=0.0002/1-(0.298+0.365)=0.001

I believe having compassion for my parents, and close friends will consequently impact my learning development. In this 22^{nd} statement which represented Fitrah, student filling in the Islamic identity statement with 6, it means the degree of belief m_{42} {F} = 0.6, m_{42} { θ } = 1 - 0.6 = 0.4. Combination for Islamic identity statement 21 and 22 are tabulated in Table 22.

Table 22 Combining Islamic identity statement 21 and 22

		$\{D\}$	0.6	$\{\Theta\}$	0.4
{ F }	0.222	$\{OOM}$	0.133	{F}	0.089
{K}	0.270	{Ø}	0.162	{K}	0.108
{D}	0.507	{D}	0.304	{D}	0.203
{θ}	0.001	{D}	0.001	{θ}	0.0004

From Table 22 we calculate Islamic identity statement 21 and 22 to yield degree of belief m₄₃ by a combination rule as follows.

 m_{43} {F} = 0.089/1 - (0.133+0.162) = 0.126, m_{43} {K} = 0.108/1 - (0.133+0.162) = 0.153,

 $m_{43} \{D\} = 0.304 + 0.203 + 0.001/1 - (0.133 + 0.162) = 0.720,$ $m_{43} \{\theta\} = 0.0004/1 - (0.133 + 0.162) = 0.001$

I take responsibility to assist my family and friends in their learning experiences. In this 23^{rd} statement which represented Khalifah, student filling in the Islamic identity statement with 7, it means the degree of belief m_{44} {K} = 0.7, m_{44} { θ } = 1 - 0.7 = 0.3. Combination for Islamic identity statement 22 and 23 are tabulated in Table 23.

Table 23 Combining Islamic identity statement 22 and 23

		{K}	0.7	{θ}	0.3
{F}	0.126	{Ø}	0.088	{F}	0.038
{K}	0.153	{K}	0.107	{K}	0.046
$\{D\}$	0.720	$\{\emptyset\}$	0.504	$\{D\}$	0.216
{Θ}	0.001	{K}	0.001	$\{\Theta\}$	0.0003

From Table 23 we calculate Islamic identity statement 22 and 23 to yield degree of belief m_{45} by a combination rule as follows.

 $m_{45}~\{F\}=0.038/1$ - $(0.088+0.504)=0.093,~m_{45}~\{K\}=0.107+0.046+0.001/1$ - (0.088+0.504)=0.377,

 m_{45} {D} = 0.216/1 - (0.088+0.504) = 0.529, m_{45} { θ } = 0.0003/1 - (0.088+0.504) = 0.001

In any learning condition, I allocate time for my prayers and supplications. In this 24^{th} statement which represented Din, student filling in the Islamic identity statement with 8, it means the degree of belief m_{46} {D} = 0.8, m_{46} { θ } = 1 - 0.8 = 0.2. Combination for Islamic identity statement 23 and 24 are tabulated in Table 24.

Table 24
Combining Islamic identity statement 23 and 24

		{D}	0.8	{θ}	0.2
{F}	0.093	{Ø}	0.074	{F}	0.019
{K}	0.377	{Ø}	0.302	{ K }	0.075
{D}	0.529	{D}	0.423	$\{D\}$	0.106
{θ}	0.001	{K}	0.001	{θ}	0.0002

Finally, from Table 24 we calculate Islamic identity statement 23 and 24 to yield degree of belief m₄₇ by a combination rule as follows.

 m_{47} {F} = 0.019/1 - (0.074+0.302) = 0.030, m_{47} {K} = 0.075/1 - (0.074+0.302) = 0.120.

 m_{47} {D} = 0.423+0.106+0.001/1 - (0.074+0.302) = 0.850, m_{47} { θ } = 0.0002/1 - (0.074+0.302) = 0.0003

From the last calculation we get the final ranking of degree of belief is 0.85 > 0.120 > 0.030. The final ranking is Din > Khalifah > Fitrah. Islamic based identity profile is a Din.

Discussion

Table 25 provides Islamic based identity profile rank based on the mathematical theory of evidence calculations, derived from the scale of measurement in an ordinal scale (Skovdal et al., 2009; Bernard et al., 2014; Ritonga et al., 2021). The final ranking shows Fitrah < Khalifah < Din. The table shows detailed Islamic identity rank information on each statement, where the three components of Islamic based identity profile are ranked based on student preferential degrees of either very rarely, average level or very frequently [12] in the scale of measurement in ordinal scale and the probability of preference obtained based on the Dempster-Shafer theory of evidence calculations. This comparison is then done graphically by plotting a graph of the twenty-four set of questions versus the student's various preferential degree levels.

Table 25 Islamic based identity profile rank

No	Fitrah		Khalifah		Din
1	Fitrah	>	null	=	null
2	Fitrah	>	Khalifah	>	null
3	Fitrah	>	Khalifah	>	Din
4	Fitrah	>	Khalifah	>	Din
5	Fitrah	>	Khalifah	>	Din
6	Fitrah	<	Khalifah	>	Din

```
7
     Fitrah
                 Khalifah
                                Din
8
     Fitrah
                 Khalifah
                               Din
9
                 Khalifah
                                Din
     Fitrah
10
     Fitrah
                 Khalifah
                                Din
11
              < Khalifah
                                Din
     Fitrah
                             >
12
     Fitrah
                 Khalifah
                                Din
13
     Fitrah
                 Khalifah
                                Din
14
     Fitrah
                 Khalifah
                                Din
15
     Fitrah
                 Khalifah
                               Din
                             <
16
     Fitrah
                 Khalifah
                             <
                               Din
17
     Fitrah
                 Khalifah
                                Din
18
     Fitrah
                 Khalifah
                                Din
19
     Fitrah
                 Khalifah
                             < Din
20
     Fitrah
                 Khalifah
                                Din
21
     Fitrah
                 Khalifah
                             <
                                Din
22
     Fitrah
                 Khalifah
                             < Din
23
     Fitrah
                 Khalifah
                             <
                               Din
24
     Fitrah
                 Khalifah
                             < Din
```

Figure 1 shows the degree of belief progress during the test. From the 24th calculation, we get Fitrah 3%, Khalifah 12%, and Din 85%. *Natural disposition (Fitrah)* represents human nature that is inclined to certain belief and the concept of God's omniscience. As a consequence, it relates to the person being mindful or conscious of their emotional, cognitive and spiritual activities (Doran, 2002; Rinne et al., 2000). *Vicegerent's obligations and responsibilities (Khalifah)* involve human's trusteeship as God's vicegerent on earth, and this is the dimension of defining human status and rights. *God-human interrelationships (Din)* is the concept of how a person's belief dictates their way of life and this we see as the dimension of an operational process. These are a mutually defining set of concepts in pursuit of the holistic study of humans and their interactions in the physical and spiritual realm.

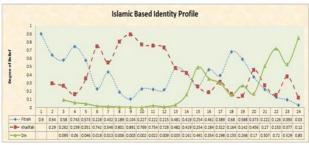


Figure 1. Degree of belief progress during the test

In relation to learning, the questions designed highlight learning activities as an 'ibadah'. Among others, this research focuses on the conception of good work ethics and striving for excellence in all areas, including learning. It also highlights the importance of intention and embodiment of spiritually oriented conducts as part of the learning process (Koroh et al., 2017; Suastini, 2016).

Conclusion

Fitrah, din and khalifah have been set as part of the Islamic based identity profile within the assessment as a unique component for the learner aggregation profile. It is the designers' intention that it may also be a mean to raise learners' awareness of their inclination and current role, not only as learners in a conventional way but how they may be able to foresee its link as a way of life and means of fulfilling their obligations towards God. Additionally, as learning does not happen in a vacuum and entails human interaction with each other and the environment, it is only natural to incorporate the aspects of 'fitrah', 'din' and 'khalifah' in the system aggregation. The Dempster-Shafer theory of evidence provides the method used to measure the pieces of evidence and combine the belief of different pieces of evidence that can handle a wide variety of data imperfections. This theory is mainly based on the notion that in practical situations, we are obliged to develop our reasoning based on facts that have to be supported using concrete evidence and in this Islamic based identity profile, the evidence is numerical. The theory heavily employs the mathematical topic on probability to help come up with various decisions trees as the necessary evidence required to prove a given reasoning or fact. This research tries to use mathematical inferences to help come up with a concrete reasoning on reality.

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