

A Study on Religious Practices in Islam towards Sustainable Development Using Neutrosophic Relational Maps

A.VictorDevadoss, M. Syed Ismail

Department of Mathematics, Loyola College Chennai

Email: msismail72@gmail.com

Abstract - In Islam, practice is of greater importance than doctrine and the five pillars represent the frame work for responsible and good life. In this paper we analyze the effect of five pillars of Islam towards sustainable development using Neutrosophic Relational maps, which is an extension of Fuzzy Relational maps. This paper organized as follows; section one gives the introduction about the NRM and five pillars of Islam. Section two derives basic notions and definitions of NRM. Adaptation to the problem in section three and conclusion and suggestion is derived in the final section.

Keywords: Five pillars of Islam, FRM, NRM and hidden pattern

I. INTRODUCTION

The new notation called Neutrosophic Relational Maps (NRMs) was introduced by Dr. W.B. Vasantha and SmarandacheFlorentin in the year 2004 [3]. In NRMs, we divide the very casual associations into two disjoint units, like for example the relation; between teacher and a student or relation; between and employee and employer or a relation; between the parent and the child in the case of school dropouts and so on. In this situation we see that we can bring out the causal relations existing between and employee and employer or parent and child and so on.

In this paper, we analyzed the five pillars of Islam towards Sustainable development. The five pillars are

1. The declaration of faith - the shahada: "There is no god but God, and Muhammad is the messenger of God." One becomes a Muslim by formally making this declaration, which represents the belief that the purpose of life is to serve and obey the one God, and that it is achieved through the teachings and practices of Prophet Muhammad.
2. Prayer (salat). Muslims are to perform formal prayers five times a day, involving verses in Arabic from the Koran, thus structuring their lives around God. Congregational prayer is traditionally on Friday. Personal prayers are offered at any time.
3. Almsgiving (zakat). A principle of Islam is that everything belongs to God, and wealth is held by people in trust. Muslims also have a responsibility to care for the less fortunate. The zakat calls for annual giving of 2.5 percent of a Muslim's capital, calculated by the individual
4. Fasting during Ramadan. *Ramadan* is the ninth month of the Islamic calendar; Muslims worldwide observe this as a month of fasting. This annual observance is regarded as one of the Five Pillars of Islam. The month lasts 29–30 days based on the visual sightings of the crescent moon, according to numerous

biographical accounts compiled in hadiths (Words of Prophet). The word Ramadan comes from the Arabic root *ramida* or *ar-ramad*, which means scorching heat or dryness.

Fasting is wajib (obligatory) for adult Muslims, except those who are ill, travelling or going through menstrual bleeding while fasting from dawn until sunset Muslims refrain from consuming food, drinking liquids, smoking and sexual relations; and in some interpretations from swearing. According to Islam, the *sawab* (rewards) of fasting are many, but in this month they are believed to be multiplied. Fasting for Muslims during Ramadan typically includes the increased offering of *salat* (prayers) and recitation of the Quran.

5. Pilgrimage (the hajj). The pilgrimage to Mecca is a once-in-a-lifetime obligation for every Muslim able to do so. During 10 days of rites, pilgrims from around the world don simple garments to remove distinctions of class and culture, showing that all stand equal before God. The close of the hajj is marked by the other major festival celebrated by all Muslims, Eid al-Adha.

6. Neutrosophic Relational Maps (NRMs)

Thus for us to define a NRM we need a domain space and a range space which are disjoint in the sense of concepts. We further assume no intermediate relations exist within the domain and the range space. The number of elements in the range space need not in general be equal to the number of elements in the domain space. In NRMs we divide the very casual associations into two disjoint units, like for example the relation between the personality (Domain space) and anger (Range space) in the case of physical health. We denote by D , the nodes D_1, \dots, D_n of the domain space where $D_i = \{(x_1, \dots, x_n)/x_j = 0 \text{ or } 1 \text{ or } I\} \text{ for } i = 1, \dots, n$. Similarly R , the set of nodes R_1, \dots, R_m of the range space, where $R_i = \{(x_1, x_2, \dots, x_m)/x_j = 0 \text{ or } 1 \text{ or } I\} \text{ for } i = 1, \dots, m$.

When

$x_i = 0$, then the node R_i is in OFF.

$x_i = 1$, then the node R_i is in ON.

$x_i = I$, then the node R_i is in Indeterminate state.

a. Definition:

The NRM is a directed graph or a map from D to R with concepts like policies or events etc. as nodes and causalities as edges. It represents causal relations between spaces D and R . Let D_i and R_j denote the two nodes of an NRM. The directed edge from D to R denotes the causality of D on R , called relations. Every edge in the NRM is weighted with a number in the set $\{0, 1, I\}$. Let e_{ij} be the weight of the edge $D_i R_j$, $e_{ij} \in \{0, 1, I\}$. The weight of the edge $D_i R_j$ is positive if increase

in D_i implies increase in R_j or decrease in D_i implies decrease in R_j . That is, causality of D_i on R_j is 1. If $e_{ij} = 0$ then D_i does not have any effect on R_j . If $e_{ij} = I$ then D_i have an Indeterminate on R_j . We do not discuss the cases when increase in D_i implies decrease in R_j or decrease in D_i implies increase in R_j .

b. Relational matrix of the NRM:

Let D_1, \dots, D_n be the nodes of the domain space D of an FRM and R_1, \dots, R_m be the nodes of the range space R of an NRM. Let the matrix E be defined as: $E = (e_{ij})$ where e_{ij} is the weight of the directed edge $D_i R_j$ (or $R_j D_i$), E is called the relational matrix of the FRM. Let $A = (a_1, \dots, a_n)$, $a_i \in \{0, 1, I\}$. A is called the instantaneous state vector of the domain space and it denotes the on-off-indeterminate position of the nodes at any instant. Similarly let $B = (b_1, \dots, b_m)$,

$b_i \in \{0, 1, I\}$. B is called the instantaneous state vector of the range space and it denotes the on-off position of the nodes at any instant. When $a_i = 0$ or 1 or I , if a_i is on or off or Indeterminate respectively, for $i = 1, \dots, n$. Similarly $b_i = 0$ or 1 or I if b_i is on or off or Indeterminate respectively, for $i = 1, \dots, m$.

c. Hidden Pattern: Consider $D_i R_j$ (or $R_j D_i$), $1 < j < m$, $1 < i < n$. When R_j (or D_i) is switched on and if causality flows through the edges of the cycle and if it again causes R_i (or D_j), we say that the dynamical system goes round and round. This is true for any node R_i (or D_j) for $1 < i < m$, ($1 < j < n$). The equilibrium state of this dynamical system is called the hidden pattern.

Fixed point: If the equilibrium state of the dynamical system is a unique state vector, then it is called a fixed point. Consider an FRM with R_1, \dots, R_m and D_1, \dots, D_n as nodes. For example let us start the dynamical system by switching on R_1 or D_1 . Let us assume that the NRM settles down with R_1 and R_m (or D_1 and D_n) on i.e. the state vector remains as $(10 \dots 01)$ in R [or $(10 \dots 01)$ in D], this state vector is called the fixed point.

Limit cycle: If the NRM settles down with a state vector repeating in the form

$A_1 \rightarrow A_2 \rightarrow \dots A_i \rightarrow A_1$ (or $B_1 \rightarrow B_2 \rightarrow \dots B_i \rightarrow B_1$) then this equilibrium is called a limit cycle.

7. Adaptation to the problem

To analyze the effect of the five pillars of Islam towards Sustainable development. We have interviewed 100 Muslim people in Chennai. The following attributes have been chosen. The five pillars of Islam are:

C_1 - Testimony that there no deity that deserves worship except Allah and Mohamed is his last messenger

C_2 -Prayers (Salat)

C_3 -Obligatory almsgiving (Zakat)

C_4 -Fasting Ramadan

C_5 -Pilgrimage to Makkah.(Hajj)

Effects:

D_1 - Foster relation and connection with Allah (God)

D_2 - Unity of Muslims

D_3 - Show true submission to God

D_4 - Spiritual and Physical purification

D_5 - Gaining rewards from God by mentioning his name and attributes and by remembering him

D_6 - Sacrifice of money, time and natural desires (e.g. eating and sexual relation during Ramadan) for the sake of God which illustrates victory over personal desires

D_7 - Remember the resurrection/judgment day we have formed a relation matrix based on the expert opinion.

$$M = \begin{bmatrix} 1 & 0 & 1 & 1 & 0 & 0 & 1 \\ 1 & 1 & 1 & 0 & 0 & 0 & 1 \\ 1 & I & 0 & 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 1 & 0 & 0 & 1 \\ 1 & 0 & 0 & 0 & 1 & I & 0 \end{bmatrix}$$

Let the input vector be $X_1 = (1 \ 0 \ 0 \ 0 \ 0)$

$X_1 M = (1 \ 0 \ 1 \ 1 \ 0 \ 0 \ 1) = Y_1$

$Y_1 M^T = (4 \ 3 \ 1 \ 3 \ 1) \rightarrow (1 \ 1 \ 1 \ 1 \ 1) = X_2$

$X_2 M = (5 \ 1+I \ 2 \ 2 \ 2 \ 1 \ 3) \rightarrow (1 \ 1 \ 1 \ 1 \ 1 \ 1) = Y_2$

$Y_2 M^T = (4 \ 4 \ 2+I \ 3 \ 2+I) \rightarrow (1 \ 1 \ 1 \ 1 \ 1) = X_3$

$X_3 M = (5 \ 1+I \ 2 \ 2 \ 2 \ 1 \ 1) \rightarrow (1 \ 1 \ 1 \ 1 \ 1 \ 1) = Y_3 = Y_2$

The pair of limit points $\{(1 \ 1 \ 1 \ 1 \ 1), (1 \ 1 \ 1 \ 1 \ 1 \ 1)\}$

II. CONCLUSION

It is highlighting that when C_1 is in on state, it gives the pair of limit points $\{(1 \ 1 \ 1 \ 1 \ 1), (1 \ 1 \ 1 \ 1 \ 1 \ 1)\}$ which means that the impact of five pillars gives Foster relation and Connection with Allah, Unity of Muslims, Show true submission to God, Spiritual and physical purification, Gaining rewards from God and Remember the judgment day except Sacrifice of money, time and natural desires for the sake of God. Since it is in indeterminate position. (i.e.) By spending money, time and natural desires, we can't determine faith.

REFERENCES

- [1] Kosco, B., *Neural Networks and Fuzzy Systems: A Dynamical Systems Approach to Machine Intelligence*, Prentice Hall of India, 1997
- [2] Kosko, Bart (1992). *Neural Networks and Fuzzy Systems*, Prentice – Hall, Englewood Cliffs, New Jersey.
- [3] Vasantha Kandasamy W.B and Smarandache Florentin “Analysis of social aspects of migrant laborers living with HIV/AIDS using Fuzzy Theory and Neutrosophic Cognitive Maps”, Xiquan, Phoenix (2004)
- [4] Pathinathan. T, Thirusangu K 2005 “On Tension Causes for School Dropouts – An Induced Linked Fuzzy Relational Mapping (ILFRM) Analysis”
- [5] W.B Vasantha Kandasamy, Florentin Smarandache and Ilanthenral, ‘Elementary Fuzzy Matrix Theory and Fuzzy Models for Social Scientists’, Printed in United States of America, 2007.