The Regulation and Influence of Physical Exercise on Human Body's Neutrosophic Set, Respiratory System and Nervous System

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Abstract:

The goal of this paper studying the influence of physical exercise (PE) on the human body. Physical exercise plays a vital role in the nervous system and respiratory due it has significant importance. The PE present a benefit in all functions in the body human. But if PE is not regular, it presents a high risk in humans, and humans are not safe when practices it. The impact of PE has many criteria and sub-criteria, which is complex and conflict criteria. So, the multi-criteria decision-making method is present for overcoming this problem. This problem contains incomplete and vague information. So, the neutrosophic sets are used for overcoming uncertainty. The Decision-making trial and evaluation laboratory (DEMATEL) method is a powerful tool for the present the importance and influence criteria on others. So DEMATEL integrated with neutrosophic sets for analyzing and influence regular PE in body human-like nervous systems. An illustrative example was conducted to show the outcome of this method.

Keywords: DEMATEL; Nervous system; Respiratory system; neutrosophic

1. Introduction

Regular PE plays a vital role in good health in the human body. It decrees stress and illness. Also, practicing PE has a great value in the nervous system and repertory. [1]. PE enhances the human body and provides it with various benefit functions like flexibility and mobility, cognition, control of insulin, mood assessment, and lower cancer risk. But many risks threaten the human body if the PE is not regular [2]. So, this paper studies the influence of regular PE in the human body, like the nervous system and the repertory system.

There are many articles on PE and its impact on the human body and its influence on the treatment of illness. [3], [4][5]–[9]. Musumeci [10] used a vibration as a PE and studied the impact on the human body. The influence of PE has many criteria and conflict criteria. So multi-criteria decision making (MCDM) is used for overcoming

Doi : https://doi.org/10.54216/IJNS.1803010

Received: February 02, 2022 Accepted: April 21, 2022

conflict criteria. The DEMATEL method was used to show the importance of these criteria in the nervous and repertory system.[11]–[13] DEMATEL is a powerful tool for dealing with decision-making [14]–[17].

The influence and impact of PE have incomplete and uncertain information. So the neutrosophic sets are used for dealing with this vague and incomplete information. The triangular neutrosophic sets used six values to overcome this inconsistent information. Neutrosophic has benefited over fuzzy systems because neutrosophic sets provide indeterminacy value in the calculation but fuzzy only discuss truth and falsity values.[18]–[20].

The core contributions of this work are that we use a first-time neutrosophic for analyzing and influencing PE in the human body and the nervous system, and the respiratory system. In this work, we use three main criteria and nineteen cub criteria and Triangular neutrosophic sets with the MCDM DEMATEL method for showing the importance of criteria.

The remainder of this paper is organized as follows: methodology in section 2. Section three presents an example. Section four presents the conclusions of this paper.

Table 1. Triangular Neutrosophic Scale

TNNS
<1,1,1,><0,0,1>
<1,2,3> <0.85,0.15,0.15>
<2,3,4><0.25,0.75,0.75>
<3,4,5> <0.9,0.1,0.1>
<4,5,6><0.45,0.60,0.60>

2. Methodology

In this section, we propose a methodology that contains form DEMATEL method under triangular neutrosophic sets. First, we use a triangular neutrosophic number (TNNs) which contains form six values. We construct a triangular neutrosophic scale in Table 1, which contains linguistics terms and TNNs, in which linguistic incorrupt present a high score than corrupt. The DEMATEL method is used to show the impact of criteria on others. The following basic steps of the DEMATEL method..

Phase 1: Determine objectives form this study and analysis problem.

Phase 2: Collect a group of decision-makers who have an expert in this field.

Phase 3: Collect criteria and sub-criteria for literature review.

Phase 4: Build a comparison pairwise matrix between criteria and others then between sub-criteria and others.

Phase 5: Convert the six values in the pairwise comparison matrix into one value by:

$$S(D) = (X + Y + Z)(2 + P - I - O)/9 \quad (1)$$

Where D value of pairwise comparison matrix, x,y,z an integer numbers and P, I ,O present Truth, Indeterminacy and Falsity values.

Phase 6: Combine the obtained matrix from previous steps into one matrix by average method. This matrix called a direct relation matrix between criteria and others

Doi : https://doi.org/10.54216/IJNS.1803010
Received: February 02, 2022 Accepted: April 21, 2022

Phase 7: Normalized a combined matrix by using a combined pairwise comparison matrix not previous phase then make a summation of each row then take a maximum value for this summation and store it in a variable K. Then obtain the normalized pairwise comparison matrix by:

$$nr = K * D_{ij} \quad (2)$$

Where value of D_{ij} present value of combined pairwise comparison matrix.

Phase 8: Compute total relation matrix using a Matlab software by

$$T_{ij} = nr_{ij}\,(I - nr_{ij}) \quad (3)$$

Where I present a Identity matrix.

Phase 9: Compute the sum and subtract of summation rows and columns. Then show the influence of criteria by subtract summations columns and rows. Where the highest value presents the highest impact between criteria and the lowest vale presents the lowest impact between criteria.

Table 2. Main and sub criteria

Main Criteria	Sub Criteria
Nervous system C1	Enhance oxygen pathway C1.1
	Muscle growth C1.2
	Reduce stress C1.3
	Recovery from illness C1.4
	Retain information C1.5
	Helpful develop children C1.6
Respiratory system C2	Increase oxygen C2.1
	Increase cardiac output C2.2
	Increase perfusion C2.3
	Increase area for exchange gas C2.4
	Increase alveolar ventilation C2.5
	Increase Volume respiration C2.6
	Maintain blood gas C2.7
Benefits functions exercises	Control insulin C3.1
	Mood assessment C3.2
	Lower risks of cancer C3.3
	Cognition C3.4
	Increase bone mineral density C3.5
	Flexibility and mobility C3.6

3. An Example

In this section, preset outcomes of the proposed algorithm to show impacts between criteria. The first step, the goal forms this article, analyze the regulation and influence of the physical exercise body of the human, respiratory and nervous systems. We collect criteria from the literature review to show the influence and impact

Doi : https://doi.org/10.54216/IJNS.1803010
Received: February 02, 2022 Accepted: April 21, 2022

of exercise in systems in the human body. Almost physical exercises have many risks that threaten human boys. But in this work, proposed regular exercises cannot contain risks in the human body. Neutrosophic sets are used for showing impacts it's on the human body by considering the uncertainty value in calculations. We select three main criteria and nineteen sub-criteria impacts on the human body. These criteria present the benefits of practice exercises on the human body and benefit impacts. Physical exercise has a significant impact on the systems on the human body. So criteria include nervous systems benefit, respiratory system benefit, and functions benefit in all human body. Table 2 presents three main criteria and nineteen sub-criteria impacts in the body of the human.

Three decision-makers were selected to evaluate the criteria and show the criteria between others by building a pairwise comparison matrix, which is a powerful matrix due to shoe comparison between criteria and others. Table 3-5 presents a pairwise comparison matrix between criteria and others. Then convert the value of TNN's into one value. Then combine the three comparison matrix into one matrix by taking the mean value in Table 6. Then normalize the combined pairwise matrix in Table 7. Then compute the total relation matrix by Matlab software in Table 8. Then show the importance of criteria between others in Table 9. The nervous system benefit presents the highest impact and importance between criteria. It is the best benefit when physical exercises in the human body and benefits function exercise are the lowest importance through the neutrosophic calculations. So, we conclude the physical exercise is more important for the nervous system. Fig 1. Present the main criteria importance.

Table 3. Pairwise comparison matrix for main criteria by first decision makers.

	C_1	C_2	C_3
C_1	1	2	4
C_2	0.5	1	6
C_3	0.25	0.166667	1

Table 4. Pairwise comparison matrix for main criteria by second decision makers.

	C_1	C_2	C_3
C_1	1	4	2.3
C_2	0.25	1	4
C_3	0.434783	0.25	1

Table 5. Pairwise comparison matrix for main criteria by third decision makers.

	C_1	C_2	C_3
C_1	1	2.3	2
C_2	0.434783	1	2.3
C_3	0.5	0.434783	1

Table 6. Combined pairwise comparison matrix for main criteria.

	C_1	C_2	C_3
C_1	1	2.766667	2.766667
C_2	0.394928	1	4.1

Doi : https://doi.org/10.54216/IJNS.1803010
Received: February 02, 2022 Accepted: April 21, 2022

C_3	0.394928	0.283816	1

Table 7. Normalized combined pairwise comparison matrix for main criteria.

	C_1	C_2	C_3
C_1	0.153061	0.423469	0.423469
C_2	0.060448	0.153061	0.627551
C_3	0.060448	0.043441	0.153061

Table 8. Total relation matrix for main criteria.

	C_1	C_2	C_3
C_1	0.317156	0.719711	1.191858
C_2	0.170132	0.320332	1.063384
C_3	0.102735	0.11909	0.320332

Table 9. Importance for main criteria.

	C_1
C_1	1.638702
C_2	0.394714
C_3	-2.03342

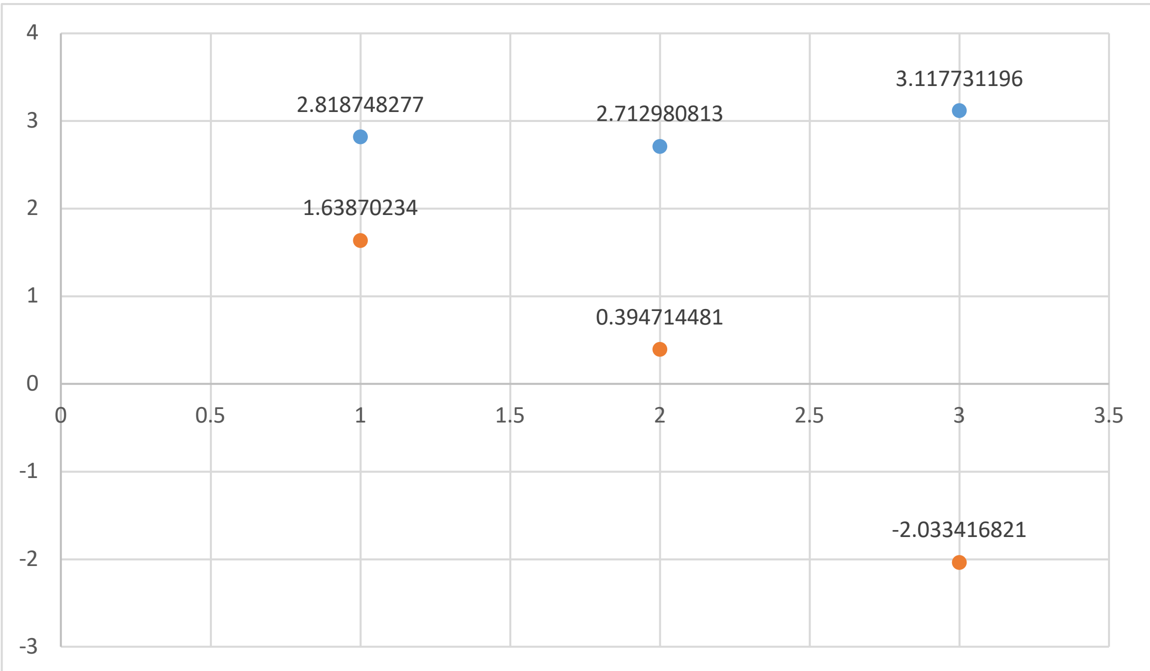

Figure 1. Importance of main criteria.

Then three decision-makers evaluate sub-criteria for three main criteria by building a pairwise comparison matrix between sub-criteria and others. First, decision-makers evaluate the sub-criteria for the nervous system

Doi : https://doi.org/10.54216/IJNS.1803010
Received: February 02, 2022 Accepted: April 21, 2022

that contains six sub-criteria. Build the three pairwise comparison matrices between sub-criteria and others in Tables 10-12. Then combine the tree pairwise comparison matrix into one matrix in Table 13. Then normalize the pairwise comparison matrix into Table 14. Then compute the total relation matrix in Table 15. Then show the importance of sub-criteria in Table 16. The enhanced oxygen pathway is of the highest importance in sub-criteria, and helping develop children is the lowest benefit to the nervous system. Fig 2. Show the importance of sub-criteria of the nervous system.

Table 10. Pairwise comparison matrix for nervous system criteria by first expert.

	$C_{1.1}$	$C_{1.2}$	$C_{1.3}$	$C_{1.4}$	$C_{1.5}$	$C_{1.6}$
$C_{1.1}$	1	2.3	2	4	2	2.3
$C_{1.2}$	0.434783	1	4	6	2.3	4
$C_{1.3}$	0.5	0.25	1	6	4	4
$C_{1.4}$	0.25	0.166667	0.166667	1	6	2.3
$C_{1.5}$	0.5	0.434783	0.25	0.166667	1	2
$C_{1.6}$	0.434783	0.25	0.25	0.434783	0.5	1

Table 11 Pairwise comparison matrix for nervous system criteria by second expert.

	$C_{1.1}$	$C_{1.2}$	$C_{1.3}$	$C_{1.4}$	$C_{1.5}$	$C_{1.6}$
$C_{1.1}$	1	2.3	6	4	4	6
$C_{1.2}$	0.434783	1	4	6	6	2
$C_{1.3}$	0.166667	0.25	1	2.3	2.3	2.3
$C_{1.4}$	0.25	0.166667	0.434783	1	6	4
$C_{1.5}$	0.25	0.166667	0.434783	0.166667	1	4
$C_{1.6}$	0.166667	0.5	0.434783	0.25	0.25	1

Table 12 Pairwise comparison matrix for nervous system criteria by third expert.

	$C_{1.1}$	$C_{1.2}$	$C_{1.3}$	$C_{1.4}$	$C_{1.5}$	$C_{1.6}$
$C_{1.1}$	1	4	2.3	2	4	2
$C_{1.2}$	0.25	1	4	6	6	2.3
$C_{1.3}$	0.434783	0.25	1	4	2	6
$C_{1.4}$	0.5	0.166667	0.25	1	2	6
$C_{1.5}$	0.25	0.166667	0.5	0.5	1	4
$C_{1.6}$	0.5	0.434783	0.166667	0.166667	0.25	1

Table 13 Combined pairwise comparison matrix for nervous system criteria

	$C_{1.1}$	$C_{1.2}$	$C_{1.3}$	$C_{1.4}$	$C_{1.5}$	$C_{1.6}$
$C_{1.1}$	1	2.866667	3.433333	3.333333	3.333333	3.433333
$C_{1.2}$	0.373188	1	4	6	4.766667	2.766667
$C_{1.3}$	0.36715	0.25	1	4.1	2.766667	4.1
$C_{1.4}$	0.333333	0.166667	0.283816	1	4.666667	4.1

Doi : https://doi.org/10.54216/IJNS.1803010
Received: February 02, 2022 Accepted: April 21, 2022

$C_{1.5}$	0.333333	0.256039	0.394928	0.277778	1	3.333333
$C_{1.6}$	0.36715	0.394928	0.283816	0.283816	0.333333	1

Table 14. Normalized combined pairwise comparison matrix for nervous system criteria

	$C_{1.1}$	$C_{1.2}$	$C_{1.3}$	$C_{1.4}$	$C_{1.5}$	$C_{1.6}$
$C_{1.1}$	0.052892	0.151623	0.181595	0.176306	0.176306	0.181595
$C_{1.2}$	0.019739	0.052892	0.211567	0.317351	0.252118	0.146334
$C_{1.3}$	0.019419	0.013223	0.052892	0.216856	0.146334	0.216856
$C_{1.4}$	0.017631	0.008815	0.015012	0.052892	0.246828	0.216856
$C_{1.5}$	0.017631	0.013542	0.020888	0.014692	0.052892	0.176306
$C_{1.6}$	0.019419	0.020888	0.015012	0.015012	0.017631	0.052892

Table 15. Total relation matrix for nervous system criteria

	$C_{1.1}$	$C_{1.2}$	$C_{1.3}$	$C_{1.4}$	$C_{1.5}$	$C_{1.6}$
$C_{1.1}$	0.088678	0.197008	0.274146	0.344787	0.395778	0.454568
$C_{1.2}$	0.054442	0.088922	0.278075	0.452818	0.469044	0.433347
$C_{1.3}$	0.040903	0.036416	0.08805	0.279013	0.265129	0.375835
$C_{1.4}$	0.034277	0.027917	0.042163	0.09126	0.310834	0.328264
$C_{1.5}$	0.027173	0.025976	0.03939	0.043343	0.0895	0.230979
$C_{1.6}$	0.02522	0.029559	0.030401	0.039582	0.04787	0.090183

Table 16. Importance for nervous system criteria

	Importance
$C_{1.1}$	1.484272
$C_{1.2}$	1.370848
$C_{1.3}$	0.333123
$C_{1.4}$	-0.41609
$C_{1.5}$	-1.12179
$C_{1.6}$	-1.65036

Doi : https://doi.org/10.54216/IJNS.1803010
Received: February 02, 2022 Accepted: April 21, 2022

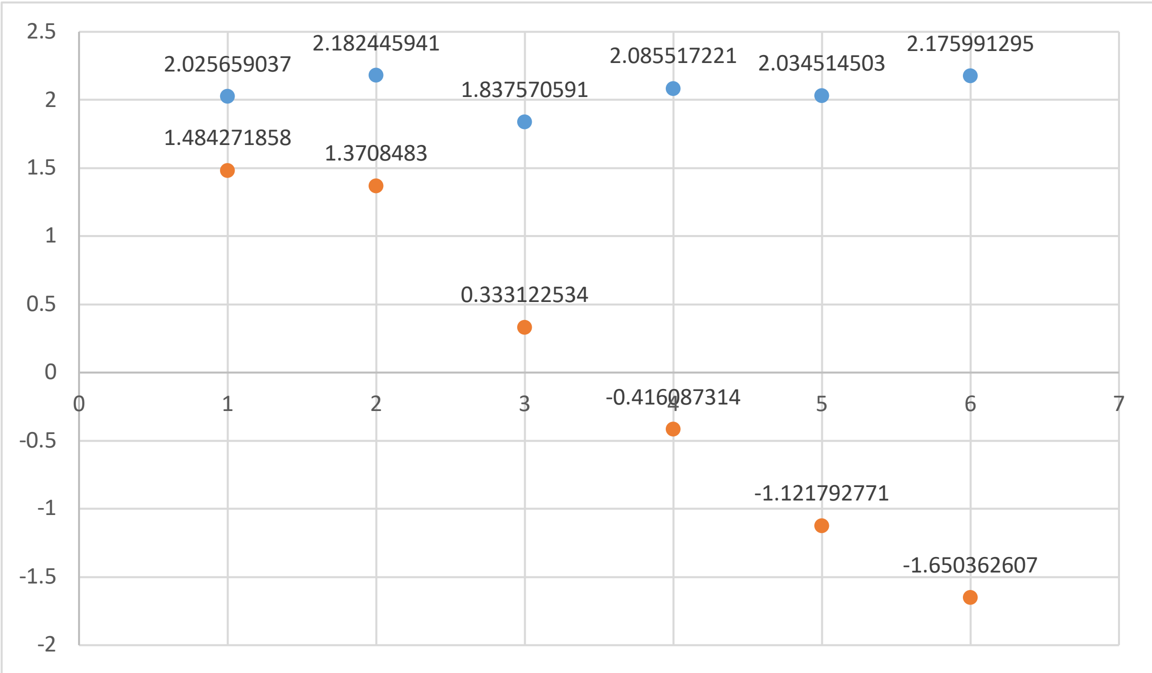

Figure 2. Importance of nervous system.

Then decision-makers evaluate the sub-criteria for the respiratory system that contains seven sub-criteria. Build the three pairwise comparison matrices between sub-criteria and others in tables 17-19. Then combine the tree pairwise comparison matrix into one matrix in Table 20. Then normalize the pairwise comparison matrix into Table 21. Then compute the total relation matrix in Table 22. Then show the importance of sub-criteria in Table 23. The increased oxygen is of the highest importance in sub-criteria, and maintaining blood gas is the lowest benefit in the nervous system. Fig 3. Show the importance of sub criteria of the respiratory system.

Table 17. Pairwise comparison matrix for respiratory system criteria by first expert.

	$C_{1.1}$	$C_{1.2}$	$C_{1.3}$	$C_{1.4}$	$C_{1.5}$	$C_{1.6}$	$C_{1.7}$
$C_{1.1}$	1	4	6	2.3	4	6	4
$C_{1.2}$	0.25	1	2	2	6	2	4
$C_{1.3}$	0.166667	0.5	1	2.3	2	2.3	2.3
$C_{1.4}$	0.434783	0.5	0.434783	1	2.3	4	2
$C_{1.5}$	0.25	0.166667	0.5	0.434783	1	6	6
$C_{1.6}$	0.166667	0.5	0.434783	0.25	0.166667	1	4
$C_{1.7}$	0.25	0.25	0.434783	0.5	0.166667	0.25	1

Table 18. Pairwise comparison matrix for respiratory system criteria by second expert.

	$C_{1.1}$	$C_{1.2}$	$C_{1.3}$	$C_{1.4}$	$C_{1.5}$	$C_{1.6}$	$C_{1.7}$
$C_{1.1}$	1	2	4	6	2	4	6
$C_{1.2}$	0.5	1	2.3	2.3	2.3	6	6

Doi : https://doi.org/10.54216/IJNS.1803010
Received: February 02, 2022 Accepted: April 21, 2022

$C_{1.3}$	0.25	0.434783	1	4	4	6	2
$C_{1.4}$	0.166667	0.434783	0.25	1	6	2.3	2.3
$C_{1.5}$	0.5	0.434783	0.25	0.166667	1	4	4
$C_{1.6}$	0.25	0.166667	0.166667	0.434783	0.25	1	2
$C_{1.7}$	0.166667	0.166667	0.5	0.434783	0.25	0.5	1

Table 19. Pairwise comparison matrix for respiratory system criteria by third expert.

	$C_{1.1}$	$C_{1.2}$	$C_{1.3}$	$C_{1.4}$	$C_{1.5}$	$C_{1.6}$	$C_{1.7}$
$C_{1.1}$	1	2.3	2	2.3	6	6	4
$C_{1.2}$	0.434783	1	6	4	4	2	2
$C_{1.3}$	0.5	0.166667	1	6	2.3	2.3	2.3
$C_{1.4}$	0.434783	0.25	0.166667	1	4	2	2
$C_{1.5}$	0.166667	0.25	0.434783	0.25	1	6	6
$C_{1.6}$	0.166667	0.5	0.434783	0.5	0.166667	1	2.3
$C_{1.7}$	0.25	0.5	0.434783	0.5	0.166667	0.434783	1

Table 20. Combined matrix for respiratory system criteria.

	$C_{1.1}$	$C_{1.2}$	$C_{1.3}$	$C_{1.4}$	$C_{1.5}$	$C_{1.6}$	$C_{1.7}$
$C_{1.1}$	1	2.766667	4	3.533333	4	5.333333	4.666667
$C_{1.2}$	0.394928	1	3.433333	2.766667	4.1	3.333333	4
$C_{1.3}$	0.305556	0.36715	1	4.1	2.766667	3.533333	2.2
$C_{1.4}$	0.345411	0.394928	0.283816	1	4.1	2.766667	2.1
$C_{1.5}$	0.305556	0.283816	0.394928	0.283816	1	5.333333	5.333333
$C_{1.6}$	0.194444	0.388889	0.345411	0.394928	0.194444	1	2.766667
$C_{1.7}$	0.222222	0.305556	0.456522	0.478261	0.194444	0.394928	1

Table 21. Normalized combined matrix for respiratory system criteria.

	$C_{1.1}$	$C_{1.2}$	$C_{1.3}$	$C_{1.4}$	$C_{1.5}$	$C_{1.6}$	$C_{1.7}$
$C_{1.1}$	0.057034	0.157795	0.228137	0.201521	0.228137	0.304183	0.26616
$C_{1.2}$	0.022524	0.057034	0.195817	0.157795	0.23384	0.190114	0.228137
$C_{1.3}$	0.017427	0.02094	0.057034	0.23384	0.157795	0.201521	0.125475
$C_{1.4}$	0.0197	0.022524	0.016187	0.057034	0.23384	0.157795	0.119772
$C_{1.5}$	0.017427	0.016187	0.022524	0.016187	0.057034	0.304183	0.304183
$C_{1.6}$	0.01109	0.02218	0.0197	0.022524	0.01109	0.057034	0.157795
$C_{1.7}$	0.012674	0.017427	0.026037	0.027277	0.01109	0.022524	0.057034

Table 22. Total relation matrix for respiratory system criteria.

	$C_{1.1}$	$C_{1.2}$	$C_{1.3}$	$C_{1.4}$	$C_{1.5}$	$C_{1.6}$	$C_{1.7}$
$C_{1.1}$	0.110578	0.244666	0.375652	0.420158	0.514155	0.742324	0.766091
$C_{1.2}$	0.060174	0.114489	0.288364	0.307379	0.428312	0.509366	0.587434

Doi : https://doi.org/10.54216/IJNS.1803010
Received: February 02, 2022 Accepted: April 21, 2022

$C_{1.3}$	0.044696	0.062382	0.116627	0.323469	0.302917	0.426705	0.386497
$C_{1.4}$	0.040145	0.054356	0.064018	0.117176	0.318817	0.335356	0.333862
$C_{1.5}$	0.036013	0.047257	0.068474	0.075581	0.121633	0.421534	0.472666
$C_{1.6}$	0.020029	0.037039	0.044382	0.055673	0.051092	0.115205	0.23069
$C_{1.7}$	0.019337	0.028621	0.044928	0.054795	0.046825	0.07247	0.113036

Table 23. Importance for respiratory system criteria

	Importance
$C_{1.1}$	2.842651
$C_{1.2}$	1.70671
$C_{1.3}$	0.660849
$C_{1.4}$	-0.0905
$C_{1.5}$	-0.54059
$C_{1.6}$	-2.06885
$C_{1.7}$	-2.51026

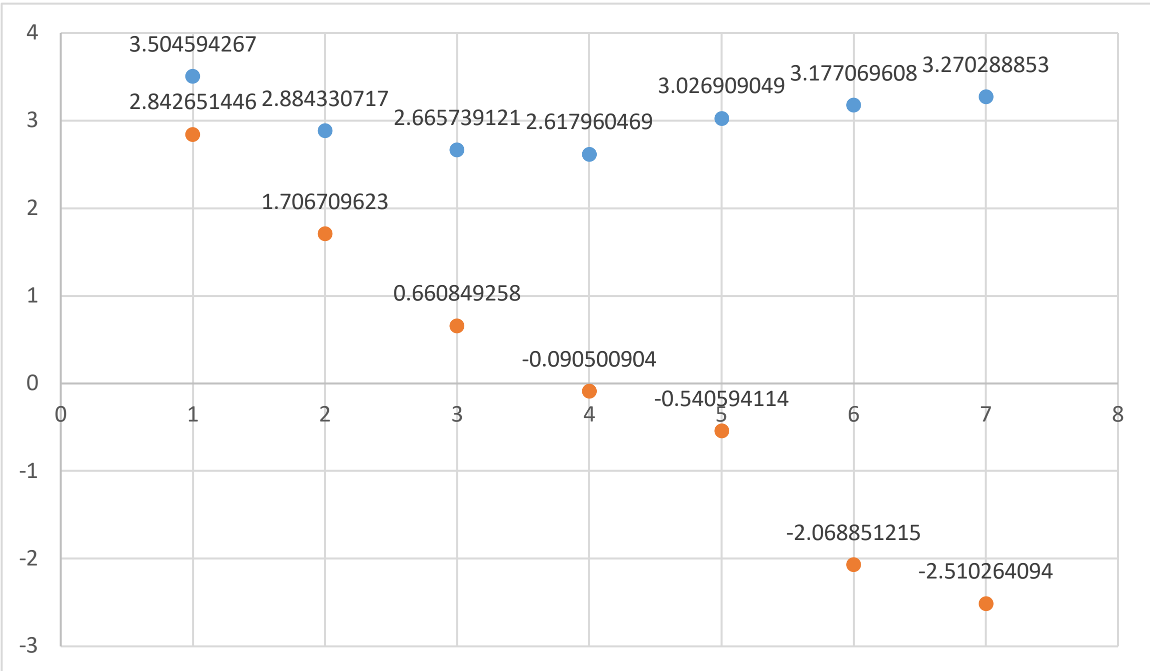

Figure 3. Importance of respiratory system.

Then decision-makers evaluate the sub-criteria for benefit functions exercises that contain six sub-criteria. Build the three pairwise comparison matrices between sub-criteria and others in Tables 24-26. Then combine the tree pairwise comparison matrix into one matrix in Table 27. Then normalize the pairwise comparison matrix into Table 28. Then compute the total relation matrix in Table 29. Then show the importance of sub-criteria in Table 30. The control of insulin is of the highest importance in sub-criteria, and flexibility and mobility is the lowest benefit to the nervous system. Fig 4. Show the importance of sub criteria of benefit functions exercises.

Doi : https://doi.org/10.54216/IJNS.1803010
Received: February 02, 2022 Accepted: April 21, 2022

Table 24. Pairwise comparison matrix for benefit functions exercises by first expert

	$C_{1.1}$	$C_{1.2}$	$C_{1.3}$	$C_{1.4}$	$C_{1.5}$	$C_{1.6}$
$C_{1.1}$	1	4	2.3	2.3	4	4
$C_{1.2}$	0.25	1	2	4	6	6
$C_{1.3}$	0.434783	0.5	1	2	2.3	2.3
$C_{1.4}$	0.434783	0.25	0.5	1	2	4
$C_{1.5}$	0.25	0.166667	0.434783	0.5	1	6
$C_{1.6}$	0.25	0.166667	0.434783	0.25	0.166667	1

Table 25. Pairwise comparison matrix for benefit functions exercises by second expert

	$C_{1.1}$	$C_{1.2}$	$C_{1.3}$	$C_{1.4}$	$C_{1.5}$	$C_{1.6}$
$C_{1.1}$	1	2	4	2	2.3	4
$C_{1.2}$	0.5	1	2.3	2	4	2.3
$C_{1.3}$	0.25	0.434783	1	4	2	6
$C_{1.4}$	0.5	0.5	0.25	1	2.3	6
$C_{1.5}$	0.434783	0.25	0.5	0.434783	1	2.3
$C_{1.6}$	0.25	0.434783	0.166667	0.166667	0.434783	1

Table 26. Pairwise comparison matrix for benefit functions exercises by third expert

	$C_{1.1}$	$C_{1.2}$	$C_{1.3}$	$C_{1.4}$	$C_{1.5}$	$C_{1.6}$
$C_{1.1}$	1	2.3	2	4	2.3	6
$C_{1.2}$	0.434783	1	2.3	4	4	4
$C_{1.3}$	0.5	0.434783	1	2.3	2.3	2
$C_{1.4}$	0.25	0.25	0.434783	1	6	2.3
$C_{1.5}$	0.434783	0.25	0.434783	0.166667	1	6
$C_{1.6}$	0.166667	0.25	0.5	0.434783	0.166667	1

Table 27. Combined matrix for benefit functions exercises.

	$C_{1.1}$	$C_{1.2}$	$C_{1.3}$	$C_{1.4}$	$C_{1.5}$	$C_{1.6}$
$C_{1.1}$	1	2.766667	2.766667	2.766667	2.866667	4.666667
$C_{1.2}$	0.394928	1	2.2	3.333333	4.666667	4.1
$C_{1.3}$	0.394928	0.456522	1	2.766667	2.2	3.433333
$C_{1.4}$	0.394928	0.333333	0.394928	1	3.433333	4.1
$C_{1.5}$	0.373188	0.222222	0.456522	0.36715	1	4.766667
$C_{1.6}$	0.222222	0.283816	0.36715	0.283816	0.256039	1

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Received: February 02, 2022 Accepted: April 21, 2022

Table 28. Normalized combined matrix for benefit functions exercises.

	$C_{1.1}$	$C_{1.2}$	$C_{1.3}$	$C_{1.4}$	$C_{1.5}$	$C_{1.6}$
$C_{1.1}$	0.059406	0.164356	0.164356	0.164356	0.170297	0.277228
$C_{1.2}$	0.023461	0.059406	0.130693	0.19802	0.277228	0.243564
$C_{1.3}$	0.023461	0.02712	0.059406	0.164356	0.130693	0.20396
$C_{1.4}$	0.023461	0.019802	0.023461	0.059406	0.20396	0.243564
$C_{1.5}$	0.02217	0.013201	0.02712	0.021811	0.059406	0.283168
$C_{1.6}$	0.013201	0.01686	0.021811	0.01686	0.01521	0.059406

Table 29. Total Relation matrix for benefit functions exercises.

	$C_{1.1}$	$C_{1.2}$	$C_{1.3}$	$C_{1.4}$	$C_{1.5}$	$C_{1.6}$
$C_{1.1}$	0.100396	0.222638	0.256252	0.303945	0.376544	0.62961
$C_{1.2}$	0.057751	0.101142	0.195839	0.296128	0.43536	0.552373
$C_{1.3}$	0.045397	0.054692	0.100111	0.224123	0.232167	0.394023
$C_{1.4}$	0.042203	0.043387	0.058219	0.103454	0.274336	0.404624
$C_{1.5}$	0.034709	0.030935	0.052246	0.054034	0.103613	0.375807
$C_{1.6}$	0.01885	0.025409	0.034505	0.035425	0.041236	0.104363

Table 30. Importance for benefit functions criteria

	Importance
$C_{1.1}$	1.590081
$C_{1.2}$	1.16039
$C_{1.3}$	0.35334
$C_{1.4}$	-0.09089
$C_{1.5}$	-0.81191
$C_{1.6}$	-2.20101

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Received: February 02, 2022 Accepted: April 21, 2022

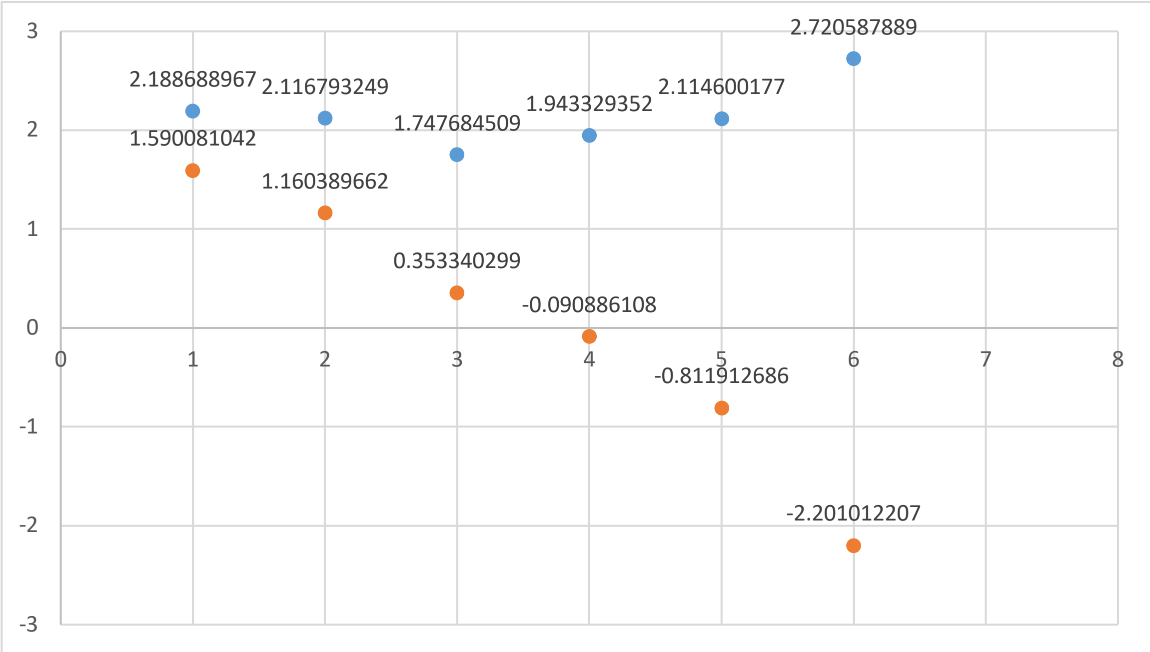

Figure 4. Importance of benefit functions.

4. Conclusions

We conclude from this work that the DEMATEL method is a powerful tool for studying the influence between criteria and others. We use three main and nineteen criteria for studying the impact between benefits of physical exercises. The triangular neutrosophic numbers were used for evaluated criteria and alternatives. Form this paper, the nervous system is the highest goal from physical exercise in the human body and provides many functions. And function benefit has the lowest influence on the human body.

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Received: February 02, 2022 Accepted: April 21, 2022