

Contemporaneity of Language and Literature in the Robotized Millennium

Vol: 3(2), 2021

REST Publisher

ISBN: 978-81-936097-3-6

Website: <http://restpublisher.com/books/cllrn/>

Modal Auxiliary Verb Using Fuzzy ARAS Method

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Abstract

Modal Auxiliary Verb. There are nine modal auxiliary verbs: shall, should, can, could, would, will, would, may, must, might. There are also semi-modal auxiliary verbs: ought to, need to, has to. There are ten common modal subjunctive verbs, namely 'can', 'could', 'will', 'would', 'shall', 'should', 'may', 'might', 'must' and 'ought'. Modal auxiliary verbs often express ideas of need and possibility. Language solves the problem Modal Auxiliary Verbs in all common verbs. methodology: Fuzzy ARAS (Additive Ratio Assessment) analysis using Modal Auxiliary Verb 1, Modal Auxiliary Verb 2, Modal Auxiliary Verb 3 Alternative value and shall, should, can, could Evaluation Parameters in value. Results: A2 Modal Auxiliary Verb is got the first rank whereas is the A1 Modal Auxiliary Verb is having the Lowest rank.

Keywords: Modal Auxiliary Verb, Fuzzy ARAS, Could

Introduction

There are nine modal auxiliary verbs: shall, should, can, could, would, will, would, may, must, might. There are also semi-modal auxiliary verbs: ought to, need to, has to. There are ten common modal subjunctive verbs, namely 'can', 'could', 'will', 'would', 'shall', 'should', 'may', 'might', 'must' and 'ought'. Modal auxiliary verbs often express ideas of need and possibility. A modal verb is a type of auxiliary verb used to express modes (states or 'ways' in which an object exists) such as possibility, ability, constraint and necessity. Some common examples of modal verbs include should, must, will, might, and can. Helping verbs, helping verbs, there are 23! Am, is, are, was and were, being, be, and be, have, has, had, had, do, do, did, did, will, will, will, shall and ought. There are five more helping verbs: may, might, must, can, could! Important english model verbs are can, could, may, might, shall, should, will, would, and must. Some other verbs are some Sometimes, but not always, models are classified as; of course, it was excellent and (in some usages) includes courage and necessity. The three types of models are epistemic (relating to assumptions), deontic (relating to ideals or norms), and dynamic (relating to performance). Auxiliary verbs, also called auxiliary Verbs or helping verbs, a Small that supports the main verb in the sentence verbs, such as aspects of tense or manner communicates complex grammatical concepts. For example, in this sentence, "I report is a A key to show time and continuity a verb is used with a verb. To be and to be are primary subclauses. a primary to form compound tenses The accessory is used. Uncertainty of Addition Rate Estimation (ARAS) method. Created in an ambiguous environment. With three decision phases. Uncertainties of various stages in supply chains are included in the evaluation process. FUZZY ARAS is multi-criteria is a decision-making system consisting of This is in recent years Proven effective, the Additive Ratio Assessment (ARAS) method has been proposed simple comparisons Using Understood Complex world events solving a new approach[15]. Adhesion Ratio estimation (ARAS) technique is appropriate Can be attitude. Contradictory Complicated with standards to resolve instances of domains It relies on the idea that can the use of easy relative evaluation.

Modal Auxiliary Verb

The modal The verb "hui". performed within the sentence Modifies the speech act "Wǒ bǎohù nǐ (I guard you)" whose stressful relies in present truth. By including the modal verb "hui", a probable route alongside the time axis is projected from the present fact vicinity to the artificial vicinity. The motion method of "defensive" is projected into the destiny with the aid of the modal verb "hui". The modal verb "hui" lets in us to take part in conceptual cognition, converting from the truth in "Wǒ bǎohù nǐ (I guard you)" to the potential reality in "Wǒ hui bǎohù nǐ (I will defend you)" [16]. Model auxiliary verbs The consequences of this corpus-primarily based examine generally Familiarity with content tend to give sense of the 3 recommended textbooks, thereby helping educators discover precise already in use Strengths of textbooks and weaknesses. to do acquire extra reliability inside the textbook corpus. Awareness of and familiarity with modal subjunctives will cross a long manner in supporting instructors make the first-rate use of the textbook's strengths and ultimately in spotting the shortcomings of certain exercises, assignments, and whole texts [1]. Modal Subjunctive Verbs in English According to Huckin & Olsen (1991: 542), students and scientists should use linguistic assets exactly when publishing their studies findings. The accurate desire of modal auxiliary verbs facilitates them attain that intention. The evaluation supplied on this paintings is primarily based at the classification and values of modal auxiliary verbs described in classical English grammars (Leech & Svartvick, 1975, Quirk et al., 1985, Greenbaum & Quirk, 1990, Downing & Locke, 1992). Modal verbs are grouped into corporations in keeping with their frequency of use. The first group includes the modal verb can and its beyond form can, which are specially used in English to express capability, permission, and possibility. The 2nd group especially consists of other modal auxiliary verbs used to indicate responsibility or requirement (should, need to, ought to, must, have to), permission or opportunity (may

additionally, might) and goal, prediction or chance (could) [2]. Sample auxiliary verbs (along with their bad forms) found in 5 In lower and upper levels English textbooks in descending order Given: can, will, need to, Mayit, Mucht, Mayit Also, Gold, May and Sal The textbook corpus contained a complete of 4154 key samples. Between can and can on the one hand there is a large frequency gap, on the other hand Alternate seven fashions [3]. In Portuguese, the verb of motion is ir - English Cross or French aller - as a subjunctive verb Grammarized (or semi-sub verb, as others classify it), which Most grammars about Portuguese and A clause in articles is defined as a marker (cf. E.G. Lima 2001, A historical overview of the verb adjustments). As many authors factor, this Meaning, IR is described as an opportunity although not always with perfect distribution [17]. By using a modal/subjunctive verb (eg, can he pass?) or a dummy subjunctive (eg, Is he moving?). English questions as he goes provide a model for words like, and That such words are allowed separately leading to (mis)counting of children. Such Proofs of account are provided by Theakston, Levin et al are presented by Tomasello (2003). targeted In questions (eg, is it mib?), on the contrary Notifications (look, it's mibs) or Questions and notifications composition (is it mib? origin, is it mibs) [18]. As we are able to see, the speaker makes a speciality of particular modal subtypes associated with particular or overlapping modal meanings (e.g. Piper, Johansson, Leach, Conrad et al Finegan, 1999; Greenbaum and Nelson, 2002; (Quirk, Greenbaum, Leach, and Swarthwick, 1985). A functionalist model that blurs the distinction among dependent (epistemic) and supply factors has caused the positing of axillary categories. Thus, for functionalist processes, root modality expresses "human manipulate over occasions related to permission, purpose, capacity, or responsibility" (Greenbaum and Nelson, 2002: 111), at the same time as conceptualization. "Whether an occasion was, is, or will appear" [19]. Existing research typically cognizance most effective category hassle. As a end result, current research ignore two kinds of important bias records [20]. Verbs based totally on normal verbal exchange recorded in 13 different languages across these various communities involuntary communication is usually two the concept of verbs discussed Provides resources for extensions. —sensing, understanding, listening to~linguistic communiqué—in addition to illustrating different Meanings and functions (e.g., discourse use of belief verbs as markers) formerly much less favored. Various instantaneous applicability in casual communiqué makes it clear that this form of records must be valuable to empirically primarily based semantic research. Furthermore, these statistics advise Police Mouse Meanings Commonalities, Universal Cognition Not dependent, but social nonetheless The universality of communication It also depends on the requirements [22].

Modal Auxiliary Verb

Model auxiliary verb: A modal verb is an auxiliary verb used to express modes (states or 'ways' in which an object exists) such as possibility, ability, control and necessity. Some common examples of modal verbs include should, must, will, might, and can. Helping verbs there are 23! Am, is, are, was and were, being, be, and be, have, has, had, had, do, do, did, did, will, will, will, shall and should.

Shall: A shall is often used to express the intention or determination that I will go shopping or that she will become the next queen. The differences are subtle, but what is important to note is that both will and shall are used in all verbs to form the future tense.

Should: To express something possible. Examples: "John is at 2:00 p.m Should be here." He brings Jennifer with him want To ask questions. Examples "Do you want to turn left on this street?"

To show commitment, give a suggestion or comment. Examples: "You should stop eating fast food."

Can: Taken literally, "can you" is equivalent to asking the person if they can do something. On the other hand, "can you" indicates that the person can complete the action under certain circumstances. The use of can you is silly, so the more popular phrase of the two is used

Could: Could is used in the past tense of can when it means that someone was capable of doing something or that something was possible: A Roman army could march 30 miles in a day. Both 'can' and 'could' are modal verbs indicating 'a possibility', 'ability' or 'ability'. 'Could' implies a general fact or something that has a strong possibility. 'Could' implies a weak possibility or something that might happen, but not necessarily a general fact.

Fuzzy ARAS

FUZZY ARAS is multi-criteria is a decision-making system consisting of This is in recent years Proven effective, the Additive Ratio Assessment (ARAS) method has been proposed simple comparisons Using Understood Complex world events solving a new approach[15]. Adhesion Ratio estimation (ARAS) technique is appropriate Can be attitude. Contradictory Complicated with standards to resolve instances of domains It relies on the idea that can the use of easy relative evaluation, and instead gives the opportunity that IVIF numbers produce a greater adequate version for fixing technique Comes from energy, a unique Primary based IVIF MCDM approach [17]. A Fuzzy Extension of Additive Ratio Estimation (ARAS) method. The version turned into used to resolve an actual case observe of the assessment oil and gas well drilled Assignments. Oil and gas properly Despite the importance of drilling operations Describe the performance of projects in this field and to the evaluation literature There is a shortage. Alternatively, there is no bias assessment system is provided for this type of challenge. Based at the restricted studies on overall Penetrates well in oil and fuel Performance evaluation in projects, research overall performance standards a Constantly identifies and proposes assessment version the usage of the bushy The Delphi method. The proposed method A useful and opportunity One is to choose Example shows approach [13]. Fuzzy Addition Rate Estimation (ARAS-F) method is most authentic at events, soft human judgments Ambiguous and in specific numerical values Cannot be expressed. Human perception and motion address unwell-structured choice-making troubles in a surroundings of uncertainty. Human decision-making ought to take subjectivity under consideration acquired statistics in a trouble-solving version [14]. The ARAS technique is based totally at the argument that globally complex phenomena are understood via distinctly simple comparison. Fuzzy set and Fuzzy Considering the benefits of words Fuzzy theory of human selection Adding

to this version is very important. get rid of ambiguity. Therefore, the Fuzzy Aras fundamental method is added beneath. The first step in fixing a multivariate The problem of selection is the selection team is to draw Multidimensional in choosing the hassle requiring answer ought to be offered via the decision-making group. Furthermore, Therefore the design calls for a fuzzy MCDM framework that integrates ARAs for conveyor assessment and choicea fuzzy discrete MCTM referred to as Fuzzy ARAS turned into delivered, which has confirmed beneficial in current years. It is efficaciously used within the fields of economic system, shipping, era, construction and sustainable development. For instance, amongst wonderful programs of fuzzy arrays [1]. Fuzzy ARAS method for decision making Creates a problemthat does not take into account the interdependence between evaluation criteria. In setting Real life problems assessment The criteria are interdependent. Different models have been developed to consider the relationship between elements. Real-world problems are more accurate Fuzzy ARAS method for generating Unclear or inaccurate information Preference for alternative examination in presence to carry out a detailed analysis of the provision [3]. A fuzzy Arras Method is proposed. An approach wherein person estimates are converted into c program language period-valued triangular fuzzy numbers is very beneficial in this case. A programming language-valued triangular fuzzy ARAS approach can use such records to rank options and/or examine distinct eventualities. Therefore, by way of the use of this approach, choice makers are given the possibility to express their constructive, pessimistic and realistic attitudes [4]. Fuzzy ARAS methods and Chief Accounting Officers Ambiguous to evaluate A weighted product model. Using the Arras approach, he prioritized his buildings for lifestyle. Integrated Brand extension in dairy food industry to solve the problem of method selection Fuzzy ARAS methods. ARAS technique turned into used to remedy the sustainable constructing certification problem. Proposed the c language envisioned fuzzy set-based ARAS approach [5]. Fuzzy based MCDM It is by comparing methods is confirmed. Insights into FTC testing at tire manufacturing company in the Czech Republic Its real life applicability Provided to fully explain the character. developed methodology. Fuzzy Aras method is more complex in dealing with the FTC exam issue Shows performance [6]. A new fuzzy addition ratio ratter (ARAS-F) method Proposed and thisis newly developed useful and as an easy-to-use FMCDM method can be categorized. Problem solver process can be accurately described using ARAS-F methods [12]. Based on the selected indicators, a survey was conducted to gather expert opinions on the Significance of observed Indicators. Personal Interviews and Fuzzy AHP and Fuzzy ARAS By filling out questionnaires about various about criteria and alternatives Expert opinions were obtained [2]. ARAS is a unique approach which The effectiveness will be demonstrated in this paper. On the other hand, review As done, transport, economy, technology, In many fields such as sustainable development and construction ARAS and Fuzzy ARAS have been used successfully [7].

Analysis and Discussion

TABLE 1. Criterion Weights

Criterion Weights	
Medium	(0.3,0.5,0.7)
High	(0.7,0.7,1.0)
Very High	(0.9,1.0,1.0)

Table 1 shows the Criterion Weights scale value of M, H, VH stands for high and F stands for fair Value.

TABLE 2. Machine learning

	C1	C2	C3	C4
A1	M	H	H	M
A2	M	H	H	H
A3	VH	M	VH	H

Table 2 above shows the code for Modal Auxiliary Verb1, Modal Auxiliary Verb 2, Modal Auxiliary Verb 3. shall, should, can, could, of the column of each criterion index is modified to the value.

TABLE 3. Analysis in Fuzzy

	l	l'	m	u'	u
0.3	0.432675	0.629961	0.788374	1	
0.3	0.527763	0.625732	0.887904	1	
0.7	0.761166	0.788374	1	1	
0.3	0.527763	0.625732	0.887904	1	

Table 3 shows the value that the table 1 substituted in table 2. The l column mention that minimum of first value of all the criterion weight which the value substituted in the table 2. As same as the l' mention cube root of product of the first value substituted in the table 2. m mentions the cube root of product of the second value substituted in the table 2. u' mention the cube root of product of the third value.

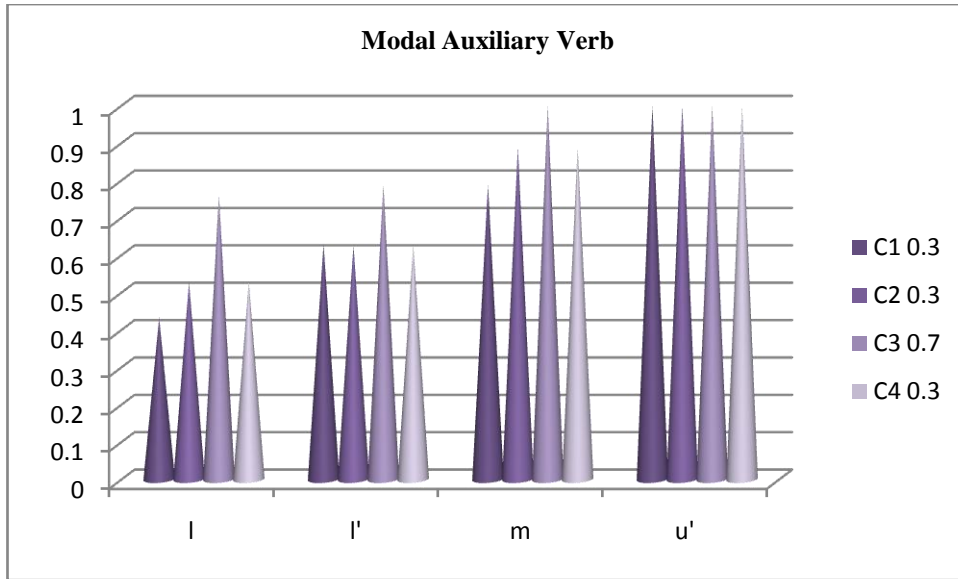


FIGURE 1. Criterion Weights Modal Auxiliary Verb

Figure 1 shows the Criterion Weights Machine learning of the Table 3. It shows that the all the u in shall, should, can, could, has the same value have the major criterion weight when compare to all other.

TABLE 4. Criterion Weights

MG	0.5, 0.7, 0.9
G	0.7, 0.7, 1.0
VG	0.9, 1.0, 1.0
F	0.3, 0.5, 0.7

TABLE 5. Modal Auxiliary Verb

	w1	w2	w3	w4
	C1	C2	C3	C4
Optimal				
A1	1,1	1,2	1,3	1,4
A2	2,1	2,2	2,3	2,4
A3	3,1	3,2	3,3	3,4

Table 5 shows Modal Auxiliary Verb of the place which represent the column and row of the above tabulation.

TABLE 6. Formula to Calculate the Performance Rating

	C1	C2	C3	C4
A1	G,F,MG	F,MG,G	VG,MG,G	VG,F,MG
A2	MG,G,VG	VG,F,MG	G,MG,VG	G,MG,F
A3	F,MG,G	MG,G,VG	F,G,MG	MG,G,VG

Table 6 shows Formula to Calculate the Performance Rating for each box in the table by substituting the table 5 value in table 6 By continuing this process for each row and column the next value will be found.

TABLE 7. Maximum Calculated the value.

A01	0.5	0.680409	0.788374	0.965489	1
A02	0.5	0.680409	0.788374	0.965489	1
A03	0.5	0.680409	0.788374	0.965489	1
A04	0.5	0.680409	0.788374	0.965489	1

Table 7 shows the Maximum of each box with respect to the table 5. The maximum of all row and column are considered.

TABLE 8. Solved value of L, l', m, u'

		l	l'	m	u'
1,1	0.3	0.471769	0.625732	0.857262	1
1,2	0.3	0.471769	0.625732	0.857262	1
1,3	0.5	0.680409	0.788374	0.965489	1
1,4	0.3	0.512993	0.70473	0.857262	1
2,1	0.5	0.680409	0.788374	0.965489	1
2,2	0.3	0.512993	0.70473	0.857262	1
2,3	0.5	0.680409	0.788374	0.965489	1
2,4	0.3	0.471769	0.625732	0.857262	1
3,1	0.3	0.471769	0.625732	0.857262	1
3,2	0.5	0.680409	0.788374	0.965489	1
3,3	0.3	0.471769	0.625732	0.857262	1
3,4	0.5	0.680409	0.788374	0.965489	1

Table 8 shows the Solved value of L, l', m, u' value that the table 5 substituted in table 6. The l column mention that minimum of first value of all the criterion weight which the value substituted in the table 6. As same as the l' mention cube root of product of the first value substituted in the table 6. m mentions the cube root of product of the second value substituted in the table 6. u' mention the cube root of product of the third value.

TABLE 9. Normalized Matrix

	Normalized Matrix				
A0	0.125	0.170102	0.197093	0.241372	0.25
M1	0.075	0.128248	0.176182	0.214315	0.25
M2	0.075	0.117942	0.156433	0.214315	0.25
M3	0.125	0.170102	0.197093	0.241372	0.25

Table 9 shows the various Normalized Matrix shall, should, can, could, in Modal Auxiliary Verb1, Modal Auxiliary Verb 2, and Modal Auxiliary Verb 3 for Higher Value and lower Value.

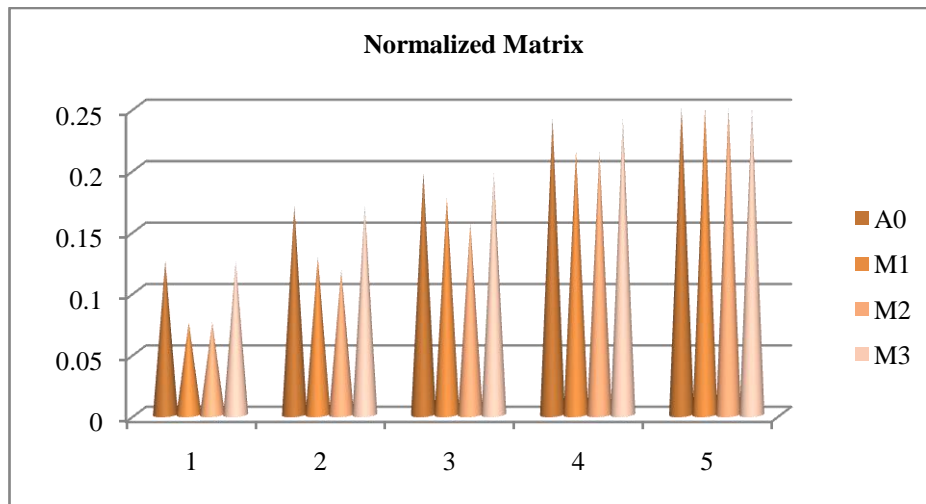


FIGURE 2. Normalized Matrix

Figure 2. Shows the various Normalized Matrix shall, should, can, could, in Modal Auxiliary Verb1, Modal Auxiliary Verb 2, and Modal Auxiliary Verb 3 for Higher Value and lower Value.

TABLE 10. Weighted Normalized Matrix

	Weighted Normalized Matrix				
	0.3	0.527763	0.625732	0.887904	1
A0	0.0375	0.089774	0.123328	0.214315	0.25
M1	0.0225	0.067685	0.110243	0.190292	0.25
M2	0.0225	0.062246	0.097885	0.190292	0.25
M3	0.0375	0.089774	0.123328	0.214315	0.25

Table 10 Shows the Weighted Normalized Matrix for Modal Auxiliary Verb1 is Showing the highest value and lowest value.

TABLE 11.Weighted Normalized Matrix C1

Weighted Normalized Matrix C1					
A0	0.0375	0.073599	0.124161	0.190292	0.25
M1	0.0225	0.051031	0.098547	0.168961	0.25
M2	0.0375	0.073599	0.124161	0.190292	0.25
M3	0.0225	0.051031	0.098547	0.168961	0.25

Table 11 Show the Weighted Normalized Matrix shall C1 from all the other calculation done on the above. It shows the weighted normalized matrix of C1 which represent.

TABLE 12.Weighted Normalized Matrix C2

Weighted Normalized Matrix C2					
A0	0.0375	0.089774	0.123328	0.214315	0.25
M1	0.0225	0.062246	0.097885	0.190292	0.25
M2	0.0225	0.067685	0.110243	0.190292	0.25
M3	0.0375	0.089774	0.123328	0.214315	0.25

Table 12 Show the Weighted Normalized Matrix should C2, represent the value calculation of the should C2, from all the other calculation done on the above. It shows the weighted normalized matrix of which represent higher value.

TABLE 13. Weighted Normalized Matrix C3

Weighted Normalized Matrix C3					
A0	0.0875	0.129476	0.155383	0.241372	0.25
M1	0.0875	0.129476	0.155383	0.241372	0.25
M2	0.0875	0.129476	0.155383	0.241372	0.25
M3	0.0525	0.089774	0.123328	0.214315	0.25

Table 13 Show the Weighted Normalized Matrix can C3, calculation of the can C3, from all the other calculation done on the above. It shows the weighted normalized matrix of for Modal Auxiliary Verb which represented is higher value.

TABLE 14.Weighted Normalized Matrix C4

Weighted Normalized Matrix C4					
A0	0.0375	0.089774	0.123328	0.214315	0.25
M1	0.0225	0.067685	0.110243	0.190292	0.25
M2	0.0225	0.062246	0.097885	0.190292	0.25
M3	0.0375	0.089774	0.123328	0.214315	0.25

Table 14 Show the Weighted Normalized Matrix Performance of could C4calculation from all the other calculation done on the above. It shows the weighted normalized matrix for Modal Auxiliary Verb which represent of higher value.shall, should, can, could

TABLE 15.Calculated in using Maximum Value.

	Si				
A0	0.2	0.382623	0.5262	0.860295	1
M1	0.155	0.310437	0.462058	0.790916	1
M2	0.17	0.333005	0.487673	0.812247	1
M3	0.15	0.320352	0.46853	0.811907	1

Table 15 Show the Calculated in using Maximum Value for A1 Modal Auxiliary Verb, A2 Modal Auxiliary Verb, A3 Modal Auxiliary Verb. Modal Auxiliary Verb is showing the highest value and lowest value.

TABLE 16. Final Result of Modal Auxiliary Verb

	Si	Qi	Rank
	0.593823	1	
M1	0.543682	0.915562	3
M2	0.560585	0.944026	1
M3	0.550158	0.926467	2

Table 16 Show the Final Result of FUZZY Modal Auxiliary Verb Figure 3 Final Result of Modal Auxiliary Verb A2 Modal Auxiliary Verb is showing the highest value for Si and A1 Modal Auxiliary Verb is showing the lowest value A2 Modal Auxiliary Verb is showing the highest value for Qj and A1 Modal Auxiliary Verb is showing the lowest value.

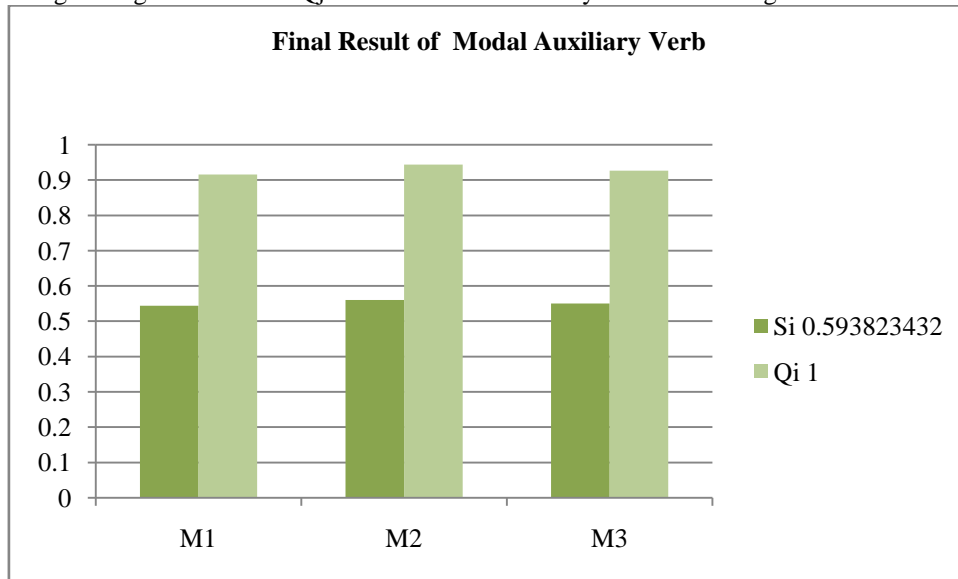


FIGURE 3. Final Result of Modal Auxiliary Verb

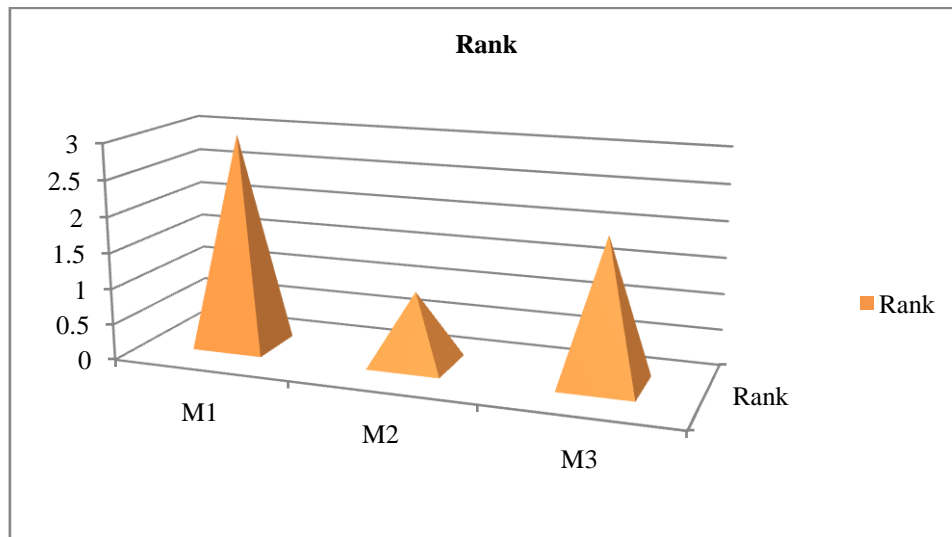


FIGURE 4. Show the Rank

Figure 4 Show the Rank FUZZY ARAS Modal Auxiliary Verb is A2 Modal Auxiliary Verb is got the first rank whereas is the A1 Modal Auxiliary Verb is having the Lowest rank.

Conclusion

The modal verb "hui" modifies the speech act performed in the sentence "Wǒ bǎohù nǐ (I protect you)" whose tense is predicated in present reality. By adding the modal verb "hui", a possible path along the time axis is projected from the present reality region to the unreal region. The action process of "protecting" is projected into the future by the modal verb "hui". The modal verb "hui" allows us to participate in conceptual cognition, changing from the reality in "Wǒ bǎohù nǐ (I protect you)" to the potential reality in "Wǒ huì bǎohù nǐ (I will protect you)" of the three recommended textbooks, thereby helping educators identify specific strengths and weaknesses in the textbooks already in use. FUZZY ARAS is multi-criteria is a decision-making system consisting of This is in recent years Proven effective, the Additive Ratio Assessment (ARAS) method has been proposed simple comparisons Using Understood Complex world events solving a new approach[15]. Adhesion Ratio estimation (ARAS) technique is appropriate Can be attitude. Contradictory Complicated with standards to resolve instances of domains It relies on the idea that can the use of easy relative evaluation, and instead gives the opportunity that IVIF numbers produce a greater adequate version for fixing technique Comes from energy, a unique Primary based IVIF MCDM approach Fuzzy ARAS (Additive Ratio Assessment) analysis using Modal Auxiliary Verb1, Modal Auxiliary Verb 2, Modal Auxiliary Verb 3 Alternative value and shall, should, can, could Evaluation Parameters in value. A2 Modal Auxiliary Verb is got the first rank whereas is the A1 Modal Auxiliary Verb is having the Lowest rank.

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