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Research paper

Ethical decision support system based on hermeneutic view focus on social justice

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Abstract

Truth and justice can not be separated from the substance and purpose of the law. Law in the sense of right and just is a concept to be con-sidered. Only through a fair legal system and the right that people will be able to live peacefully toward a physical and spiritual wellbeing. The role of computer science is to produce a decision support system to determine whether a person has behaved ethically especially in terms of the rules of truth and justice from a hermeneutic point of view using decision support systems. The decision support system will be designed using the Analytical Hierarchy Process (AHP) method. The results of this study are expected to facilitate in the determination of human behavior in terms of truth and justice.

Keywords: *Truth and Justice; Computer Science; Decision Support System; Analytical Hierarchy Process.*

1. Introduction

Truth and justice are an intrinsic value in human or human life, as values, which become the spiritual function of man, meaning human nature or human dignity always try to embrace a truth and justice If man understands and understands the truth, his nature it is also encouraged to carry out the truth. Justice can be interpreted as goodness, virtue and truth, which is a moral obligation that binds the conscience between members of one society to another. Justice as a value that is the goal agreed upon by members of the community and cultivated achievement, by bringing the various norms for the sake of justice itself. Another meaning of justice is as a result or a decision derived from the application or enforcement of the law, which leads to a reality. Justice is also defined as the ideal element, ie as a goal or an idea contained in all existing legal provisions.

Truth as the scope and object of human thought that has long been a human investigation. Humans throughout the history of his culture constantly investigate continuously what is the essence of truth ?. Is truth objective, fixed and practical? Or is the truth subjective, fluid and theoretical simply? How does man understand the truth? and what is the truth to human life? How useful is that for the physical and the spiritual man? And why are humans encouraged or eager to seek and understand the nature of that truth?[1]. According to [2] that the approaches to law and justice system can be implemented using tools and models derived from strategic management. One of the tools and models is Analytical Hierarchy Process (AHP) [3] [4]. Another research of [5], the implementation of information technology [6]–[9] can help in the examination of the rule of law and justice. But, in the implementation of Decision Support System, we must be carefull in the result of the classification of the knowledge especially if the the result has the imbalance problem and must keep attention in diversity problem[10][11]. The benchmarking process is one of the process to ensure that the result of Decision Support System is suitable with the problem and will get the most efficient result [12]–[20] Philosophy as hermeneutics is a justified concept, especially with regard to defining the concept theme of the world of the text and the self-understanding, the reflection acting as a force, not only over the unfamiliar, but also on the self as subject matter of knowledge, creation and value acts [14]. The role of computer science is to produce a decision support system to determine whether a person has behaved ethically especially in terms of the rules of truth and justice from a hermeneutic point of view by using decision support systems. The decision support system will be designed using the Analytical Hierarchy Process (AHP) method.

2. Related works

Each text can be characterized by criteria such as structured work, as a purpose, as a reference, and intended for an unlimited audience that called hermeneutic[14], [21]–[23]. Effective decision-making at strategic levels requires the correct identification of factors that can affect business in future time periods. Business environments of international companies consist of a number of determinants that have a stronger or weaker impact on management decisions. An ideal situation would be to include all of them as a decision-making process of variables, but such inflows would make our perceptions impossible, and in the end it was not possible to distinguish between important and unimportant variables [24], [25]. Mardani et al. (2016) [26] reviewed MCDM methods used in the transport sector and stated that out of 89 articles, 32 of the 32 industry sectors (about 36%) and 32 documents (25.8%) used the AHP as an empirical strategy.

3. Methodology

This article has produced a three-phase research methodology done to evaluate and select the implementation of truth and justice. Phase I identified the criteria and sub-criteria for the implementation of truth and justice and relevant initiatives through a comprehensive review of the literature. Then an Expert Panel (EP) was formed. Criteria and subcriteria for the implementation of Truth and Justice were concluded with a wide-ranging debate and with the assistance of the Indonesian Law Experts. In the second phase, the relative weightings of the realization of truth and justice were evaluated through the well-established AHP methodology. In Phase III, the alternative implementation of Truth and Justice was ranked using Language Variables.
The general architecture of the proposed method used is depicted in Fig. 1

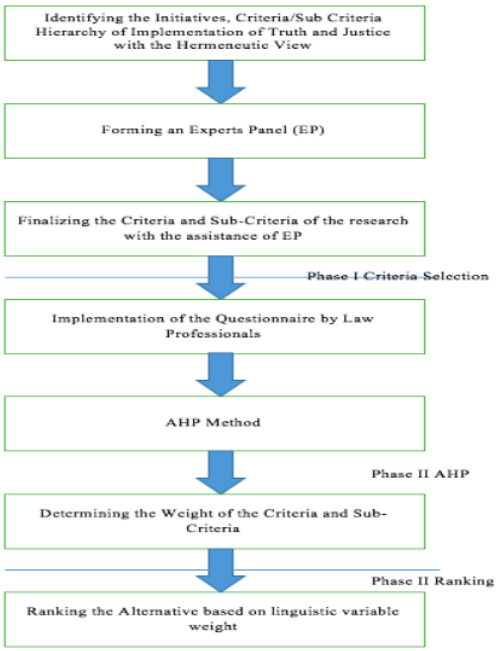

Fig. 1: The General Architecture.

3.1. Phase I - criteria selection

The decisive step in the MCDM settings is to determine relevancy criteria. The related existing literary and industrial experience creates cooperation in the selection process[27]. According to Norman [28], Criteria of Truth and Justice have the sub criteria: Desert, Needs, and Equaltiy.

3.2. Phase II-AHP

AHP initially defines a complex decision-making problem in the structured hierarchy of the current decision components (goal, decision criteria, and alternatives as shown in Figure 2). Then the pairs of contrast criteria and alternatives are reached. The relative importance of criteria within each level and alternative is determined by prioritization. Pair comparisons are based on a standard nine-level scale, which is shown in Table 3.

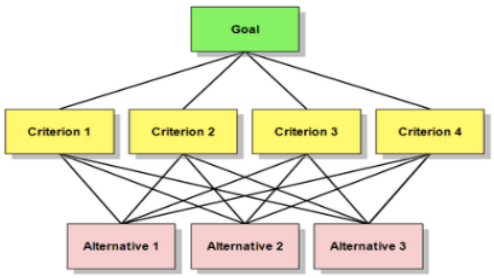

Fig. 2: Structure Hierarchy of AHP.

Table 1. Pairwise Comparison

Intensity of Importance	Definition
1	Equal Importance
3	Moderate Importance
5	Strong Importance
7	Very String Importance
9	Absolute Importance

The pairwise contrasting of n criteria is summarized in an nxn pairwise assessment matrix. The Matrix can be seen in Figure 3.

$$A = \begin{bmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & & a_{2n} \\ \vdots & & \ddots & \vdots \\ a_{n1} & a_{n2} & \cdots & a_{nn} \end{bmatrix}.$$

Fig. 3: Pairwise Assesment Matrix.

In this context based on the AHP hierarchy given in Figure 2, a_{ij} represent the numeric assestment of the pairwise comparison between criteria i and j. For example, if the criteria i has absolute importance over the criteria j, then $a_{ij} = 9$, and if conversely $a_{ij} = 1/9$. The entries of the Matrix A follow the subsequent rules.

$$a_{ij} \neq 0, a_{ij} = 1, a_{ji} = \frac{1}{a_{ij}} \quad (1)$$

The next step in the AHP process is to normalize and obtain the appropriate masses of each a matrix by dividing the column items by the corresponding totals. The principal eigenvector w concurrent to the largest eigenvalue λ_{max} of matrix A determines the precedence of the elements:

$$Aw = \lambda_{max} w \quad (2)$$

The final step in AHP requires a consistency analysis because the high level of AHP results is largely dependent on the consistency of pairwise comparison judgments. Consistency analysis is done in two steps. Initially, the Consistency Index (CI)

$$CI = \frac{\lambda_{max} - n}{n-1} \quad (3)$$

Then, the final consistency ratio (CR) is obtained from

$$CR = \frac{CI}{RI} \quad (4)$$

Using CR is extremely important because it indicates the consistency of pairwise evaluations. In the existing literature, 0.1 is the upper limit of CR.

3.3. Phase III - ranking

Ranking The Implementation of Trust and Justice require the use of weights obtained in Phase II and the experts' judgements regarding the available alternatives. This will be explained in more detail in the next section.

4. Experimental process

4.1. Define problem and goals

The problem to be discussed in this research is to determine the the best implementation of truth and justice

4.2. Determine alternatives and criteria

In this study there are 3 alternatives and 3 Criteria. The 3 criteria are: Desert, Needs, and Equality.

4.3. Determine the weight of each criterion

Assume that the pairwise comparison of each criteria can be seen in Table 2.

Table 2: Pairwise Comparison of Each Criteria

Criteria	Desert	Needs	Equality
Desert	1	2	4
Needs	0.5	1	2
Equality	0.25	0.5	1

According the AHP Process, the weight of each criteria are as follows.
The Weight of Desert = 0.571
The Weight of Needs = 0.285
The Weight of Equality = 0.142

4.4. Determine the weight of each alternative for each criteria

Assume that the pairwise comparison of each alternative for criteria Desert can be seen in Table 3.

Table 3: Pairwise Comparison of Each Alternative for Criteria Desert

Alternative	Alternative 1	Alternative 2	Alternative 3
Alternative 1	1	3	6
Alternative 2	1/3	1	3
Alternative 3	1/6	1/3	1

According the AHP Process, the weight of each alternative for criteria Desert are as follows.
The Weight of Desert = 0.654
The Weight of Needs = 0.249
The Weight of Equality = 0.095
Assume that the pairwise comparison of each alternative for criteria Needs can be seen in Table 4.

Table 4: Pairwise Comparison of Each Alternative for Criteria Needs

Alternative	Alternative 1	Alternative 2	Alternative 3
Alternative 1	1	5	2
Alternative 2	1/5	1	0.4
Alternative 3	1/2	1/0.4	1

According the AHP Process, the weight of each alternative for criteria Needs are as follows.
The Weight of Desert = 0.588
The Weight of Needs = 0.117
The Weight of Equality = 0.294
Assume that the pairwise comparison of each alternative for criteria Equaltiy can be seen in Table 5.

Table 5: Pairwise Comparison of Each Alternative for Criteria Equality

Alternative	Alternative 1	Alternative 2	Alternative 3
Alternative 1	1	4	2
Alternative 2	1/4	1	1/2
Alternative 3	1/2	2	1

According the AHP Process, the weight of each alternative for criteria Equality are as follows.
The Weight of Desert = 0.571
The Weight of Needs = 0.142
The Weight of Equality = 0.285

4.5. Determine the rank

The last stage of the assessment to determine the value of global priority of each alternative, based on predetermined criteria. The Global Priority Table can be seen in Table 6.

Criteria	Desert	Needs	Equality	Global Priority
Weight	0.571	0.285	0.142	
Alternative 1	0.654	0.588	0.571	0.6238
Alternative 2	0.249	0.117	0.142	0.1967
Alternative 4	0.095	0.294	0.285	0.1793

According to Global Priority, we can see that Alternative 1 is the best in the implementation of Truth and Justice on the Hermeneutic View

5. Result and discussion

Based on the results of the research it can be seen that can be used in etical decision making to determine the best alternative in implementation of Truth and Justice on Hermeneutic View. Future development should be developed to determine criteria weighting in the Hesitant Condition.

6. Conclusion

The conclusion of this research are as follows. First, Truth and justice can not be separated from the substance and purpose of law. Law in the sense of right and justice is a concept that everyone desires. Second, it is confirmed that Etical Decision Support System can determine whether a person has behaved ethically especially in terms of the rules of truth and justice from a hermeneutic point of view.

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