



Enhance Decision Support Systems Method of Measure Student Levels and Attitude Cigarette Danger for Health Based on AHP

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ABSTRACT

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This paper described about study determining the criteria in determining criteria and alternatives for student level knowledge of the dangers of smoking to health by the use of decision support systems so that it is easier to determine criteria by using selection methods that make it easy to obtain information on a system built to manage data- data so as to make it easy for users and can produce clear and accurate information and can produce reports that are expected to help teachers, and principals in making and making the right decisions later.

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1. Introduction

The very rapid development of information technology in this globalization era enables decision making and presentation of information to be carried out quickly and accurately. By having good and reliable information technology, it will certainly produce quality information that is in accordance with the current development of computer users.

To analyze level and attitude of knowledge about the dangers of smoking to health in determining the extent to which information is carried out with several steps use of super desicion software The results of this study are in the form of criteria and alternatives that will determine information about the dangers of smoking for health. The process of determining criteria and alternatives starts from the establishment of a Decision System which is preliminary data from several attributes, then is formed using the superdesicion software by using criteria and alternatives in facilitating the determination of the final outcome which will become knowledge [1]

Now the Decision Support System (DSS) can apply alternative choices to decision making. Whatever and however the process is, With AHP, a person can organize opinions and intuition by means of logic using hierarchy and include judgments based on understanding and experience. This approach can accept uncertainty factors and allow change so individuals and groups can face all the problems the resulting answers can be tested for sensitivity change judgment. Problems are solved into smaller constituents so that decision makers only make simpler comparative judgments through the hierarchy to arrive at all priority priorities for action. The advantages of AHP compared to the others are due to the existence of hierarchical structures as a consequence of the selected criteria to the most detailed sub-criteria. This model can process qualitative and quantitative data, so the complexity of the problems that surround us can be detected properly by this AHP model. In addition, AHP has the ability to solve multi-objective and multi-criteria problems based on comparing the preferences of each element in the hierarchy. So this model is a comprehensive decision making model. The ability of the AHP method used here is in consistency analysis and sensitivity analysis. Consistency analysis is aimed at the priority hierarchy that is built. While the sensitivity analysis is intended to see the effect of each element on the priority hierarchy that is built. Research using the AHP method has been carried out such as: [2] Applying the Analytical Hierarchy Process for Student Profile Analysis of the results of the study reveals that AHP as a multi-criteria technique is an attractive palliative solution if the data is insufficient and can be identified and grouped which contributes to an increase in student failure and dropout rates. [3] His research found that there is an urgent need for any industrial problem that applies the AHP method because, among twenty-two cases in various industries, AHP is combined with other methods to improve the results. Otherwise, research results will be inconsistent. [4] Using PCA principal component analysis To increase the performance evaluation index to be more accurate in evaluations to cut the number of evaluation indexes, and because PCA itself has problems using only data



distribution without considering domain-related knowledge, and the Analytic Hierarchy Process (AHP) to rank indexes through knowledge related to the expert domain.

2. Method Of Research

Object of the research is a target to get data according the opinion of research object, the object of this study is a system analysis carried out aimed at knowing information about the dangers of smoking for health in 29 State Junior High School. a system development. From the results of research and data collection based on a questionnaire in SMP Negeri 29 Padang Jl Kurao Pagang Kec. Nanggalo City of Padang. In processing this data there are several criteria that will be used to find out information about the behavior and attitudes of students the dangers of smoking to health. In order to assess and analyze Based on the Results of Processing Questionnaire obtained in a number of assessment components such as: 1. Student Knowledge of the Dangers of Cigarettes (Max 50%) 2. Level of Youth Knowledge about the Risk of Smoking (Max 30%) 3. Effects of smoking on health (max. 20%) In the assessment there are Criteria of the assessment component based on Student Knowledge of Cigarette Dangers can be seen in table 1

TABLE 1.

DISTRIBUTION OF RESPONDENTS BASED ON STUDENTS' KNOWLEDGE OF DANGERS CIGARETTES

Student Knowledge of the Dangers of Cigarettes	Amount/ Peoples	Percentage
Good	50	60,5 %
Enough	36	39,3 %
Less	4	1,2 %
Total	90	100 %

The criteria of the assessment component based on the level of knowledge of adolescents about the risk of smoking can be seen in table 2.

TABLE 2.

Distribution of Respondents by Level of Youth Knowledge About the Risk of Smoking

Student Knowledge of the Dangers of Cigarettes	Amount/ Peoples	Percentage
Good	59	40 %
Enough	26	40%
Less	5	20 %
Total	90	100

2.1 Pairwise Comparison Matrix Between Goal and Criteria

Generally, for pairwise matrix comparisons number 1 can be placed diagonally in the upper left corner to the lower right corner, because it means that the comparison of the same two things is 1 or equally preferred

TABLE 3

PAIRWISE COMPARISON MATRIX.

	Student Knowledge Of Dangerous Cigarette	Youth Knowledge Levels About Smoking Risk	Cigarettes For Health
Student Knowledge Of Dangerous Cigarette	1	4/1	7/1
Youth Knowledge Levels About Smoking Risk	1/4	1	1/2
Cigarettes For Health	1/7	2/1	1

A next step starts to calculate the evaluation for the Goal and criteria. To simplify the calculation of numbers in the pairwise comparison matrix it is converted in decimal form.



1,000	4,000	7,000	1,000	4,000	7,000	1,000	22,000	16,000	41,000	0,736
0,250	1,000	0,500	0,250	1,000	0,500	0,571	1,000	2,750	6,321	0,114
0,143	2,000	1,000	0,143	2,000	1,000	0,786	4,571	3,000	8,357	0,150
									35,679	1,000
3,000	22,000	16,000	3,000	22,000	16,000	34,143	205,143	156,500	395,786	0,723
0,571	1,000	2,750	0,571	1,000	2,750	5,589	34,143	25,643	65,375	0,119
0,786	4,571	3,000	0,786	4,571	3,000	7,327	44,714	34,143	86,184	0,157
									547,344	1,000
34,143	205,143	156,500	34,143	205,143	156,500	3458,939	22006,112	15947,163	40412,214	0,724
5,589	34,143	25,643	5,589	34,143	25,643	569,542	3458,939	2625,764	6654,244	0,119
7,327	44,714	34,143	7,327	44,714	34,143	750,218	4556,132	3458,939	8765,489	0,157
									55831,948	1,000
58,939	21006,112	15947,163	3458,939	21006,112	15947,163	35891964,705	217978288,393	165477616,711	419347969,810	0,724
69,542	3458,939	2625,764	569,542	3458,939	2625,764	5909914,883	35891964,705	27247286,049	69049185,637	0,119
90,218	4556,132	3458,939	750,218	4556,132	3458,939	7784938,871	47278119,060	35891964,705	90964222,637	0,157
									579351258,084	1,000

Fig 1. Matriks Of Algorithm

The next step starts to calculate the evaluation for the Goal and criteria. To simplify the calculation of numbers in the pairwise comparison matrix it is converted in decimal form

3. Analyze and Results

The steps in data processing are carried out as follows: Activate the Super Decision software that has been installed on the computer with the following display:



Fig 2. Super Decision Initial Display

To create a node in a cluster by right-clicking on the cluster after that select create node in cluster and select create another to create other nodes. After all nodes are formed then click save

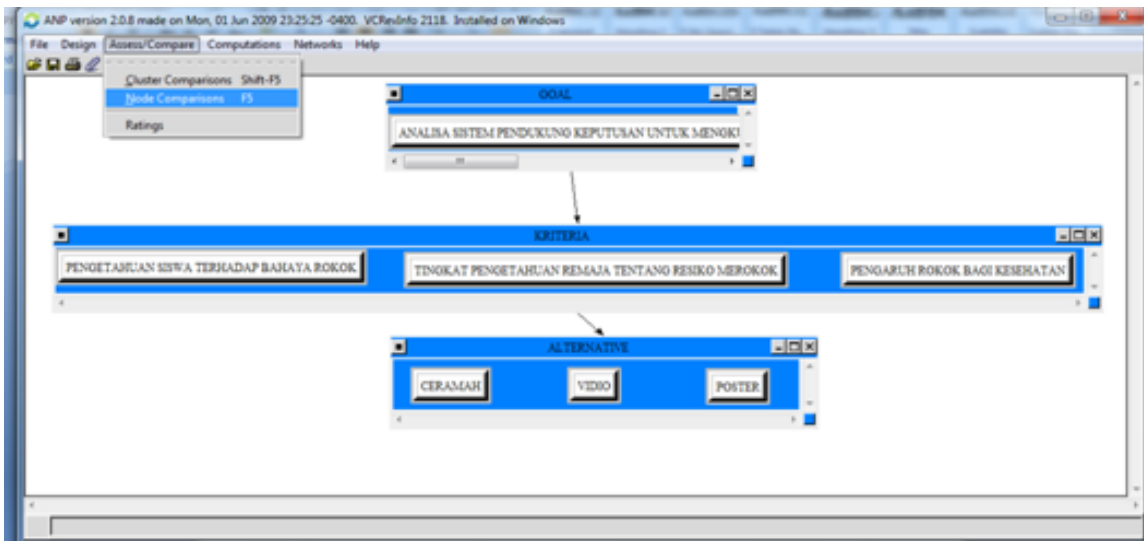


Fig 3 Creating a Node in a Cluster

Arranging clusters is shown as in the following process, by clicking on a new title and dragging as desired. To connect each element between goals and criteria by means of a node named destination that becomes the parent or source node. In the list that appears, then left-click on the criterion node to select a connection, there are 2 choices for carrying out this process: a. To connect using the "Make Connection" icon, left-click on the icon to press, display the connection mode, then left-click on the source node and right-click on each connected node. To disable the connection mode, right-click the repeat process icon to suppress the process. b. To disconnect, click left on the node and right click on one of the nodes.

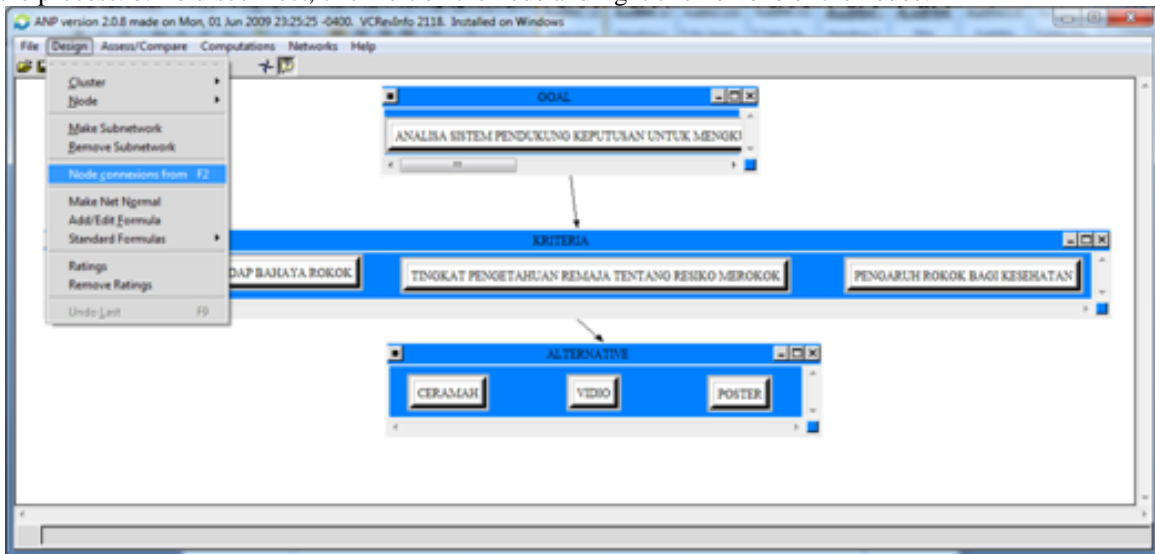


Fig 4. Connecting Each Cluster

After all values have been entered, the next step is the process to compute the matrix. Namely by clicking on the menu computations synthesise.

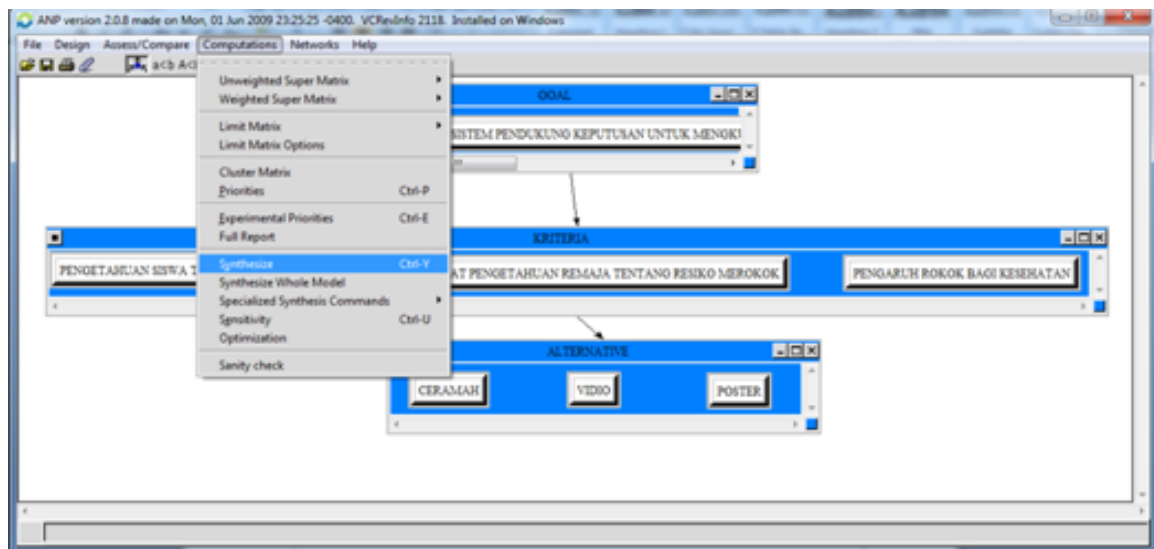


Fig 5. Overall Priority Calculation Results

Alternative Rankings

Graphic	Alternatives	Total	Normal	Ideal	Ranking
	CERAMAH	0.2321	0.4642	1.0000	1
	POSTER	0.1281	0.2562	0.5520	3
	VIDIO	0.1398	0.2796	0.6024	2

Fig 6. Full Analysis of All Reports

The results obtained in Fig 6 are the largest overall priority chosen by namely: Lecture, Video, and Poster

4. Conclusion

Based on the results of the analysis carried out at Padang 29 Junior High School, it can be concluded as follows:

- The decision making process is more optimal by using a Decision Support System by applying the Analytical Hierarchy Process (AHP) method because it can facilitate the process of Decision Support System Analysis to Measure Students' Knowledge and Attitudes About the Dangers of Cigarettes for Health with information generated using the method Analytical Hierarchy Process (AHP).
- Decision Support Systems can provide benchmarks in determining the intensity of a variety of different interests and needs so that they can provide solutions or results that are more in accordance with the wishes of the decision maker.

5. References

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