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Selection of Malaysia School Youth Cadet Corps Leader by Using Analytical Hierarchy Process: A Case Study at SMK Ahmad Boestamam

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Abstract: This research is a case study to identify the best criteria that a person should have as the leader of Malaysia School Youth Cadet Corps (*Kadet Remaja Sekolah (KRS)*) at SMK Ahmad Boestamam, Sitiawan in order to select the most appropriate person to hold the position. The approach used in this study is Analytical Hierarchy Process (AHP) which include pairwise comparison to compare the criteria and also the candidates. There are four criteria namely charisma, interpersonal communication, personality and physical. Four candidates (1, 2, 3 and 4) are being considered in this study. Purposive sampling and questionnaires are used as instruments to obtain the data which are then analyzed by using the AHP method. The final output indicates that Candidate 1 has the highest score, followed by Candidate 2, Candidate 4 and Candidate 3. It shows that this method is very helpful in the multi-criteria decision making when there are several options available.

Keywords: Analytical Hierarchy Process, Criteria, Students's leadership, Leader selection, Pairwise comparison

INTRODUCTION

In an organization, a leader is the most important individual who act as a catalyst for an activity or program carried out by the organization. Without a leader, an organization will experience a malfunction, like a ship without a captain. Thus, a good leader selection is very important and necessary to meet the needs of an organization. According to [4], leadership is the key to the success of a team.

In Malaysia, there are associations and clubs in every school curriculum to expose students to the activities or programs other than teaching and learning process. In order to fill the demand towards a developed country, we need to prepare students with dynamic and quality and to have a balanced personality development in terms of JERI namely physical (*jasmani*), emotional (*emosi*), spiritual (*rohani*) and intellectual (*intelek*).

One of the most popular school associations in Malaysia is Malaysia School Youth Cadet Corps or in Malay, it is called as Kadet Remaja Sekolah (KRS). A warrant officer is the highest rank that can be held by the KRS members and special conditions are required to be qualified and promoted as a Warrant. A qualified Warrant officer has to join KRS for at least three years and passed the Level 5 exam of the History of Islam, Fitness and Skills, First Aid, Spirituality (KRS Islam), Community Service, Culture, Environment and Entrepreneurship.

Commonly, the leader of KRS or normally referred to as Platoon Commander is selected among the association's members based on the highest rank held. This is because it meets the required criteria as the warrant officer had already passed the necessary tests. However, not all schools have KRS members with the rank of warrant officer like in SMK Ahmad Boestamam where this study is done. In order to solve the problem, we

propose the Analytical Hierarchy Process (AHP) as a leader selection method for KRS at the school as an alternative to the decision maker in the school to make decisions that are fair, equitable, transparent and quality based on the required criteria.

METHODOLOGY

The AHP is a mathematically based, multi-objective decision-making tool introduced by [6]. In this technique, the pairwise comparison method is used to rank order alternatives of a problem that are formulated and solved in hierarchical structure. Being simple and thorough in handling difficult real-life problems are the advantages of this technique. The main process of AHP are listed as follows [2]:

1. structure a problem with a model that shows the problem's key elements and their relationships.
2. elicit judgments that reflect knowledge, feelings or emotions.
3. represent those judgments with meaningful numbers.
4. use these numbers to calculate the priorities of the elements of the hierarchy.
5. synthesize these results to determine an overall outcome.
6. analyze sensitivity to changes in judgment.

For thorough reading on this technique, readers can refer to [6]. According to [1], the research design serves as a guide in a study to find clear answers to the questions of the study. This research study is a case study in order to select the leader of KRS at SMK Boestamam , Sitiawan. [4] states that the use of case studies in fact can help researchers to understand an issue or a complex object in detail by just using a small sample. The case studies also help researchers to understand a phenomenon in addition to the existing knowledge about the phenomenon and to see the relationship that exists between various objects, elements and issues in relation to the phenomenon implied. The first step in choosing the KRS leader is by listing all the criteria that are necessary in a leader. The second step is to list all the qualified candidates. This is then followed by the distribution of questionnaires to the decision makers. In the final step, all the obtained data and findings will be analyzed and concluded.

There are various criteria for a leader which are put forward by [3] as charismatic, decisive, has a deep interest in leadership, courage, integrity, wisdom, vision and planning, can communicate effectively, powerful, aggressive, initiative, ability to supervise, responsible, knowledgeable in business, can control the pressure, honest , mature and creative. However, among all of these criteria, we have modified and shortlisted the criteria according to the problem situation in SMK Ahmad Boestamam when making the KRS leader selection.

The first criterion is charisma in which includes features or sub-criteria such as self -confidence, wisdom with vision and good planning. This criterion can be seen based on the candidate courage to come forward and talk in public, academic achievement and also whether the candidate has a clear goal for the association or not. The second criterion considered is interpersonal communication which is communication between members. The aspects which are viewed and evaluated in this criterion is the ability to communicate effectively, and the ability to supervise. This criterion can be evaluated by decision makers based on the way a candidate converse with others. In addition to that, decision makers can also see whether the candidate is popular among the KRS members and has the skills and ability to control his subordinates. The next criterion is the personality which is a measurement to self-discipline, the cleanliness, honest and trustworthy.

Physical is the last criterion being considered in this study which includes sub-criteria such as voice, knowledge about marching orders, fit and healthy body. Decision makers can make a judgment based on the candidate's ability to lead the parade with a loud and clear voice and be able to demonstrate the correct movements. It can also be assessed by the health condition of a candidate who did not suffer any serious and dangerous disease. This criterion is required to be included as KRS is a cadet team that is very particular about physical fitness.

There are 12 respondents involved as decision makers where 6 of them are teacher counsellors of the association, KRS at SMK Boestamam and the rest of the respondents are 6 members of the association. These members of the association KRS are from 6 chairs, one for each platoon from Form 4 and Form 5 students. The method of sampling is called purposive sampling. This sampling is used as we need a sample that can meet the

needs of the decision makers who know and are clear about the responsibility that must be shouldered by a chief and leader.

Consistency verification has been performed in order to measure the degree of consistency among the pairwise comparisons by computing the consistency ratio (CR). This is due to the comparisons are performed through subjective judgments or personal, possible occurrence some of inconsistency. Thus, the verification is important and required to ensure that the judgement is consistent. A criterion is said to be consistent if its consistency ratio is less than or equals to 0.1 [6]. The results show all four criteria are consistent with the $CR_{charisma} = 0.08$, $CR_{communication} = 0.1$, $CR_{personality} = 0.03$ and $CR_{physical} = 0.03$. Hierarchical conclave KRS Association is as in Figure 1.

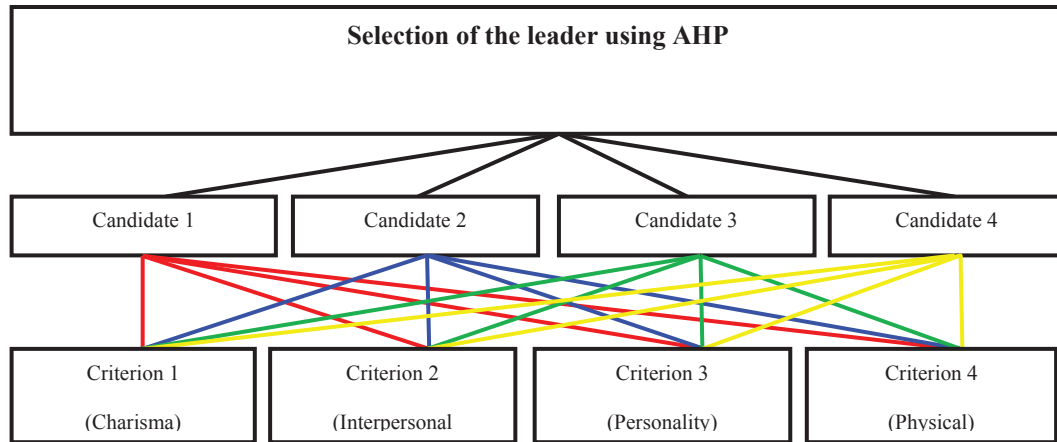


Figure 1: Hierarchical conclave KRS Association

RESEARCH OUTPUT

In this paper, the priority of each criterion to another criterion and that of any decision alternative to another alternative was compared by pairwise comparison matrixes. The results show that Criterion 2 (Interpersonal Communication) is the highest priority in selecting the leader of KRS. The second priority is Charisma, followed by Personality and Physical criteria as the third and fourth priorities.

Analysis regarding the pairwise comparisons between candidates against criteria shows that the Candidate 1 has the highest weighting for interpersonal communication, personality and physical criteria. While for the physical criteria, Candidate 4 obtained the highest weighting. After the calculations of the test for pairwise comparisons between the candidates and also between candidates are performed, then the score values that decide the best candidate are then calculated. The formula used in this calculation is:

$$A = M \times N$$

where:

A = score preference between candidates

M = matrix of weighting priority of candidates against criteria

N = matrix of the weighting of criteria

Based on the calculations, Candidate 1 gets the highest score, followed by the Candidates 2, 4 and 3. Thus, Candidate 1 will be elected as the leader for the KRS Association. With a relatively high score at 0.1992 shows that Candidate 1 is qualified to be elected as the best leader. The candidate also scored the most for three criteria including the criterion with the highest priority, namely interpersonal communication.

DISCUSSIONS AND PROBLEMS INVOLVED

The use of AHP in this study, which aims to make the selection of the leader for the KRS Association at SMK Boestamam, Sitiawan is very accurate and successful. The results indicate that interpersonal communication is the most important criterion in the selection of the head is acceptable in view based on the number of votes obtained. The final decision to choose Candidate 1 as the leader is appropriate. This is because the first candidate does not only gain the highest value for the candidate preference score, but also obtains the highest weighting in three criteria including interpersonal communication, the most priority criterion.

AHP is suitable to select the best choice for a multi decision criteria problem as each criterion will be compared accordingly. This method can also reduce the occurrence of problems when making a selection. Thus, the selection can be carried out smoothly. Acts of favouritism and lack of transparency during the selection can also be avoided and a leader who truly deserves the position will be chosen.

The selection of the leader among the candidates is appropriate because all of the four candidates have attended the required courses for KRS Association namely SAS. Therefore, all candidates are eligible for the election since they have learned a lot of knowledge regarding the association. The selection of respondents which are among the students is also found appropriate as the students know the candidates in person. With this approach of AHP as well, the decision makers strive to make decisions for pairwise comparisons quantitatively and qualitatively. The inconsistency of the subjective considerations can also be measured from the consistency of each of the considerations.

Throughout of the study, there are problems and constraints occurred. Prior to the selection of the candidates is made, we must first make a selection of the platoon leader which is time consuming. In addition, we also encounter problems when the questionnaire is conducted for both the research and also pilot test. This is because the respondents are difficult to give 100% cooperation, especially among teachers because they are busy with their daily work. Respondents are late to respond and answer the questionnaire sheet given to them. This led us to suspend the process of analyzing the data.

CONCLUSIONS AND SUGGESTIONS

We have successfully overcome the problems involved by distributing the platoons and select a platoon leader during the annual general meeting of KRS. This is done with the help of the teacher advisors of the association. The questionnaire is also answered and collected during the weekly meeting of the KRS association. The description of each section and line numbers pairwise comparison is also be conducted carefully during the meeting. Therefore, the analysis of the data can be done as quickly as possible. We have increased the number of decision makers in order to provide better results and more accurate as a small number of decision makers may not represent all the members of the association. It is also able to produce better values of the consistency ratio.

Other than that, questionnaire is thought to be not suitable to weight the physical criterion for the candidates. The weighting value can be determined by performing a physical examination session. Candidates will be required to lead and give marching orders to the platoons. This method is also suitable to avoid favoritism if any.

It can be concluded that the AHP technique is a technique that is simple and easy to be adopted by any decision makers especially if it involves the views and assessment of several selections at once. It is also flexible and easy in helping to set the priority in determining the selected alternatives.

By using the hierarchical structure of various levels against the goals, objectives, criteria, sub-criteria and alternatives; the judgment based on understanding, emotional and human view is also taken into account. This approach has been widely implemented as a method of analytical solution to the problems where qualitative and quantitative criteria are involved.

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