

HOW DIFFERENT ARE THE PERCEPTIONS OVER THE MAIN MOTIVATIONAL TOOLS IN MILITARY? AN ANALYTIC HIERARCHY PROCESS (AHP) APPROACH.

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In the Romanian military system, motivational rewards based on merits are precisely regulated and ranked as confined by the military order in which they are mentioned. The existing hierarchy of these main motivational rewards is partly inherited, partly harmonized with other international military partner organizations and it is implicitly assumed that decision makers are able to equidistantly evaluate the merits of their subordinates. Still, decision makers' personal, implicit perceptions over the importance and the effectiveness of the available rewards designed to enhance motivation among their subordinates can alter for good or for worse the efficiency of these motivational tools. This paper aims at quantifying the implicit perceptions of the decision makers in a military organization over four main motivational tools through the construction of a hierarchy based on an analytic hierarchy process approach whose final alternatives are constituted by the four motivational tools. A survey asking for pairwise comparison among criteria, sub criteria and alternatives, completed by the use of two numerical scale alternatives, led to priority vectors assessing the relative importance of the rewards considered. The findings on the perceived importance of the rewards might lead to further research, with a potential discussion on the design of the motivational tools or on a different approach to distributing the existent ones.

Key words: *decision making, analytic hierarchy processes, motivational theories, military.*

1. INTRODUCTION

Motivation is the way we convince others to do what we want or what they are supposed to do, influencing their morale and behavior. This interaction between the motivator and the subject is based simultaneously on the power or authority granted to the former to impose his/her will and on the latter's willingness to accept.

In order to achieve a goal, the motivator needs to use some tools which would induce the desired actions to the subject and, at the same time, would create an effect on the latter, proportional with the intensity of his desire. If we admit that, in

most circumstances, the motivator has a different goal, experience and background than his subordinate, than we might also acknowledge that their individual perception over actions or events and their emotional response to them might be different [1].

Military systems provide a controlled array of rewards to decision makers that they could use to motivate their subordinates, given their very clear authority to grant the rewards. Apart from this, there are no detailed recommendations on the precise reward that decision makers should use for a specific action, leaving room for personal interpretation based on individual perception. This proves

that, in fact, the rewarding system is a mix of settled rules and personal interpretation that could alter the intended efficiency of the motivational tools, for the better or for worse.

2. MILITARY MOTIVATIONAL TOOLS

Maslow's Hierarchy of Needs with its five stages shows the human beings' psychological needs during their lifetime, starting from the basic ones, up to self-fulfillment.



Figure 1. Maslow's Hierarchy Needs
Source: <http://chartdiagram.com/maslows-hierarchy-of-needs/>[2]

Within the military, the rewarding system should address as many of these stages as possible, if not all of them, to be an effective motivational tool.

Article 29 (3) of the Military Discipline Regulation, cited in Monitorul Oficial Part 1 no. 399 bis of July 2013 [3], lists the following formal military rewards: Thanks; Congratulations; Certificate of Merit; Quotation in Unit's Log; Decorations; Military Insignia and Awards; Engraved small arms; Bonuses in money or objects.

Using Maslow's hierarchy of needs, these incentives could be grouped as follows: Level 1 – Bonuses in money or objects; Level 3 – Thanks; Congratulations; Certificates of Merit; Quotation in Unit's Log; Level 4 – Engraved small arms Decorations,

Military Insignia and Awards.

A first observation is that, according to this classification, there are no incentives for level 2 – safety needs and level 5 – self-actualization. It could be said that while level 5 is the highest possible level that could be reached by an individual, level 2 is a basic need that requires to be fulfilled.

What is also interesting to notice is that according to the existing rules in which the rewards are offered, a battalion commander could use level 1 and 3 rewards, while a company or platoon commander could only use level 3 rewards. In other words, a battalion commander can motivate subordinates with money, as a short term reward (level 1), or he could use incentives to strengthen unit's cohesion (level 3).

As for level 4 rewards, Regiment, Brigade and Division Commanders could propose engraved small arms be awarded by Chiefs of Services, while the remaining could only be offered in accordance with the National Defense Ministry Order.



Figure 2. Military Motivational Tools and Maslow's Hierarchy

Although the regulation stipulates the authority granted to commanders at different management levels to grant rewards, there is no explicit direction which incentive to be awarded for

a specific action, leaving thus to the commanders' decision to choose among those available for them. Therefore, a rational deduction leads to the conclusion that the decision maker's perception plays an important role in making that choice.

The aim of this paper is to evaluate the relative rewards' importance as it is perceived by decision makers, using the Analytical Hierarchy Process method.

3. METHODOLOGY

Thomas Saaty [4] developed the Analytic Hierarchy Process (AHP) as a decision making method, using a structure of matrices to compare different criteria on a standard scale through computed priority vectors, whose values establish the magnitude of the selected alternatives.

In order to obtain this outcome, a hierarchy must be created. This includes categories and sub-categories which are compared two by two, in a so called "pairwise comparison", through a designed questionnaire filled in by a group of decision makers. Once completed, the answers turn into decision matrices and their eigenvalues and eigenvectors are calculated, revealing the numerical results associated with the perceived importance of the rewards.

Due to the implied items within the questionnaire derived from the number of rewards, two steps were performed: in the first run, the most important four perceived rewards were selected out of the total of eight; second run completed the research and offered the perceived order of the remaining rewards, with the hierarchy presented in Figure 3.

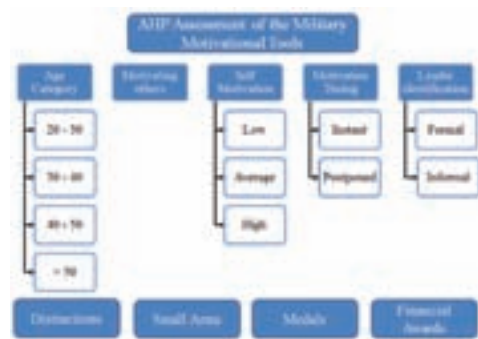


Figure 3. The Hierarchical Diagram

The criteria for the research were chosen from a less acknowledged perspective: the age of the decision makers; willingness of the decision makers to motivate others; self-motivation level of the decision makers; the time when the reward is awarded; and the correct identification of the leader.

As young officers have the same decision making responsibilities and offer rewards as the ones at the retirement age, it is important to understand if age influences their perception over the way they grant the rewards.

Another important consideration is the willingness of the decision makers to motivate others. Experience shows that different people relate to others in different ways, some of them expressing empathy, while others keeping coldness.

When rewarding, decision makers experience a disposition translated from the personal and working environment, impersonated as mood. How is our mood influencing our perception over the rewards and the way we make our choice?

From the timing perspective, some decision makers choose to award the rewards immediately, while others

choose to postpone the moment. From the decision makers' perspective, is this influencing their perception over the reward they choose?

In any organization there are well established empowered managers. It is also known that, behind the scene, there are influential individuals who are able to influence decisions. Is there any difference in decision makers' perspective, if the informal leaders are known and rewarded, instead of formal leaders?

After the criteria were set, the questionnaire was designed and a group of 17 decision makers from different echelons and with different ages filled in the answers individually. Their answers were translated into decision matrices and, through computations in a tailored Gauss program, and eigenvalues and eigenvectors for each decision maker were obtained.

4. NUMERICAL RESULTS

A number of 17 respondents, decision makers in some military organizations were asked to individually formulate pairwise their inclinations in terms of choice and intensity of preferences over the criteria, sub criteria and alternatives in the above formulated hierarchy. The synthesized priorities for the four alternatives were derived regardless the values, acceptable or not, for each of the the consistency indices of the decision matrices, as shown in Table 1.

For each respondent, the corresponding weight of importance was synthesized in accordance with the AHP standard procedure and reported on its associated line and on columns; for each reward were

computed the mean and the standard deviation for all respondents. Since every respondent is a decision maker, the standard deviation is interpreted as a measure of the degree of subjectivity in granting the correspondent reward. The soundness of the decision matrices derived as a result of the questionnaire and consequently, the validity of the final numerical answers is usually decided on the correspondent values for the consistency indices (CI) associated. The consistency indices for the derived decision matrices were very often unacceptably high. Therefore, a method for determining the closest consistent matrix was used and the algorithm indicated in Benitez & alii [5], proved to be the most promising one in terms of speed and accuracy of calculus.

For every respondent's decision matrix, the closest consistent matrix as in Benitez & alii (2011) was derived and, once again the aggregated priority vectors in the context of the above hierarchy were recalculated, as shown in Table 2.

Table no.1 Synthesized priorities for the alternatives as derived from the original decision matrices.

| Alternatives | Financial Awards | | | |
|---------------|------------------|--------------|-----------|-------------|
| | A1 | A2 | A3 | A4 |
| Respondent 1 | 0.2400 | 0.1700 | 0.1048 | 0.4784 |
| Respondent 2 | 0.2780 | 0.3314 | 0.1281 | 0.2814 |
| Respondent 3 | 0.3077 | 0.1068 | 0.1909 | 0.3986 |
| Respondent 4 | 0.0993 | 0.1333 | 0.2161 | 0.5514 |
| Respondent 5 | 0.2860 | 0.2823 | 0.3567 | 0.0750 |
| Respondent 6 | 0.2442 | 0.1108 | 0.1566 | 0.4884 |
| Respondent 7 | 0.3952 | 0.1893 | 0.1307 | 0.2848 |
| Respondent 8 | 0.1661 | 0.0768 | 0.2252 | 0.5320 |
| Respondent 9 | 0.1997 | 0.2536 | 0.2606 | 0.2881 |
| Respondent 10 | 0.1416 | 0.1402 | 0.0688 | 0.6494 |
| Respondent 11 | 0.2639 | 0.1275 | 0.0530 | 0.5557 |
| Respondent 12 | 0.0921 | 0.0571 | 0.1660 | 0.6848 |
| Respondent 13 | 0.0877 | 0.1926 | 0.2002 | 0.5194 |
| Respondent 14 | 0.1840 | 0.2322 | 0.3061 | 0.2877 |
| Respondent 15 | 0.0999 | 0.0356 | 0.2251 | 0.6494 |
| Respondent 16 | 0.0544 | 0.2107 | 0.2261 | 0.5088 |
| Respondent 17 | 0.1256 | 0.1622 | 0.2407 | 0.4715 |
| Mean | 0.19037081 | 0.164721161 | 0.1915133 | 0.452993377 |
| ST DEV | 0.095099323 | 0.0799359915 | 0.0882616 | 0.163109347 |

Table no.2 Synthesized priorities for the alternatives as derived from the closest decision matrices derived as in Benitez &alii (2011).

| Respondent | Criteria | | | |
|---------------|--------------|------------|-----------|------------------|
| | Distinctions | Small arms | Medals | Financial Awards |
| Alternatives | A1 | A2 | A3 | A4 |
| Respondent 1 | 0.2228 | 0.1526 | 0.1019 | 0.5224 |
| Respondent 2 | 0.2534 | 0.3240 | 0.1365 | 0.2860 |
| Respondent 3 | 0.2646 | 0.1083 | 0.2082 | 0.4191 |
| Respondent 4 | 0.1021 | 0.1345 | 0.2103 | 0.5531 |
| Respondent 5 | 0.3046 | 0.3027 | 0.3162 | 0.0766 |
| Respondent 6 | 0.3434 | 0.1102 | 0.1534 | 0.4000 |
| Respondent 7 | 0.3731 | 0.1723 | 0.1162 | 0.3384 |
| Respondent 8 | 0.1670 | 0.0772 | 0.2260 | 0.5297 |
| Respondent 9 | 0.1874 | 0.2225 | 0.1114 | 0.2787 |
| Respondent 10 | 0.1437 | 0.1423 | 0.0692 | 0.6468 |
| Respondent 11 | 0.2644 | 0.1282 | 0.0515 | 0.5538 |
| Respondent 12 | 0.0887 | 0.0556 | 0.1590 | 0.6967 |
| Respondent 13 | 0.0890 | 0.1811 | 0.2051 | 0.5249 |
| Respondent 14 | 0.1897 | 0.2246 | 0.3005 | 0.2862 |
| Respondent 15 | 0.0851 | 0.0357 | 0.2146 | 0.6646 |
| Respondent 16 | 0.0954 | 0.2139 | 0.2287 | 0.5020 |
| Respondent 17 | 0.1275 | 0.1654 | 0.2421 | 0.4649 |
| Mean | 0.18581523 | 0.16177876 | 0.1915865 | 0.46881955 |
| ST DEV | 0.08992144 | 0.07970562 | 0.0795366 | 0.16253643 |

What it can instantly be noticed by a comparative look at the two tables, is the fact there are no significant differences between the two estimates for the final alternatives, regardless the consistency of the involved decision matrices. This fact is due to the method applied to improve the consistency index, in correlation to the particular consistency indexes corresponding to the original decision matrices.

Yet, maybe the most interesting fact is that at high stakes, there is a high degree of subjectivity. To put it differently that means not only the highest value in the priority vectors, but also the highest standard deviation corresponding to the fourth alternative – financial rewards.

5. CONCLUSIONS

Designing a set of efficient motivational tools is often done by keeping in mind the essentials motivational theories, as well as the particular restrictions faced by the organization of interest. Although conceived and listed in an ascending, uniform order on the scale of the

desired motivation, the implicit perceptions of the individuals over these explicit motivational tools are sometimes disproportionate.

This paper intends to quantify the way decision makers perceive the importance of the rewards within a given rewarding system. A hierarchy was designed, with selected criteria and sub-criteria, having as alternatives the four main motivational rewards, determined through a prior similar process.

The pairwise comparisons were performed by a group of 17 experienced decision makers. Regardless the technical aspects connected with the consistency indices associated to the decision matrices aspect, the joint usage of the original decision matrices, as well as the improved CI computation version, revealed a disproportionate importance granted to financial rewards, in comparison to the other ones, followed by decorations, while getting engraved military small arms seems to be not so much appealing.

In other words, using the given criteria and sub-criteria, only the rewards of level 1 and level 4 motivate, which could lead to the conclusion that level 3 rewards, translated into team work, friendship and unit pride, are not perceived as attractive .

Nevertheless, it is very important for decision makers to assess the perceived importance of the existing rewards and understand their real practicality.

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