THE ELIMINATION OF SELECTED BARRIERS IN THE DECISION MAKING PROCESS

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Abstract

The article presents the partial conclusions of the research *Solving Unstructured Decision-Making Problems in the Ministry of Defence of the Czech Republic*. The research was conducted in the Ministry of Defence of the Czech Republic in the form of a questionnaire survey and semi-structured interviews. The respondents were employees of the ministry working at all managerial levels. The subject of research was the issue of effective problem-solving in the Ministry of Defence. The aim of this article is to identify the key barriers to effective decision-making and to propose general principles to eliminate these barriers.

Keywords

Decision-making, decision-making process, critical factors in decision-making, evaluating barriers to decision-making process, elimination of barriers, problem-solving

Introduction

Decision-making is an integral part of people's personal and professional lives. The purpose of the process is to solve a certain problem by selecting from two or more solution variants. The process of selection and the quality of decision-making depends on many factors, which are the focus of this paper. Here we explore the main factors influencing the decision-making of commanders in the Ministry of Defence and Armed Forces of the Czech Republic.

This paper summarizes the partial results of empirical research which investigates the issue of solving unstructured decision-making problems and the use of methods, tools and heuristic techniques in their resolution in the Ministry of Defence of the Czech Republic (implemented within the project for the development of the organization). The main purpose of the research was to increase the quality of decision-making and preparation of military professionals in solving unstructured decision problems. The main goals of the research were: (1) To process the methods and heuristics useful in selected stages of the process of unstructured decision problems solving, (2) to identify and assess the barriers of unstructured problems solving by rational managers, commanders and staffs members, (3) to verify the methodology of problem solving in operations and tactical activities. The objective of this article is based on goal no. 2 of the research and its purpose is to identify the possible solutions overcoming the discovered decision making barriers. Thus the object of this paper are not the unstructured decision making problems in particular, but the ways (methods) of barriers overcoming.

The respondents were employees from the Ministry of Defence of the Czech Republic, with 137 people being questioned. The research examined what types of unstructured problems are being solved, what barriers the problem solvers encounter, what methods they use, what

are the factors of and barriers to decision-making that are considered significant for effective decision-making in the Ministry of Defence sector, and what phases of the process of solving decision-making problems are implemented. Lastly, the use of the respondents' intuition was examined in terms of the extent of its engagement and reason for its use (lack of time, information, knowledge, etc.). The research was conducted between June and October 2012 and was supplemented by a collection of qualitative data using a method of semi-structured interviews in 2015.

Problem formulation

One of the objectives of the questionnaire inquiry was to identify the most common obstacles and barriers to effective decision-making and rational solutions to decision-making problems. A further aim was to reveal the most common problems associated with the implementation of the decision-making process and to map their subsequent interconnection with the identified barriers (obstacles) to decision-making.

In relation to the barriers to the decision-making process, this paper provides answers to the following research questions: What obstacles and barriers are perceived as significantly hindering effective solutions to unstructured problems and why? What principles, methods and tools can be designed to remove these barriers?

Theoretical basis

Problem-solving and decision-making should be understood as part of a process of addressing problems (usually called the decision-making process). The decision-making process is a sequence of steps that people go through when deciding, whether it be consciously or unconsciously. Rational decision making process is based on logical steps which reflect the economic effect, thus the standardized methods are used (Moorhead and Griffin, 2012). This process involves the identification and analysis of the problem, gathering data and information about the problem, setting goals, limiting and evaluating criteria, generating possible solution variants, choosing optimal variants, and implementing and monitoring them (Fotr, Švecová, 2010; Grasseová, 2013). The quality of decisions and decision-making is influenced by many factors, which can be divided into external and internal. It is also possible that the decision-making factors are supported by aspects related to the personality of the decision-maker, the conditions for decision-making (set by the organizational environment), and the specifics of the actual decision-making problem.

The decision-making problem is perceived as the difference between the desired state (standard, norm or plan) (Evans, 1991) of certain components surrounding the decision maker and the actual state which is accompanied by dissatisfaction, tension and frustration. The problems are characterized by varying degrees of urgency and severity, from the banal to the existential. The same is true for decision-making in organizations (Grasseová et al., 2013; Donnelly, Gibson, Ivanchevich, 2011). In order to obtain an appropriate decision making outcome, there is a necessity of working on the appropriate, significant decision-making problems (Hammond, Keeney and Raiffa, 1999). A decision-making process is in military environment understood as a set of procedures and activities of commanders and staffs whose outcome is the choice of the best way of a task accomplishment from among more options, which are executable under a given situation (Štábní práce v operacích, 2007). The barriers to decision-making then repre-

sent a series of obstacles to the rational course of the decision-making process and the required quality of decisions (Grasseová et al., 2013).

For the unstructured decision problems is typical non-standardized definition of the problem (Veselý, 2009), the presence of numerous decision-makers, many factors affecting the problem (Mingers and Rosenhead, 2004) and large number of assessment criteria and solution variants (Grasseová. 2013). Solving a particular decision-making problem is always influenced by the personal characteristics of the decision maker. Three primary aspects of the ability to solve complex unstructured problems can be considered to be prior knowledge of the given field, previous experience with solving similar problems and cognitive abilities (Jonassen, 2011).

- Previous experience of decision-makers with solving similar problems – previous experience can make the decision-making easier for the decision-maker. Of course, on the other hand, the decision-maker may, due to their previous experience, tend to conservatively opt for those solutions that have proven to be successful in the past and which, over time, may not be as effective (Robertson, 2001).
- Cognitive skills – e.g. intelligence, perception, convergent and divergent thinking, analytical skills, memory capacity and so on (Jones, 1995).
- Sufficient theoretical knowledge of the manager and knowledge of appropriate methods in solving a decision-making problem.

The decision-making is also influenced by the attributes of a particular decision-making problem. These may relate to aspects such as the sufficiency of information, the structuredness of the problem, which facilitates a better understanding of the individual parts of the decision-making problem and the relationships and connections between them, and, lastly, the clear task of the problem (Jones, 1995; Robertson, 2001; Simon, 2000).

Methodology

This research aims to identify important factors influencing decision-making and to reveal the barriers to effective decision-making in the environment of a particular organization, the Ministry of Defence of the Czech Republic. Certain aspects were investigated whose existence is key to proper decision-making by senior staff in departments of the Ministry of Defence of the Czech Republic.

The objective is part of a larger survey, which aims to discover the decision-making characteristics of employees at the Ministry of Defence. In the area of factors (barriers) in decision-making, attention was devoted exclusively to an assessment of the importance of chosen aspects, particularly factors of an external nature (the decision-making problem and the conditions for decision-making). Internal factors (psychological processes such as using heuristic techniques and diagrams, or the projection of emotions into decision-making) were not studied because they are very difficult to assess using a structured questionnaire.

Potential negative factors in decision-making were identified by brainstorming, in which part of the research team participated. In addition, information was used that had been gathered at professional conferences and during problem-solving with case studies on professional courses. The suggestions obtained were subsequently modified and evaluated in terms of content similarities and level of detail. Thus a list was obtained, itemizing the potentially significant factors in the decision-making process of a commander, and also the barriers that decision-makers within the Ministry of Defence can be expected to come up against when

solving problems. In identifying barriers to decision-making in the Ministry of Defence, attention was focused primarily on the barriers from the side of the organization.

Among other things, respondents in the survey questionnaire were asked about the decision-making problems they had solved over the previous five years. They were also asked about the barriers that impeded effective decision-making and about the methods and tools that they use in their decision-making process. The questionnaire posed a question which examined how strongly the commanders themselves perceived the existence of individual barriers: *Which obstacles impeded you most often in the rational solving of the problem(s) mentioned by you in question no. 1?* The respondents were able to indicate any number of the listed barriers, based on the above-mentioned factors of effective decision-making (lack of time/information, unclear identification of the problem, lack of experience, lack of competent personnel, their unreliability or irresponsibility, lack of theoretical knowledge, etc.)

In the survey questionnaire there were further examined the types of decision-making problems that respondents had solved in the previous five years. The question posed in the questionnaire, which examined the individual decision-making problems, was: *Which of the listed problems have you solved in the past 5 years (see column A)?* The respondents could again indicate any number of the listed decision-making problems (change in organizational structure, formulating a plan, working with materials for a plan, document processing, the preparation and implementation of Trainings, preparation and implementation of foreign missions, the implementation of adopted decisions, international obligations, legal requirements, operations and tasks that lack allocated resources, and formulating a method, a permanent operational procedure, an order or another internal regulation).

It was a case of semi-closed questions with the possibility of an open answer that was listed as 'Other'. The variables obtained can be considered as nominal and were evaluated using standard tools of descriptive statistics. With a view to the stated objectives, it was desirable to determine the absolute and relative frequencies of the studied phenomena and the relationships between the solved problems, perceived barriers and methods used in the decision-making.

The chosen sample was compiled using a method of focused selection in which the respondents were selected according to set criteria with regard to their position in the hierarchy of the Ministry of Defence of the Czech Republic and their willingness to participate in the survey. From the hierarchical viewpoint, the necessary criterion was for the respondent to be in a managerial position, that is to say a commander (a statutory decision-maker) or a manager of a department in the Ministry of Defence. All the respondents who met the criteria were contacted and none of them refused to participate. A total number of 137 questionnaires were obtained, of which two were excluded because of missing data. Of the remaining 135 respondents, at the time of research, 38 were working on a strategic level and 97 on an operational level of command at the Ministry of Defence and Armed Forces of the Czech Republic. The most frequent rank among the respondents is Major (35%), followed by Lieutenant Colonel (19%) and Captain (15%). The representation of other ranks was below 10%. The average length of service was 18 years, with an upper quartile of 24 years and a lower quartile of 11 years. 38% of the respondents worked at battalion level, 33% at brigade level, 20% at the Ministry of Defence and 9% in the remaining units.

Identification of decision-making problems and barriers

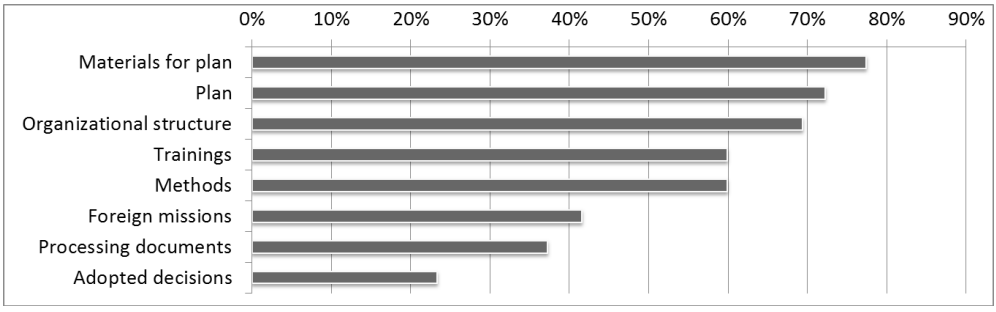
Firstly, the results of the research into the most frequently solved decision-making problems encountered by respondents in their professional experience are presented. This is followed by a list of barriers to decision-making that impeded the decision-makers in finding effective solutions to the decision-making problems. The conclusion introduces a mutual comparison of the above outcomes. Both the lists of problems and barriers were based on previous researches and experiences of the research team and literature review. The research does not handle problems which are not present in the Department of Defence and such decision making problems were omitted.

The summarized results of the questionnaire survey of the most frequently solved individual decision-making problems that respondents dealt with over the previous five years are presented in Figure 1. The statistical characteristics of the above-mentioned part of the research are presented in Table 1.

Problem	C	B	A	E	H	F	D	G
Number of respondents	106	99	95	82	82	57	51	32
Proportion	77%	72%	69%	60%	60%	42%	37%	23%

Source: own research

Legend: A – Change in organizational structure; B – Formulating a plan; C – Working with materials for a plan; D – Processing documents; E – Preparation and implementation of Trainings; F – Preparation and implementation of foreign missions, G – Implementation of adopted decisions, international obligations, legal requirements, operations, and tasks that lack allocated resources; H – Formulating a method, a permanent operational procedure, an order or another internal regulation.



Source: own research

Table 1: Most frequently solved decision-making problems

Figure 1 and Table 1 show that the most frequently solved decision-making problems cited by employees of departments of the Ministry of Defence are regarding working with materials for a plan, formulating a plan and addressing changes in the organizational structure of the organization. These were encountered by almost three quarters of respondents when dealing with decision-making problems.

Significant decision-making problems that are equally represented by the majority of respondents are with regard to the preparation and implementation of Trainings and formulating a method, a permanent operational procedure, an order or another internal regulation.

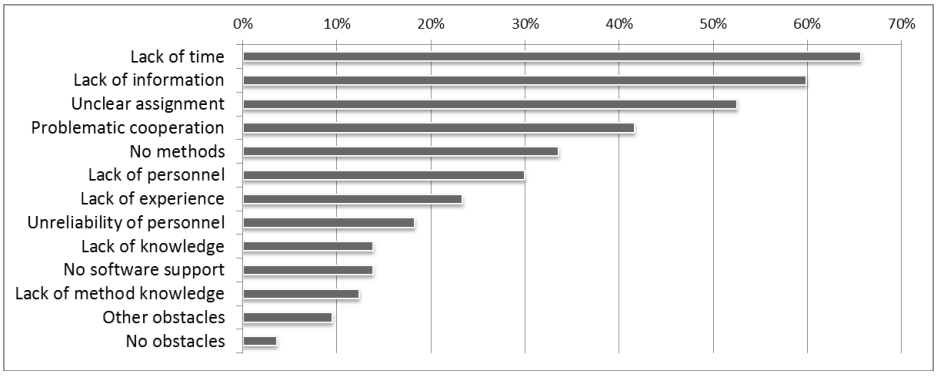
Other decision-making problems are cited less frequently. Over a quarter of respondents stated that in the previous five years in their job they had encountered problems related to the preparation and implementation of foreign missions or problems associated with processing documents. These problems were cited by 57 and 51 respondents respectively. Just under a quarter of respondents stated that, with regard to the above-mentioned decision-making problems, they had encountered issues relating to the implementation of adopted decisions, international obligations, legal requirements, operations, and tasks that lack allocated resources.

There follows a summary of outcomes referring to the frequency of the cited individual barriers to rational decision-making that respondents perceive as significantly hindering effective decision-making. The summarized results are shown in Figure 2. The statistical characteristics of the researched data are then shown in Table 2 below.

Barrier	A	B	C	H	J	E	D	F	G	I	K	L	M
Count	90	82	72	57	46	41	32	25	19	19	17	13	5
Proportion	66%	60%	53%	42%	34%	30%	23%	18%	14%	14%	12%	9%	4%

Source: own research

Legend: A – Lack of time for problem solving ; B – Lack of information for problem solving; C- Unclear specification of the problem (task, event); D - Lack of experience in dealing with the problem; E - Lack of competent personnel involved in the resolution of the problem (e.g. for gathering information, preparation of documents); F – Unreliability and irresponsibility of personnel cooperating in solving the problem; G - Lack of theoretical knowledge for solving a given problem; H - Problematic collaboration with other institutions that are involved in solving a problem; I – No software support for solving a problem; J – No manuals, methods, or processes for solving a problem; K – Lack of knowledge of the appropriate methods for solving a problem and/or how to use them; L - Other obstacles (please specify); M – I have not encountered any obstacles when solving problems.



Source: own research

Table 2: Evaluation of the frequency of the barriers to rational decision-making

From the above Figure and table it can be seen that for employees of departments in the Ministry of Defence the most frequent obstacles to rational decision-making are lack of time and information for problem solving. These two barriers are reported by approximately two-thirds of respondents. Another major obstacle, cited by approximately half of respondents, was the unclear specification of tasks or problems to be solved. Somewhat less frequently mentioned barriers are those of problematic cooperation with other departments that are involved in solving problems, the lack of clearly defined procedures for solving problems and lack of competent personnel involved in the solving of problems.

Other barriers to rational decision-making are reported less frequently. About a quarter of respondents admit lack of experience with solving the given problems. Less than a fifth of respondents mentioned barriers relating to the unreliability and irresponsibility of personnel involved in solving a problem, no software support for solving a problem, lack of theoretical knowledge, or lack of knowledge of suitable methods for solving a problem.

Thirteen respondents stated other barriers, for example, the concurrence of multiple tasks in the same time period, superiors' lack of knowledge of their subordinates' competences, inappropriate organizational structure, sudden changes of assigned tasks, indecisiveness of the leading officials, and so on. Only five respondents stated that they had not encountered any obstacles to rational decision-making in their work.

A comparison of decision-making problems with significant barriers to decision-making

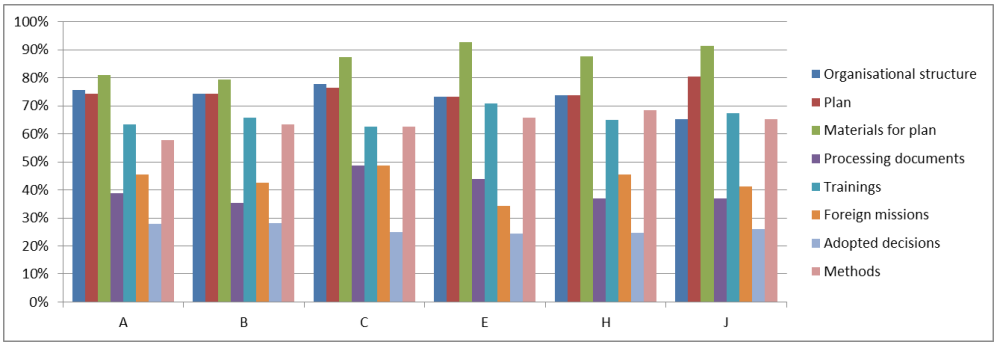
As part of the evaluation of the questionnaire survey, information linking specific mutual decision-making problems and obstacles that hinder the effective problem solving was obtained. The results of a comparison of the above-mentioned decision-making problems with significant barriers to decision-making are summarized in Table 3. For better clarity they are also shown in Figure 3.

	Problem	Organisational structure	Plan	Materials for plan	Processing documents	Trainings	Foreign missions	Adopted decisions	Methods
Barrier		A	B	C	D	E	F	G	H
Lack of time	A	76%	74%	81%	39%	63%	46%	28%	58%
Lack of information	B	74%	74%	79%	35%	66%	43%	28%	63%
Unclear assignment	C	78%	76%	88%	49%	63%	49%	25%	63%
Lack of personnel	E	73%	73%	93%	44%	71%	34%	24%	66%
Problematic cooperation	H	74%	74%	88%	37%	65%	46%	25%	68%
No methods	J	65%	80%	91%	37%	67%	41%	26%	65%

Source: own research

Legend: Barriers to decision-making: A – Lack of time for problem solving ; B – Lack of information for problem solving; C – Unclear specification of the problem (task, event); E – Lack of competent personnel involved in the resolution of the problem (e.g. for gathering information, preparation of documents; H – Problematic collaboration with other institutions that are involved in solving a problem; J – No manuals, methods, or processes for solving a problem;
The most frequent decision-making problems: A – Change in organizational structure; B – Formulating a plan; C – Working with materials for a plan; D – Processing documents; E – Preparation and implementation of Trainings; F – Preparation and implementation of foreign missions, G – Implementation of adopted decisions, international obligations, legal requirements, operations, and tasks that lack allocated resources; H – Formulating a method, a permanent operational procedure, an order or another internal regulation.

Table 3 shows the percentage of situations in which the respondents perceived a particular barrier as less or more important, and which prevented them from rational decision-making, when solving a decision-making problem.



Source: own research

Legend: Barriers to decision-making: A – Lack of time for problem solving; B – Lack of information for problem solving; C - Unclear specification of the problem (task, event); E - Lack of competent personnel involved in the resolution of the problem (e.g. for gathering information, preparation of documents; H - Problematic collaboration with other institutions that are involved in solving a problem; J – No manuals, methods, or processes for solving a problem

Table 3: Barriers to decision-making in solving individual decision-making problems

From the above Figure and table, it is clear that the respondents attach at least an average importance to nearly all the offered combinations as regards their perceptions of barriers to decision-making while solving a particular decision-making problem. Moreover, the majority of barriers are regarded as very significant attributes hindering effective decision-making. The vast majority of the respondents perceived the most pressing decision-making problem to be working with materials for plans (identified by more than 90% of respondents who encountered this decision-making problem), where the staff very significantly point to an obstacle in the form of lack of competent personnel involved in the problem solving, along with the absence of manuals, methods and procedures for solving individual problems.

The most frequent decision-making problem – working with materials for a plan – is, based on the findings, accompanied by more barriers to rational decision-making. Apart from the above-mentioned, there are also other very significantly represented obstacles (mentioned by over 80% of respondents), namely, the unclear specification of the task (problem), problematic cooperation with other departments (both cited by 88% of respondents) and lack of time for solving the problem (81%).

A similar situation can be observed in the findings concerning the decision-making problems formulating a plan and change in the organizational structure. Here, a large majority of respondents (almost three quarters), and also to a large extent, cite the obstacles regarding lack of time and information and ambiguous specification of the task, along with lack of competent personnel and problematic cooperation with other departments.

Well over half of respondents (over 60%) also perceive all of the obstacles listed in the table above as significant in relation to the problem of preparation and implementation of Trainings, with the most acute of these barriers relating to lack of competent personnel.

Employees of the Ministry of Defence encounter the fewest barriers hindering effective decision-making in the areas of implementation of adopted decisions, international obligations, legal requirements, operations, and tasks that lack of allocated resources.

Discussion

Of the decision-making problems that the respondents encountered, none were solved in a relatively smooth process, without coming up against barriers to effective decision-making and problem-solving.

This is also a reason why the respondents of the questionnaire survey were asked about the possible ways to eliminate the cited barriers while solving decision-making problems, a summary of which can be seen in Table 4.

The table shows the most interesting findings concerning the interrelationships between the solved decision-making problems, perceived barriers to decision-making and methods used to solve the problems in various stages of the decision-making cycle. The evaluation reflects the significance placed on the evaluation of particular relationships by the respondents. Since it was possible to evaluate one method and one barrier in the context of multiple problems, in this case, the total number of responses is not represented by the number of respondents. It is also necessary to pay special attention to the methods where a zero frequency is reported. This can be interpreted to mean that these methods were not used by any of the respondents in resolving the problems in the period of the previous five years. Nevertheless, it can be assumed that these methods are able to at least partially eliminate the barriers to decision-making, as perceived by the respondents.

One of the key weaknesses in the decision-making practice of the respondents arises from a lack of methodological support during the analysis of the environment phase, even though this part of the decision-making process can be regarded as crucial. This is due to the fact that on the basis of erroneous information, it is very difficult to arrive at an acceptable and effective solution to a problem. The questionnaire survey shows that a significant proportion of respondents use a SWOT analysis when making decisions, for which, however, they do not use any of the available standard methods of analysis of the internal and external environment. At the same time, the respondents did not mention in any significant numbers any other specific methods of environmental analysis. In the interviews, the respondents were asked for more details about this area. As a result, the assumption that the commanders devote very little effort to analytical work was confirmed. This very likely partially explains why a frequently mentioned barrier is *lack of information.*

		Barrier	Lack of time	Lack of Information	Unclear specification	Problematic cooperation	No methods	Lack of personnel
Area	Method	code	A	B	C	H	J	E
A	2) SWOT analysis	A2	40	25	29	20	12	18
B	2) PEST(EL) analysis	B2	4	4	0	2	2	2
B	3) DELPHI	B3	0	0	0	0	0	0
C	2) EFQM or CAF model	C2	0	0	0	0	0	0
C	3) Process analysis (audit)	C3	18	14	11	9	6	9
D	1) Interview	D1	137	116	140	82	78	80
D	2) Expert group discussion	D2	153	121	136	89	65	81
D	3) Questionnaires	D3	6	7	8	4	5	4
E	1) Brainstorming	E1	96	71	70	58	30	62
E	2) Brainwriting	E2	10	2	8	6	2	2
H	1) Scoring method	H1	32	11	17	18	13	23
H	2) Method of 100 point allocation	H2	3	2	0	3	0	3
H	3) Pairwise comparison method	H3	7	6	5	1	5	4
I	2) Future scenarios method	I2	23	10	18	9	11	12
J	7) War gaming (pros and cons analysis)	J7	48	38	39	33	16	24

Source: own research

Among other things, the interviews showed that if the standard methods of analysis are used, it is usually a rather unstructured collection of relevant information than sophisticated analytical work. For example, in the interviews it was said that the analysis of the macro environment (specifically PESTLE) did not make sense when decision-making, only the influences of the close external environment were considered relevant. If an analysis of the external environment is performed, it is not done using a specific method. EFQM analysis of the internal environment is not used as the competent commanders cannot use it and the junior officers have no authority or it is not in their job description to use it. An overview of strengths and weaknesses is compiled on the basis of their own judgment without methodological support. This shows the predominance of intuitive decision-making by commanders. The SWOT analysis is then usually only a list of factors arising from the judgment, experience and current knowledge of the decision maker. In interviews, the practice of a SWOT analysis being regarded as a list of pros and cons of a particular problem was also mentioned. This suggests a lack of analytical work in the early stages of the decision-making process, and a general misunderstanding of the meaning and content of standard analytical methods. It can be assumed that additional training in the field of environmental analysis could easily increase the effectiveness of collecting information about a problem and reduce the related time demands. With a better understanding of the situation there should be a clearer transmission of the related information between the decision-maker and subordinates.

The questionnaire survey revealed the great popularity of the use of *interviews* and *expert group discussions* when solving problems. On the other hand, commanders very rarely use the questionnaire technique. Similarly, the method of *brainstorming* is used very often, while some versions of the method *brainwriting* are hardly ever used. The questionnaires show that respondents frequently using these methods are also those that are most affected by the barrier of lack of time. In the interviews it was discovered that these methods are generally not being implemented properly in terms of methodology and at the same time they are not serving purely to generate a possible solution (which was their original purpose), but often only act as a means of collecting information. Therefore, to a certain extent, they substitute for the phase of the environment analysis that is not being conducted. According to the interviews, all

procedures have some form of standard meetings, although they are sometimes mistakenly called, for example, a brainstorming session. Several respondents admitted that the brainstorming is done in a very simplified form, and that it is often done only in order to find out the opinion of colleagues. According to the interviewees, as a rule, it is a case of a managed discussion between a commander and his or her subordinates, during which the ideas put forward for solving a problem are written down on paper and subsequently unsystematically evaluated. It was also mentioned that some people were reluctant to obey the rules of brainstorming. Several respondents admitted that they do not use the rules of brainstorming, even though they know them.

The research shows that, in order to eliminate the most frequently cited barriers to decision-making, the majority of respondents used mainly those tools that are qualitative in nature, such as interviews, expert group discussions or brainstorming. In the case of lack of information, the use of the interview seems reasonable, since it is the most appropriate method of data collection, despite the fact it is a more time-consuming method.

Thus, the results indicate a significant trend in the popularity of interviews, whether they are individual or group ones, as an effective way to overcome the barriers to decision-making. The respondents here agree that they use interviews quite frequently, namely in everyday matters of detailed specification and identification of factors that need to be addressed. The aspect of their effectiveness in eliminating the barrier of lack of time needed to implement a decision, is, however, somewhat controversial. The observed situation logically leads to the conclusion that it is probable that various forms of meetings for the purpose of decision-making are convened leading to an unsystematic exchange of views on a given issue. But in fact, it often happens that in the end the commanders make the decision on their own, without any effective and transparent evaluation of the contributions of their subordinates. This is despite the fact that meetings are one of the most time-consuming forms of group agreement. It does not seem to be effective to organize them for the sole purpose of obtaining opinions that can be collected in a simpler way.

An undeniable asset of group discussions is undoubtedly the mutual interaction, stimulation, and exchange of opinions between the group members, which leads to the accumulation of ideas. However, even here it is still possible to argue against these benefits on the grounds of time-saving. According to the respondents, expert group discussion is carried out mainly at meetings, conferences, workshops and when solving partial unspecified decision-making problems. The interviews revealed that commanders often consider their subordinates to be the experts and restrict themselves to their closest circle of associates. It seems that specialized experts on particular aspects of unstructured problems are not usually contacted. Both methods (interviews, expert group discussions) are interconnected by the barrier of lack of information to a large degree of significance. This raises the question of the degree of suitability and intensity of the use of these methods. Although this method facilitates the elimination of the barrier of task clarification, it does not significantly help with the removal of the barriers of lack of time and information.

One of the options for eliminating the barrier of lack of time is to use the Delphi method. An undoubted advantage of this method is that it is a time-saving means of obtaining structured information, having a sufficient communicative basis with understandable outcomes for both professionals and laymen, and which encourages creative thinking, enhances commanders' intuition and allows for revised forecasting. It could therefore solve the problem of lack of time

and relevant information, as perceived by the respondents. This relatively widespread method of qualitative forecasting, which can also be used in clarifying views on controversial topics, is, according to the results of interviews and questionnaire surveys, used at only half the rate of its possible use. As the respondents themselves admit, the method is used very rarely, and in those cases where it is used, it is used methodologically incorrectly. The interviews in this respect have shown that the Delphi method has been confused with a disorganized oral questioning of individual colleagues and subordinates to obtain their more or less expert opinions. From these, the commander then selects the best variant for solving a particular problem and decides intuitively. From the interviews, it was discovered that the commanders do not use written questioning, probably not even in the form of simple surveys. Even for obtaining an opinion concerning a simple problem, with generally clear variants of solutions, it is customary to convene a meeting to deal with the matter personally. In the interviews, it was only rarely revealed that surveys were used to find out the opinions of subordinates. They were used only sporadically to obtain feedback after a one-off activity, such as an educational evaluation. This raises the question of whether it would be appropriate to establish a methodological framework for the use of non-contact forms, i.e. questionnaire surveys and brainwriting. In particular, electronic forms of such communication can bring desired savings in time, when personal meetings are not needed to find out the opinions of those involved. Simple applications based on commonly used software, using predefined modules and allowing commanders to question their subordinates easily, could be a solution. Commanders should then be able to get the answers to their questions in a clear, written and structured form, which, to some extent, the software would be able to evaluate itself. It would also make sense to extend these techniques to more rounds of questioning based on the Delphi model and to utilize expert databases.

A specific problem that emerged from the questionnaire surveys and interviews is a certain knowledge vacuum in the area of determining the weights of the criteria. Commanders are aware of the importance of the evaluation of criteria by which the proposed variants of solutions to a problem are assessed. Although the individual criteria are evaluated according to their importance, adequate theoretical support is missing. From the frequency of the use of similar methods such as *scoring* and *100 point allocation*, there emerges a preference for a seemingly simpler approach. In the interviews, it was confirmed that the respondents do not realize the differences in different approaches and their specific benefits. In this regard, one respondent in an interview also said that it would be appropriate for the University of Defence to conduct a training course on this issue thus addressing the theoretical ignorance of this topic. Similarly, there arises the question of why the potentially effective and easy methods of pairwise comparison and future scenarios are not used. These methods are very easy to master and to apply in various situations, and at the same time they are time effective and generate useful outputs. The interviews once more referred to the above-mentioned problems: The future scenarios method was used provided there was enough time. Due to lack of time, a greatly simplified application was mentioned in one interview where two working groups of soldiers had to generate a likely scenario of the development of a situation. The commander then selected what was in his opinion the more likely of the two variants. The pairwise comparison method is thus generally perceived in a methodically incorrect way and very simply. For example, it is viewed as an expression of the opinions of individual group members when solving a problem, after which comes a comparison of them, i.e., who agrees with whom, who is inclined to what opinion, followed by a subsequent evaluation.

In the Department of Defence, the issue of specificity, which emerged from the questionnaire survey and the subsequent interviews constitutes a relatively difficult to predict phenomenon of barrier in the form of *an ambiguously assigned problem with vaguely defined objectives, outcomes and problem-solving approach*. Inability to predict is primarily associated with the assumption of a narrowly specified environment, where consistent, correct and unambiguous setting of specific goals with a clear idea of their outcome, is assumed. This aspect of the absence of methodology guidelines certainly demands attention. Here arises the question of whether the current methodologies, permanent operating procedures and internal regulations are adequate for the needs of military personnel. During the interviews, some respondents expressed a need to process and issue in advance a methodology to support effective solving of decision-making problems and a unification/harmonization of views on the particular problem in all organizational units. In this regard, the respondents believe that the majority of decision-making problems of a general character deserve such approach. They point to the current absence of a uniform methodology throughout the army (including the implementation of it) and thus the need for methodological unification which at least conforms to the application of general procedures when problem solving.

The methodologically incorrect use of decision-making tools and greatly simplified application of theoretical approaches is, to some extent, probably due to one of the problems identified in the interviews. It is a 'generational conflict,' where the knowledge of young university graduate officers clashes with the experience and preferences for the intuitive approach to decision-making of senior commanders. According to the respondents, young officers are often unable to consistently apply the decision-making tools they have learned and are encouraged to conform to the customs of the particular unit. In effect, the same kind of decision-making is carried out differently in different parts of the Army of the Czech Republic. There is often no single approach or set of rules concerning how to proceed. These differences in approach to the use of decision-making methods deepen with barrier E : *Lack of competent personnel involved in the solution of the problem,* in the case where a person changes position, they need to learn to deal with essentially the same decision-making situations differently, as is customary in that unit. According to the respondents, it is necessary to develop a uniform methodology that would also need to be strictly required. However, the findings indicate that this is not often encouraged by the senior management of the Army of the Czech Republic, who are mostly concerned with other kinds of problems. The change should therefore come from 'below', from the new young graduates.

The experience of commanders also points to the lack of qualified personnel who have the professional ability to help solve specific decision-making problems. According to some respondents, in the Ministry of Defence there is lack of professionally qualified commanders with the sufficient practice, education and experience. This suggests that solving decision-making problems could be aided by the possible creation of an electronic database of specific expertise and above all competent employees, regardless of the managerial level, who have the potential, where needed, to deal with a specific problem. From the interviews, however, it is evident that, in this respect, ongoing professional training in particular areas is necessary for managers throughout their careers.

Conclusion

The results of the questionnaire survey and subsequent interviews with the members of various levels of management of the Ministry of Defence, with regard to decision-making problems, perceived barriers to decision-making and methods used to solve problems in various stages of the decision-making process, it is possible to highlight the following key conclusions.

For the members of the Ministry of Defence, there are considerable differences in the use of specific tools to support effective decision-making and their methodically correct usage. The key deficiencies in decision-making practice are perceived as follows: insufficiently prepared methodological support during the phase of the environment analysis, improper methodological use of different methods, confusion over the choice of methodological tools, inconsistencies in the exchange of opinions, and careless collection of information to solve a particular decision-making problem. The questionnaire survey showed relatively little use of the recommended methods that support effective decision-making. From the interviews it was also apparent that the commanders are either unaware of the methods or deliberately avoid using the theoretically prescribed procedure. In follow-up studies, it will therefore be necessary to focus on various methods of strategic and decision-making analysis, for which there is a general assumption of their regular and methodologically correct use. It can be assumed that the conclusions of this research will be confirmed and that it will be necessary, to a large extent, to create specific methodologies and frameworks for the use of sophisticated methods in situations where intuitive and unsystematic decision-making is undesirable.

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