

# **Decision-making participation and locus of control among military MIS managers in Poland**

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## **Abstract**

The purpose of the research was determination of impact locus of control on decision-making participation among military managers of the Polish Army. I used two questionnaires in my research. I used "The Problem Set"- SET (by Mączyński, 1988, based on Vroom-Yetton, 1973), to assess what the decision-making style the participant prefers and the I-E Scale (elaborated by Gliszczyńska, 1990, based on Rotter, 1962, 1966) was employed to diagnose the locus of control. The research sample consisted of 168 randomly selected military managers from military units in the Lower Silesia region. My findings showed a greater willingness to use participative leadership styles among military managers with an internal locus of control.

## **Keywords:**

locus of control, decision-making participation, MIS users, Polish army, innovation capability for competitiveness, global development

## **Introduction**

One of the indivisible elements of the organization is the management process. The essence of the management process is decision making. Decision-making processes occur in organizations, not only economic, but also social or religious and military. In contemporary Polish army increasingly important becomes subordinates participation in the decision-making in the tasks.

Thanks to research on this process, future managers in the army will be able to make faster decisions and better to cooperate with subordinates. My research question is what processes take place when making decisions, how to understand them, how to translate them into the features that we examine.

## **Theoretical background and hypothesis**

### ***Decision making in the military organization***

The decision making process in the military organization is defined as a whole projects for command carried out by organizational units and individuals function in positions of command within the system of command. From an operational point of view, the process of proving treated as a decision cycle typical for all levels of command, consisting of periodically repeated phases, stages and activities which include: positioning, planning, tasking and control (Kręcikij, 2007).

The issue of decision-making in the army is reflected in the study, among others, Paul K. Davis, Jonathan Kulick, Michael Egner (2005), who practiced with the United States Air Force Research Laboratory (AFRL) in the planning of their research programs, and more specifically, the development of methods and tools for decision support. Also, Christopher Paul (2004), who explains an impact of organizational and institutional decision-making processes of military intervention. William J. Cojocar, (2011), highlights issues of adaptive leadership in the process of military decisions.

The role of a military manager as a management information system (MIS) user is to focus on the organization's information and technology systems in the army. Military MIS users analyze organizational

and business problems and then use, or design or maintain computer applications to solve the organization's problems. Such kinds of activities require an effective participation in the decision-making process. Strzoda, Krakowski and Spustek (2012), describe the possibility of using modeling and computer simulation to support the military decision-making process.

### ***Decision-making participation and leadership styles***

Decision-making participation is broadly based on "exerting influence on a partner that is the opposite of unilateral decision-making" (Wratny, 2000, p. 15). It is closely related to the style of people's leadership. My research methodology is based on the model of decision-making processes in the context of relationships, from Victor Vroom, and Philip Yetton (1973), and Victor Vroom, and Arthur Jago (1988). The authors identified the following leadership styles characterized by the participation of employees in the decision-making process:

- a) purely autocratic (AI) - the manager himself decides on the basis of the information,
- b) autonomy (AII) - the manager also makes the decision himself, but after gathering information from employees without explaining to them the substance of the problem,
- c) consultative (CI) - the decision-maker precedes the decision-making by the discussion of the problem with the staff individually in order to know their opinions and suggestions,
- d) purely consultative (CII) - before making a decision independently, the manager meets with all employees to discuss the issue in a group,
- e) total participation (group, democratic) (GII) - decision is taken jointly (in a group) by the superior and his subordinates.

The scope of the presented styles shows the process of making decisions from completely independent through taking into account the opinions of other employees to the group.

### ***Participatory behavior and the locus of control***

The factor that can influence the choice of participatory or authoritarian behavior by military managers is the locus of control (LOC). The LOC affects the way decisions are made, from the issuing of orders to posting. This construct, the locus of control, elaborated by Julian Rotter (1966), describes the subjective convictions of people about the influence of individuals (internal control) or external situations (external control), on what they encounter. People with a sense of internal control have greater managerial predispositions. The studies showed greater efficiency of people with internal LOC as managers, stating, for example, that their companies run better than companies led by managers with external LOC (Boone, De Brabander and Hellemans, 2000, Boone, Van Olfen and Van Witteloostuijn, 2005). However, the impact of the locus of control on participatory decision-making styles among military managers has not yet been verified. Therefore, we decided to explore this issue.

## **Methodology**

### ***Subject of study***

The military, with its own system of hierarchy, is a very interesting field of research for the styles of participatory decision-making used by people in leadership positions.

Each commander before giving an order will, performs thought process, the result of which is the decision. In many cases, the commanding obtain the necessary information from their subordinates, sometimes discussing the problem individually with some of them, eg. experts in the field. Can internal or external locus of control, have an impact on decision-making by the people whose role is to serve in the defense of the homeland? How much they are willing to take into account the opinions of subordinates? As far as the pattern of effective leadership, in the civil reality transfers in to the hierarchical organization of the Polish Army? How much true is the concept, according to military nature organizations, that there are numerous situations where only the superior decides, or is occasionally assisted by subordinates?

Thus, to find answers to these research questions and test the relationship between LOC and SPP (level of decision participation) in Poland, in the process of the Polish Army units command and control, we propose the following hypothesis:

- H1: Military managers who are characterized by of an internal locus of control (LOC), display more willingness to use participatory management styles (CI CII, GII).

The theoretical model is shown in Figure 1. In the described model, participatory decision-making (SPP) is a dependent variable. SPP manifests by its coexisting five dimensions that are the styles of decision-making from the most autocratic (AI, AII) to group-oriented (CI, CII, GII). The independent variable is a locus of control (LOC).

**Test procedure and test subjects**

The research was conducted in ten military units in Lower Silesia in Poland. The subjects were military managers such as: unit commanders, deputy commanders of the unit, commanders of subdivisions at the platoon level, heads of divisions and sections of at least two people. The study involved a total of N = 168 people. 46.43% of the respondents had a higher education, 49.41% were in the corps of officers, and 50.60% were in the corps of non-commissioned officers. 74.40% work for a sub-unit, while 25.60% were staff .

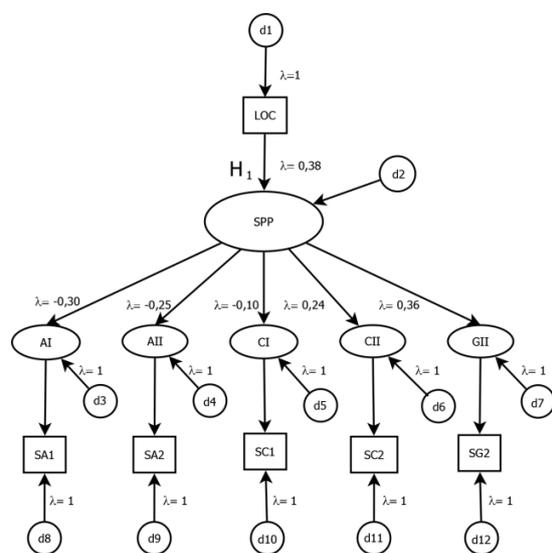
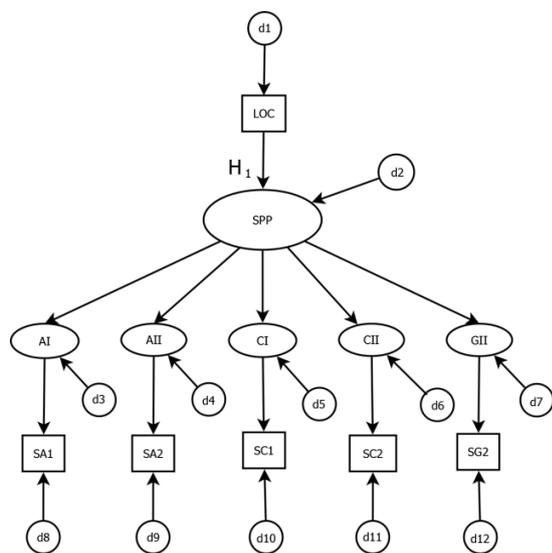


Figure 1. Theoretical Model Of The Research      Figure 2. The Empirical Model for Military Managers

**Methods**

The following methods were used:

**1. Set of Hypothetical Decision Problems (SET 5)** (Problem Set), edited by Victor Vroom and Phillip Yetton (1973). A Polish adaptation was designed by Jerzy Mączyński (1998). This is a method for determining a person's preferred decision-making style. The method consists of a set of thirty one-page scenarios for decision-making. The military manager chose his decision-making style by marking the appropriate answer (Ziobrowska, Kowal, Senejko, 2017). The level of decision participation can be determined on a quantitative scale. The level of participation (SPP) indicates the willingness to participate in decision-making. In the presented study, the reliability of the "SET5" method of measuring the SPP was Cronbach's alpha = 0.88 (N = 168).

**2. I-E Scale in Work**, edited by Xymena Gliszczynska (1990), to measure the locus of control at work. The I-E Scale Labor test contains instructions and 25 pairs of forced-choice statements. Each item contained two sentences (a and b). The military managers indicated which sentence suits them better.

**Findings**

In order to show the numerical characteristics of the variables from the model, first the basic descriptive statistics were calculated (Table 1).

	Group Total			Range
	Mean	Median	SD	
I-E Locus of Control LOC	17.42	17.00	4.61	0 - 25
AI Authoritarian Style	3.65	2.00	3.94	AI to GII are the structure of the response types that make up SPP
AII Authoritarian Style	5.51	5.00	3.91	
CI Consultative Style	5.88	6.00	2.77	
CII Consultative Style	8.26	8.00	3.89	
GII Participatory, Democratic Style	6.70	5.00	4.13	
SPP (level of decision participation)	5.60	5.65	1.89	0 – 10

Table 1. Basic Descriptive Statistics: Mean, Median, and Standard Deviation

We elaborated on an empirical model for military managers according to the methodology of SEM structural equation modelling (Kowal and Roztocki 2015b, Kowal and Keplinger 2015). This model is shown in Figure 2. The employed measurement instrument meets the criteria for psychometric reliability and validity (Kowal and Gurba, 2016). SEM analysis parameters – model fit measures, basic statistics, and indexes based on non-centrality - show a good fit of the established model to the data. Each dimension of my model indicates more than 50% of variance explained (AVE greater than 0.5). The estimated test reliability - Cronbach's alfa indicators are greater than 0.7. All the Root Mean Square Errors of Approximation (RMSEA) are less than 0.1. The fit index GFI indicators are greater than 0.8 (GFI values range from 0 to 1, with larger values indicating better fit). The ratio of the chi-square and the degrees of freedom  $\chi^2 / df$  are less than 5 indicating a good fit, too. Thus, all model fit indexes point to an acceptable adjustment. Thus, the model explains the high percentage of variance of the dependent variables (Kowal and Roztocki 2015b, Kowal and Keplinger 2015). The structural model for military managers showed, that the strongest path coefficient is the locus of control LOC ( $\lambda = 0.38$ ) This indicate that the internal locus of control LOC influences the increase in the SPP. The strongest factor loadings were obtained for consultative styles CII ( $\lambda = 0.24$ ) and the participatory, democratic style GII ( $\lambda = 0.36$ ). These loadings are positive, i.e. they increase the SPP (level of decision participation). The lower factor loadings were also obtained in the style of decision-making in authoritarian styles: AI ( $\lambda = -0.30$ ) and AII ( $\lambda = -0.25$ ), however the path coefficients are negative, i.e. the contribution of these factors decreases the SPP (level of decision participation).

## Conclusions and directions for further research

Based on the results of the research and analysis presented above, you can refer to the research questions and hypothesis. According to the hypothesis H1, there was a greater willingness for participatory steering styles (CI, CII, GII) in military managers, who are characterized high scores of the internal locus of control LOC. According to psychology, this factors characterized persons who are developed enough to bear responsibility for themselves as well as for others (McCrae, Costa, 2005; Gurba, 2011; Oleszkowicz, Senejko, 2013; Appelbaum, Louis, Makarenko, Saluja, Meleshko, Kulbashian, 2013). The results of my preliminary study expand existing knowledge and research stream on participatory decision-making process in MIS users in modern military army. The conclusions can be applied by educators and military MIS managers to improve and enhance the operational efficiency of the army, as well as to improve the image of the Polish army. The use of participatory decision-making in certain conditions can be a manifestation innovation capability for competetivness and global development (Kowal, Paliwoda-Pękosz, 2017).

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