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Relevance of Transactional Leadership in Czech Armed Forces: Case of Military Students

Relevance transakčního leadershipu v ozbrojených silách České republiky: Příklad studentů vojenství

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Abstract: Leadership and its styles have been in the spotlight for many years. The changing military environment and demands on army readiness bring new questions and perspectives to leadership. Leaders now face constant changes and specifications of the new modern era. Concerning these changes and transformations in society and the Army, there are new demands on soldiers and leaders at all levels of the Army of the Czech Republic. This paper provides insight and muse about both transactional and transformational leadership styles and investigates an approach to these styles by Czech military students. This paper aims to identify what leadership style Czech military students prefer at the University of Defence. This research focused on evaluating the personal characteristics required for a leadership position. To verify the relevance of the gained results, we employed paired t-test.

Abstrakt: Leadership a jeho styly jsou v centru pozornosti již mnoho let. Mění se vojenské prostředí a požadavky na připravenost armády přinášejí nové otázky a pohledy i do vedení. Lídři nyní více než kdy jindy čelí neustálým změnám a specifikacím moderní doby. V souvislosti s těmito změnami a proměnami ve společnosti a v armádě vznikají nové požadavky jak na vojáky, tak na velitele na všech úrovních Armády České republiky. Tento článek poskytuje pohled a úvahy o transakčním i transformačním stylu leadershipu a zkoumá přístup českých studentů vojenských oborů k těmto stylům. Příspěvek si klade za cíl zjistit, jaký styl vedení preferují čeští studenti na Univerzitě obrany. Výzkum byl zaměřen na hodnocení osobnostních charakteristik, požadovaných pro vedoucí pozici. Pro ověření relevance získaných výsledků jsme použili párový t-test.

Key words: Transformational Approach; Leadership; Factor Analysis; Leader Development; Soldiers.

Klíčová slova: transformační přístup; leadership; faktorová analýza; rozvoj vůdce; vojáci.

INTRODUCTION

At the beginning of the 21st century, there has been conducted a significant change in combat operations. Currently, there is a transition from the massive deployments of troops on one battlefield to the flexible deployments of smaller specialised units, anytime and anywhere. These conflicts are usually characterised by intensive battle dynamics, high mobility, by the usage of new ways of tactical troop's application. Furthermore, the number of deployed direct participants in the fight is decreasing due to the massively expanding information technology, with a decisive impact on the local population. All these changes place new demands on both soldiers and leaders at all levels of the Army of the Czech Republic. Conducting operations in small units' shifts responsibility from the strategic and operational levels to the tactical level. The lowest commanders, platoon or team commanders, become crucial in achieving the operation's goal. The importance of leadership has grown for all soldiers. For this reason, leadership is based on deep-rooted values, the soldier's moral foundation and abilities¹.

There are many ways to interpret the meaning of leadership. It can be described as "getting others to follow" or "getting people to do things willingly", possibly more specifically "use an authority in decision making"^{2,3}. From a general point of view, leadership is considered a part of management⁴, the ability to persuade others to strive to achieve set goals enthusiastically. On the one hand, management is primarily a way of directing the flow of events to specific destinations. On the other hand, the term leadership is used to set goals that we should achieve and, possibly, to gain people's support for these goals. Leadership focuses on the essential resource or value, which is people. It is a process of creating and communicating a vision of the future, motivating people and gaining their devotion and commitment, whether inside or outside the military. The pillar of the army is a soldier, and the soldier is the person, a human being. A spectrum of tasks is expanding, and therefore increasing the flexibility and adaptability of units will be needed more than before. Change in the military and global environment must be reflected in the preparation of the military personnel. Due to the constant changes resulting from new tasks, the demands on the capabilities of military commanders are also increasing. Military leaders, seen traditionally as a part of the moral component of the military fighting power, are, along with the conceptual and physical features, one of the pillars of an effective and efficient military organisation. The military organisation needs to satisfy new demands different from the historical military leadership practices,

1 FM 6-22, 2015. *Army leadership*. Washington D.C.: Headquarters Department of the Army. [accessed on 16.04.2021]. Retrieved from https://www.milsci.ucsb.edu/sites/secure.lsit.ucsb.edu.milid7/files/sitefiles/fm6_22.pdf

2 CEJTHAMR, V., and J. DĚDINA, 2010. *Management a organizační chování*. 2. aktualiz. a rozš. vyd. Praha: Grada Publishing.

3 MAŠLEJ, M., 2010. Styly vedení a chyby mladých velitelů-manažerů po nástupu do praxe. *Vojenské rozhledy*, 19(51), 3, 135-140, ISSN 1210-3292

4 VODÁČEK, L., and O. VODÁČKOVÁ. *Management :teorie a praxe 80. a 90. let*. 1. vyd. Praha: Management Press, 1994. 257 s. ISBN 80-85603-55-1.

and performing with excellence will require the advanced and sustained development of military leaders^{5,6}. The doctrine ACR states that leadership (ability to lead) is the ability of a commander to motivate, persuade, and recruit people in their surroundings to engage as actively as possible to accomplish tasks ahead every day, predetermined or expected⁷. The art of leadership is one of the essential qualities that every commander must have if they are to command successfully.

1 RESEARCH OBJECTIVE, METHODOLOGY AND DATA

The main aim of the paper is to identify what leadership style Czech military students prefer at the University of Defence. From defined parameters, we want to define key indicators of individual personal leadership, evaluated by individual student (self-evaluation) and evaluation by other person. To verify the set research goals, a two-way questionnaire survey was used, which allow studying impulsivity, behaviour and personality. These students were chosen because they are trained and thought to one day be leaders of units themselves. Students were paired with others they know the most, their friends, roommates and classmates. They evaluated themselves and their chosen partner. This particular setup shows the level they know each other. The research objective reflects commanders' requirements in leadership development as prevention of stressful environments and decision-making. The two-way questionnaire survey was used to verify the set research goals, which allowed for studying impulsivity, behaviour and personality. The behavioural approach focused on measuring the narrower aspects of impulsivity while allowing better control of variables, accurate performance measurement, and subsequent comparison of results. The chosen personality approach works with impulsivity as a set of traits, assuming that the resulting level of these traits forms the overall level of impulsivity. Therefore, a self-assessment questionnaire administered online was chosen as the primary method^{8,9}.

⁵ ANDERSON, D., L. ACKERMAN ANDERSON, 2010. *Beyond change management: how to achieve breakthrough results through conscious change leadership*. San Francisco: Pfeiffer.

⁶ SMILJANIC, D., 2016. Transformational Military Leadership –Requirements, Characteristics and Development. *Vojenské rozhledy – Czech Military Review*, 25(extra issue), 18-48. 10.3849/2336- 2995.25.2016.05.018-048.

⁷ ARMY CZECH REPUBLIC. 2004. *Doctrine ACR*. [accessed on 16.04.2021]. Retrieved from https://www.unob.cz/fvz/struktura/k302/Documents/Doktrina_ACR.pdf

⁸ SHARMA, L., K. E. MARKON, and L. A. CLARK, 2014. Toward a theory of distinct types of “impulsive” behaviours: A meta-analysis of self-report and behavioural measures. *Psychological Bulletin*, 140(2), 374-408. 10.1037/a0034418

⁹ UM, M., A. R., HERSHBERGER, Z. T. WHITT, and M. A. CYDERS, 2018. Recommendations for applying a multi-dimensional model of impulsive personality to diagnosis and treatment. *Borderline Personality Disorder and Emotion Dysregulation*, 5(1), 1-17. 10.1186/s40479-018-0084-x

1.1 Variable definition

This paper's main part introduces primary research data focused on leadership style preference at the University of Defence in the Czech Republic. Nowadays, there are several approaches how to approach evaluation of leadership. One of the most commonly used in the Czech environment is based on Bělohlávek¹⁰, who defined relevant and specific information about individual personal leadership characteristics based on various research methods (usually questionnaire surveys). In the survey, selected personal leadership characteristics are defined as research variables:

- C – Charisma,
- E – Encouragement,
- Pe – Personal respect,
- I – Intellectual stimulation,
- Pr – Promised reward,
- Im – Immanent punishment.

1.2 Sample specification

The research group consisted of students in the Economics and Management program at the University of Defence in the Czech Republic. At the time, there were 654 students in the Economics and Management program from all grades. The research sample included 247 respondents from the whole (37.77 %). All data were collected during the period from November 2019 to December 2020. All data was gained by proband, which make blind evaluation of the results. Therefore, it is not possible to make connection to individual person.

1.3 Research method

To verify the defined research goal, a mixed research design was used. It includes the employment of an experiment supplemented with the support of a one-time questionnaire survey. Chosen research method became a Transactional and Transformational leadership style test. This test is taken from Bělohlávek¹¹, who compiled it according to the test created by Bass¹². The Transactional and Transformational leadership style test is like the well-known Multifactor Leadership Questionnaire (MLQ) developed by Bass.

¹⁰ BĚLOHLÁVEK, F., 2000. *Jak řídit a vést lidi*. 2. doplněné vyd. Praha: Computer Press.

¹¹ *ibid*

¹² BASS, B. M., 1985. *Leadership and performance beyond expectations*. New York: Free Press.

This method was chosen because, in the army, the commander's success depends not only on the leader's own performance but, above all, on the success and cooperation of the whole unit. The motivation of the unit members to strive for more demanding goals and better innovative solutions to the task plays a significant role. Transformational leaders take such an approach, and this test shows the extent to which students (future commanders) use transformation and transaction leadership styles. This test determines the preference of the tools used for leadership. The choice of these tools depends on the leader's personality, values and the level of subordinate employees. Students were asked to perform a self-assessment and choose how they perceived themselves. For the purposes of the questionnaire, was used a scale where students described each statement on a scale from 1 (not at all) to 5 (almost always).

Furthermore, each student, who completed the self-evaluation was evaluated by their close colleague, who knows them well and cooperates with them daily. By this approach, every student received two evaluations (self-evaluation and evaluation of others). The test consists of 42 questions representing six factors, which are: (1) Charisma; (2) Encouragement; (3) Personal respect; (4) Intellectual stimulation; (5) Promised reward; (6) Imminent punishment.

1.4 Data collection

All data were collected during the period from November 2019 to December 2020. Data collection for research took place within the subject Preparation for Combat. Participation in the study was voluntary. Each participant received an identification code, ensuring all participants' anonymity. A trained person performed the data collection, participants were instructed on the course and ethics of the research, the methods, procedures used, and the risks associated with them. In conclusion of the introduction, probands confirmed informed consent to voluntary participation in the study in which no members of disadvantaged groups participated. For processing collected data, we used IBM SPSS Statistics 25 by applying paired t-tests and factor analysis.

1.5 Employment of statistics methods

The research was focused on the evaluation of personal characteristics required for leadership. However, there are partly problems within the evaluation because of the potential subjective points of view. Therefore, we used two different ways of a leader characterisation. One consists of self-evaluation, and the second includes an opinion of another person in the group. To verify the relevance of the gained results, we employed paired t-test.

For testing two measured characters on the same participant two-sample t-test was used. It helps to compare expected values μ_1 a μ_2 . Argument X and argument Y have average distribution $N(\mu; \sigma^2)$, and they are independent of each other. The basic

requirements of a two-sample t-test are normality of both analysed samples, equal variance and mutual independence of arguments^{13,14}. Mentioned expectations of variance equality must be validated by F-test, which compares equality if the individual variance in both samples¹⁵.

Factor analysis was used to process the collected data, which helps define key composite indicators. Compute method in factor analysis; Varimax rotation was applied. Two relevant tests verify the applicability of factor analysis. The first test is the Kaiser-Meier-Olkin coefficient (KMO). This coefficient has values in interval $(0;1)$ and is defined as the rate of correlation coefficient and the sum of squares of correlations within the partial coefficient. The second test is Bartlett's sphericity test, which evaluates the null hypothesis within the identity matrix^{16,17}.

Results of factor analysis are verified by application of Cronbach's alpha rate. This rate refers to a level of consistency and reliability of all items in defining factors in the context of dimensionality as part of exploratory factor analysis. The value of Cronbach's alpha refers to the inter-correlation among the items^{18,19}. This rate refers to the relevant reliability of factor analysis with a close connection to the correlation coefficient. This rate includes interim $(0;1)$, where a value close to zero refers to a situation without correlation of variable to others. Vice versa, if the value is close to one, there is a strong correlation between the variable to others. When the value is under 0.5, the internal consistency signifies a bad level. In the case of a value level close to 0.7, the defining factor should be considered acceptable and very significant. Values close to 1.0 are excellent. Application of Cronbach's alpha rate such confirmation of measuring a latent construct of factor^{20,21}. In the requirement of evaluation factors, relevant formulas must be defined by calculating factor loadings of variables at the input. The values of factor loadings were taken from the component matrix, and they are changed on value proportion with an equal sum to 1.

¹³ ŘEZANKOVÁ, H., 2010. *Analýza dat z dotazníkových šetření*. 2.vyd. Praha: Professional Publishing.

¹⁴ KUNDEROVÁ, P., 2004. *Úvod do teorie pravděpodobnosti a matematické statistiky*. 2.vyd. Olomouc: Universita Palackého.

¹⁵ BUDÍKOVÁ, M., M. KRÁLOVÁ, and B. MAROŠ, 2010. *Průvodce základními statistickými metodami*. Praha: Grada Publishing.

¹⁶ TARNANIDIS, T., N. OWUSU-FRIMPONG, S. NWANKWO, and M. OMAR, 2015. A confirmatory factor analysis of consumer styles inventory: Evidence from Greece. *Journal of Retailing and Consumer Services*, 22, 164-177. 10.1016/j.jretconser.2014.07.001

¹⁷ CONTI, G., S. FRÜHWIRTH-SCHNATTER, J. J. HECKMAN, and R. PIATEK, 2014. Bayesian exploratory factor analysis. *Journal of Econometrics*, 183(1), 31-57. 10.1016/j.jeconom.2014.06.008

¹⁸ HRACH, K., and J. MIHOLA, 2006. Metodické přístupy ke konstrukci souhrnných ukazatelů. *Statistika*, 86, 398-418.

¹⁹ ŘEHÁK, J., and O. BROM, 2016. *SPSS: Praktická příručka*. Brno: Computer Press.

²⁰ CRONBACH, L. J., 1951. Coefficient alpha and the internal structure of tests. *Psychometrika*, 1951, 16(3), 297-334. 10.1007/BF02310555

²¹ HINTON, P. R., I. McMURRAY, and C. BROWNLOW, 2004. *SPSS explained*. London: Routledge.

2 THEORETICAL BACKGROUND

2.1 Development of leadership

Many theories deal with and distinguish between different leadership styles, from Classical Leadership Theory, which lists three main types of leadership: authoritarian, democratic, and laissez-faire^{22,23} to conflicting leadership styles^{24,25}. Where charismatic leaders rely on their personality and inspirational qualities, these charismatic leaders are usually called visionary leaders. Non-charismatic leaders rely on their knowledge, silent control, and analytical approach. Autocratic leaders enforce and use their decisions and their position to force people to do what they want from them. Democratic leaders encourage people to participate in decision-making. Enablers inspire people with their vision of the future. Inspectors manipulate people so that they gain their willingness to satisfy them^{26,27,28}.

Many theories of leadership lack consideration of the emotional aspect of leading people. Burns's²⁹ heroic leadership describes a leader who excites and 'transforms' his followers. Later, Burns expanded his opinion and showed that the 'transformational leader' is the person who manifests or creates charismatic, inspirational leadership. The transformational leadership theory is currently one of the most researched leadership theories, which is in the focus of experts since the late 1980s. Its approach is unique and focuses on the highest human needs and the transformation of the current situation. Some authors use the terms transformational leadership as well as 'charismatic' leadership with no difference, probably because the author House published the theory of charismatic leadership at almost the same time as Burns his transformational leadership.

²² FRIES, A., N. KAMMERLANDER, and M. LEITTERSTORF, 2021. Leadership styles and leadership behaviors in family firms: A systematic literature review. *Journal of Family Business Strategy*, 12(1), 1-16. 10.1016/j.jfbs.2020.100374

²³ SORENSON, R. L., 2000. The contribution of leadership style and practices to family and business success. *Family Business Review*, 13(3), 183-200. 10.1111/j.1741-6248.2000.00183.x

²⁴ ANGUS-LEPPAN, T., L. METCALF, and S. BENN, 2009. Leadership Styles and CSR Practice: An Examination of Sense making, Institutional Drivers and CSR Leadership. *Journal of Business Ethics*, 93, 189-213. 10.1007/s10551-009-0221-y

²⁵ CHANGAR, M. and T. ATAN, 2021. The role of transformational and transactional leadership approaches on environmental and ethical aspects of CSR. *Sustainability*, 13(3), 1411. 10.3390/su13031411

²⁶ ARMSTRONG, M., T. STEPHENS, 2008. *Management a leadership*. Praha: Grada publishing.

²⁷ DU, S., V. SWAEN, A. LINDGREEN, and S. SEN, 2013. The roles of leadership styles in corporate social responsibility. *Journal of Business Ethics*, 114, 155-169. 10.1007/s10551-012-1333-3

²⁸ MESSICK, D. M., et al., 2004. *The psychology of leadership: New perspectives and research*. Psychology Press.

²⁹ BURNS, J. M., 2012. *Leadership*. Open Road Media.

They were used until the mid-1980s almost as synonyms^{30,31}. Until Bass introduced a comprehensive concept of transformational leadership, he included charisma as necessary, not a sufficient condition for transformational leadership and thus integrated House's theory into transformational leadership. Over the years, charismatic leadership has disappeared from researched articles^{32,33}.

Transformational leadership focuses on developing leaders and followers, internal motivation and a shared vision. Charisma, emotions and morality or ideas that can be shared play a significant role here³⁴. According to Bass³⁵, transformational leadership is aimed at a performance that exceeds expectations. Bass presents that the transformation leader realises the achievement of such a result in three points. The first involves raising the follower's awareness of the importance and value of group goals that it idealises. Secondly, they try to get followers to overcome their selfish interests and try to act to help the whole group. Thirdly, it seeks to create a need for followers to address higher-level needs, for example, self-updating. In later works, Bass distinguishes four transformation factors. They are charisma, inspiration, intellectual stimulation and individual attention³⁶.

The leader's charisma leads his followers to perceive him as their role model and strive to imitate him. It gives followers a vision, and followers perceive it as a personality with high ethical and moral standards. It is possible to observe two components here; the first is the attributive component, and the second is the behavioural one. The attribution part includes properties attributed to a leader by his followers, while behavioural signifies followers' attention to the leader's behaviour. This part in Bass's conception thus conceives of charismatic leadership. Inspiration is the factor that is most associated with encouraging follower motivation. The leader communicates to his followers their high expectations, which are based on trust in the abilities of followers. For example, the

³⁰ NORTHOUSE, P. G., 2013. *Leadership: theory and practice*. 6th ed. Thousand Oaks: SAGE.

³¹ STEIGAUF, S., 2011. *Vůdcovství, aneb, Co vás na Harvardu nenaučí*. Praha: Grada publishing.

³² REAVE, L., 2005. Spiritual values and practices related to leadership effectiveness. *The Leadership Quarterly*, 16(5), 655-687. 10.1016/j.leaqua.2005.07.003

³³ BASS, B. M., 1990 From Transactional to Transformational Leadership: Learning to Share the Vision. *Organizational Dynamics*, 18(3), 19-31. 10.1016/0090-2616(90)90061-S

³⁴ CONGER, J. A. and R. N. KANUNGO, 1994. Charismatic leadership in organizations: Perceived behavioral attributes and their measurement. *Journal of Organizational Behavior*, 15(5), 439-452. 10.1002/job.4030150508

³⁵ BASS, B. M., 2006. *Transformational leadership*. 2nd ed. New York: Psychology Press.

³⁶ MARQUES, J., 2015. The changed leadership landscape: what matters today. *Journal of Management Development*, 34(10), 1310-1322. 10.1108/JMD-02-2015-0010

importance of the task is also displayed to followers, who are encouraged to take part in task responsibilities^{37,38,39}.

Intellectual stimulation deals with supporting followers in search and finding innovative problem-solving techniques. Followers are supported in independent problem-solving when dealing with organisational problems; this process is bi-directional. The leader stimulates followers to question the established paths of thought and then influences them retroactively with new impulses. The individual attention of a leader is an essential part of transformational leadership. A leader creates a supportive atmosphere for followers and listens to their individual needs. They act as a coach or advisor whose goal is the most significant possible development of the follower.

On the contrary transformational leadership, which deals mainly with a mutually beneficial relationship in which followers are provided with an appropriate reward⁴⁰ when the work is done, is a transactional approach. Transactional leadership tends to accomplish what is expected and is based on legitimate authority within a bureaucratic organisation. Emphasis is placed on clarifying goals and objectives, work tasks and outputs, as well as organisational rewards and penalties. This style is also based on a relationship of interdependence and an exchange process between a leader and followers. Thus, the transaction leader works with expectations and rewards for completing the task or sanctions for not fulfilling it^{41,42}, and is in no way motivated to perform beyond expectations. According to Bass⁴³, transactional leadership is based on monitoring and controlling followers and rewarding desirable behaviour. Transactional leadership leads followers to meet the leader's expectations and achieve the desired goal, but not to exceed expectations and devote extra effort to their work. The attributes of transactional leadership are Contingency Reward and Management by Exception, Active and Passive.

There are also new approaches to Leadership like Leadership 4.0 and other concepts highlighting that leaders today need different capabilities to face a world where production, governance and management systems are being transformed. The World Economic Forum described, "We stand on the brink of a technological revolution that will

37 BANKS, G. C., ENGEMANN, K. N., WILLIAMS, C. E., GOOTY, J., MCCAULEY, K. D., and M. R. MEDAUGH, 2017. A meta-analytic review and future research agenda of charismatic leadership. *The Leadership Quarterly*, 28(4), 508-529. 10.1016/j.leaqua.2016.12.003

38 LOVELACE, J. B., B. H. NEELY, J. B. ALLEN, and S. T. HUNTER, 2019. Charismatic, ideological, & pragmatic (CIP) model of leadership: A critical review and agenda for future research. *The Leadership Quarterly*, 30(1), 96-110. 10.1016/j.leaqua.2018.08.001

39 DAI, Y.-D., Y.-Y. DAI, K.-Y. CHEN, and H.-CH. WU, 2013. Transformational vs transactional leadership: which is better? A study on employees of international tourist hotels in Taipei City. *International Journal of Contemporary Hospitality Management*, 25(5), 760-778. 10.5176/2251-3426_THoR1249

40 NORTHOUSE, P. G., 2013. Leadership: theory and practice. 6th ed. Thousand Oaks: SAGE.

41 AWAMLEH, R., J. EVANS, and A. MAHATE, 2005. A test of transformational and transactional leadership styles on employees' satisfaction and performance in the UAE banking sector. *Journal of Comparative International Management*, 8(1), 3-19.

42 VAN WART, M., and N. KAPUCU, 2011. Crisis management competencies: The case of emergency managers in the USA. *Public Management Review*, 13(4), 489-511. 10.1080/14719037.2010.525034

43 BASS, B. M., 1990 From Transactional to Transformational Leadership: Learning to Share the Vision. *Organizational Dynamics*, 18(3), 19-31. 10.1016/0090-2616(90)90061-S

fundamentally alter how we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before⁴⁴. Typical are constant changes and uncertainty⁴⁵ where leaders cannot describe the characteristics of their situations. Past approaches to problems may not be relevant, and the consequences of their actions are not predictable. What does it mean for leaders in general? According to the abovementioned questions, Stokes and Dopson⁴⁶ described that not all leadership topics had to change under the Fourth Industrial Revolution conditions. However, both technology and economic changes are considered key early drivers of fundamental social change. This social change requires a new set of leadership capabilities. They describe five key capabilities:

1. Shape the conversation - Leading is a conversation. Leadership 4.0 is as much about facilitating and enabling as directing. Crafting a story about who we are, where we are going, why we are doing this, and who we are doing it for is a more effective form of influence than hierarchical authority.
2. Cultivate collective intelligence - Diverse groups produce better solutions than homogenous groups. Leadership is less about providing the answer and more about releasing and connecting the existing knowledge.
3. Nudge the context - Leaders must influence and persuade without relying on formal authority. By regularly making links between the everyday actions of individuals and teams with the overall strategy and purpose of the organisation, leaders can create the right conditions for success and fill the void left by an absence of hierarchical power.
4. Co-create structure - Structures must respond to changing situations. Responding to an uncertain and fast-changing world requires agility. Formalized and overly rigid structures create sources of conservatism and risk becoming a constraint in a volatile world. The idea of the perfect structure is misleading. Structures should be shaped by the desired outcomes and collaboration with those involved.
5. Pluralize participation - Leaders must actively work with the plurality in their organisations and actively encourage collaboration and debate by creating the psychological safety needed for new voices to speak up without fear of criticism or ridicule.

When considering these changes and challenges of the 'modern age', is military leadership ready to face it? It seems that military readiness will be in the spotlight in today's environment of threats, not covering just a leadership question. As per the article

⁴⁴ SCHVAB, K., 2016. *The Fourth Industrial Revolution: what it means, how to respond*. World Economic Forum. [accessed on 16.04.2021]. Retrieved from <https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/>

⁴⁵ KOLEŇÁK, J., ULLRICH, D., AMBROZOVÁ, E., POKORNÝ, V., 2019. Critical thinking and leadership in industry 4.0 environment. In: *International Business Information Management Association Conference*, 1826-1836.

⁴⁶ STOKES, J. and S. DOPSON, 2020. *The five capabilities of Leadership 4.0*. [accessed on 16.04.2021]. Retrieved from <https://www.sbs.ox.ac.uk/oxford-answers/five-capabilities-leadership-40>

Military readiness: How emerging technologies can transform defence capabilities⁴⁷ - military advantage does not typically come from new technologies but rather from how technologies, processes, and people all work together. Industry 4.0 readiness is about redefining those relationships⁴⁸. In the light of these findings and descriptions of Leadership 4.0, it seems that transformational leadership is still relevant and able to keep the military moving toward new challenges of the modern era. It has also been argued by Koh et al.⁴⁹ that “transformational leaders have charismatic leadership behaviour whereby they attempt to inspire their followers in return to faith and respect. They also have a clear sense of mission that they attempt to convey to their followers. It’s further evidenced that such leaders also tend to have superior debating, technical, and persuasive skills”. This theory has criticised the difficulty of training others to be transformational leaders. Nevertheless, the supporting team of this theory agreed and supported the idea too⁵⁰.

Transformational leadership style represents factors of Charisma, Encouragement, Personal Respect, and Intellectual stimulation. Bělohlávek⁵¹ explains these factors:

- Charisma is a strong emotional relationship that gives the leader extra respect, recognition, admiration, love, and trust. It is an unquestioned belief in the correctness of what the leader also does in the leader himself. Charismatic leaders, by their actions, give subordinates an example to follow. A charismatic leader gladly and enthusiastically talks about future work tasks, devotes maximum energy to achieving goals and does not think about personal gain, not to be discouraged or surprised with what he can sacrifice to accomplish the task. He openly acknowledges the obstacles and dangers waiting on the way to the goal and is ready to fight them.
- Encouragement uses emotional means and slogans: “The leader talked about how important and demanding the new contract is. He said he trusted us. He said we were the best group he had ever worked with. He is sure that our result will surpass everyone.”
- The encouraging behaviour of the leader stimulates subordinates’ enthusiasm for work, and the encouraging speech of the manager creates confidence in employees in their ability to complete tasks and achieve group goals successfully.

⁴⁷ SCHULTZ, D., J. MARIANI, I. JENKINS, and L. RAYMOND, 2018. *Military readiness: How emerging technologies can transform defense capabilities*. Deloitte Insights. [accessed on 16.04.2021]. Retrieved from https://www2.deloitte.com/content/dam/insights/us/articles/4645_Military-readiness/DI_Military-readiness.pdf

⁴⁸ DVOŘÁKOVÁ, L., J. HORÁK, Z. CAHA, V. MACHOVÁ, S. HAŠKOVÁ, Z. ROWLAND, and T. KRULICKÝ, 2021. Adaptation of small and medium-sized enterprises in the service sector to the conditions of Industry 4.0 and Society 4.0: Evidence from the Czech Republic. *Economic Annals-XXI*, 191(7-8(1)), 67-87. 10.21003/ea.v191-06

⁴⁹ KOH, W. L., R. M. STEERS, and J. R. TERBORG, 1995. The effects of transformational leadership of teacher attitudes and student performance in Singapore. *Journal of Organizational Behavior*, 16(4), 319-333. 10.1002/job.4030160404

⁵⁰ AVOLIO, B. J. and W. L. GARDNER, 2005. Authentic leadership development: Getting to the root of positive forms of leadership. *The Leadership Quarterly*, 16, 315-338. 10.1016/j.leaqua.2005.03.001

⁵¹ BĚLOHLÁVEK, F., 2000. *Jak řídit a vést lidi*. 2. doplněné vyd. Praha: Computer Press.

- Personal respect - transformational leaders often act as the fathers of their subordinates. They tend to be friendly, informal and confidential; they shall be treated as equals despite considerable differences in status and experience. They dedicate special attention to neglected members, deal with each of the subordinates individually, and do not forget to comment appreciatively on each job well done. They assign demanding tasks to employees that boost their self-confidence.
- Intellectual stimulation - is the ability to imagine a non-existent future state and, at the same time, an ability to pass it on to other people. "His ideas make me look at my own opinions anew, things I never doubted", "let me think about old problems in a new way", "gives me a new perspective on the facts that for me used to be a mystery"- these are some characteristics of intellectual stimulation of transformation leaders. Intellectual stimulation is significant when the group solves a complex and unclear task.

2.2 Application of transactional and transformational leadership styles as part of the military area

The transactional leadership style represents rewards and punishments. If workers deviate from the required standard, do not meet the specified requirements or commit offences against the principles of work discipline, the leader implements exceptional measures such as reassignment of a worker, deployment of additional workers or punishment. The reward lies in the opportunity to motivate employees by promising benefits if they achieve good results. These advantages may be of a financial, objective nature - cell phone or business car- but they can also be a better job or position – the clearer the relationship between work results and advantage, the stronger the conditional remuneration. The effective leadership and the effectiveness of a leader reflect, as the most vital factor, the degree of his transformational approach, which influences the objectively measured performance of the led group. In the connection to the transformational approach uses four tools charismatic behaviour (sometimes called idealised influence), inspiring followers (or inspiring motivation), intellectual stimulation, and a personal approach. Charismatic behaviour includes moral, consistent behaviour, as well as behaviour that implies that the leader believes in himself. Inspiration of followers is focused on energising and motivating subordinates. It includes setting an attractive vision and goals by which the leader dignifies future progress and makes sense for the further direction of the group. The inspiring leader shows faith in fulfilling goals and vision and acts optimistically. An intellectually stimulating leader requires their subordinates' ideas. He engages his followers, leads them to seek new ways, and encourages them to think

unconventionally^{52,53,54}. As part of a personal approach, the leader expresses interest in his followers and knows and takes into account their strengths, reserves, and needs, thus creating in them a feeling that they are essential^{55,56,57}.

A leader's transformational approach is manifested by observable, measurable behaviour and can be developed. This makes the transformational approach a suitable criterion for evaluating leaders (e.g. through 360° feedback or a Development Center) and a suitable target for development programs. Although the transformational approach consists primarily of behaviour that can be learned and developed, there are relatively lasting personality characteristics of leaders that partially influence whether and how much the leader will apply the transformational approach. These can be suitable criteria for selecting new candidates for managerial positions^{58,59}.

In addition to the emphasis on the ability to act synergistically and synchronise the functions and activities of systems in a changing environment, the importance of capabilities related to the issue of asymmetric action is constantly growing. The asymmetric approach is related to proactivity, the symmetrical (linear) approach to reactivity, and the effectiveness of action during the development of the conflict⁶⁰. For the environment of contemporary military operations emphasising proactivity, asymmetry, and the characteristics mentioned above, it is not enough, just mental and physical resilience or condition⁶¹ or the will and motivation of the individual. In terms of training people, asymmetric action is related to the requirements for such qualities of military professionals

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- ⁵² SALAHUDDIN, M. M., 2010. Generational differences impact on leadership style and organizational success. *Journal of Diversity Management*, 5(2), 1-6. 10.19030/jdm.v5i2.805
- ⁵³ KIRKBRIDE, P., 2006. Developing transformational leaders: the full range leadership model in action. *Industrial and Commercial Training*, 38(1), 23-32. 10.1108/00197850610646016
- ⁵⁴ LIEVENS, P., P. VAN GEIT, and P. COETSIER, 1997. Identification of transformational leadership qualities: An examination of potential biases. *European Journal of Work and Organizational Psychology*, 6(4), 415-430. 10.1080/135943297399015
- ⁵⁵ AVOLIO, B. J. and B. M. BASS, 2004. *Multifactor Leadership Questionnaire*. Redwood City: Mind Garden.
- ⁵⁶ OXARART, R. A. and J. D. HOUGHTON, 2021. Spoonful of sugar: Gamification as means for enhancing employee self-leadership and self-concordance at work. *Administrative Sciences*, 11(2), 1-16. 10.3390/admsci11020035
- ⁵⁷ DARTEY-BAAH, K., 2015. Resilient leadership: A transformational-transactional leadership mix. *Journal of Global Responsibility*, 6(1), 99-112. 10.1108/JGR-07-2014-0026
- ⁵⁸ PROCHÁZKA, J., M. VACULÍK, and P. SMUTNÝ, 2013. *Psychologie efektivního leadershipu*. Praha: Grada Publishing.
- ⁵⁹ GRABO, A., B. R. SPISAK, and M. VAN VUGT, 2017. Charisma as a signal: An evolutionary perspective on charismatic leadership. *The Leadership Quarterly*, 28(4): 473-485. 10.1016/j.leaqua.2017.05.001
- ⁶⁰ MAYKRANTZ, S. A., L. A. LANGLINAIS, J. D. HOUGHTON, and CH. P. NECK, 2021. Self-Leadership and Psychological Capital as Key Cognitive Resources for Shaping Health-Protective Behaviors during the COVID-19 Pandemic. *Administrative Sciences*, 11(2), 1-14. 10.3390/admsci11020041
- ⁶¹ ULLRICH, D., AMBROZOVÁ, E., SEKANINA, J., 2020. Psychophysical fitness as one of the prerequisites for future commanders - Leaders in the security environment. In *Vision 2020: Sustainable Economic Development and Application of Innovation Management from Regional expansion to Global Growth*, 1824-1830.

and commanders, such as critical⁶² and creative thinking, mental condition, and other attributes^{63,64}. One possible way to create and improve the ability of professionals and commanders to perform and manage asymmetric operations is the concept of “Janus” thinking or the concept of the Cognitive Continuum for reasoning in stress^{65,66,67}. All of the mentioned approaches could be employed in connection to military leadership.

Military leadership is currently subject to high demands associated with the ability to handle both the maintenance and defence of peace, often in the context of long-term mentally demanding conditions. Professional soldiers are repeatedly exposed to situations that place high demands in preparation and later in an actual deployment, especially on their resistance to stress, attention, and decision-making processes. In the context of recruitment, training, selection, and subsequent training of military leaders, the demands on the efficiency and quality of the decision-making process in the context of risk adequacy considerations increase⁶⁸, as military leadership inevitably includes the need to make quick or risky decisions that may have unnecessary negative consequences in the case of their impulsive basis. Of course, a certain degree of acceptable risk has a natural place within the military. It is inevitably essential to deal with the complex and uncertain situations typical of many military operations. However, the systematic effort of modern armies to minimise these risks and the simultaneous security in the areas of leadership is significant. In this context, impulsive and ill-considered decisions should not have room in the military⁶⁹. Therefore the current goal of military efforts in the area is to prevent impulsive military behaviour and decision-making from military leaders as much as possible in their selection and training⁷⁰.

⁶² ULLRICH, D., POKORNÝ, V. AMBROZOVÁ, E., 2020. Leadership, Situational and Systemic Critical Thinking. *Vision 2020: Sustainable Economic Development and Application of Innovation Management from Regional expansion to Global Growth*, 1323-1332.

⁶³ SALIGER, R., V. POKORNÝ, and E. PINDEŠOVÁ, 2010. *Kognitivní management*. Brno: Univerzita obrany.

⁶⁴ TOMKINS, L., J. HARTLEY, and A. BRISTOW, 2020. Asymmetries of leadership: Agency, response and reason. *Leadership*, 16(1), 87-106. 10.1177/1742715019885768

⁶⁵ PAPARONE, CH. R., and J. A. CRUPI, 2002. Janusian Thinking and Acting. *Military Review*, (1), 38-47.

⁶⁶ KOSTROŇ, L., 1997. *Psychologie usuzování – teorie a metodologie Egona Brunswika, K.R. Hammonda a jejich následovníků*. Brno: Masarykova univerzita.

⁶⁷ HAMMOND, R. K., 2000. *Judgments under stress*. New York: Oxford University Press.

⁶⁸ LESCHER, W. K., 2008. Taking risks-An uncertain strategic environment demands thoughtful risk-taking. *Armed Forces Journal*, 27.

⁶⁹ BÖRJESSON, M., J. ÖSTERBERG, and A. ENANDER, 2015. Risk propensity within the military: a study of Swedish officers and soldiers. *Journal of Risk Research*, 18(1), 55-68. 10.1080/13669877.2013.879489

⁷⁰ SCHWEIGER, S., B. MÜLLER, and W. H. GÜTTEL, 2020. Barriers to leadership development: Why is it so difficult to abandon the hero? *Leadership*, 16(4), 411-433. 10.1177/1742715020935742

3 RESULTS

In the research, we focus on evaluating personal leadership characteristics in subjective self-evaluation and evaluation of another person in the group. This is why we have two sets of answers connected to one sample. Whereas we got two sets of answers, we employed paired t-test to verify the identity of variances of each set. The basic requirement is the usage of the F-test as a way of evaluating variances of two samples. By applying F-test, we can say that the variance of the samples should be considered equal. According to the observed critical region of gained t-test values, alternative hypotheses H_1 are accepted except in the case of promised reward for which the alternative hypothesis is rejected (accept H_0). The specific results of the application t-test on both samples of the variables are present in Table 1.

Table 1: Results of paired t-test

	95 % confidence level		t	Significance	F	
	Lower	Upper				
Charisma (self-evaluation) – Charisma (other)	-5.05465	-3.72673	-13.025	0.000	2.576263	H1
Encouragement (S) – Encouragement (O)	-3.47934	-2.11580	-8.082	0.000	0.412142	H1
Personal respect (S) – Personal respect (O)	1.81938	2.77981	9.432	0.000	0.602719	H1
Intellectual stimulation (S) – Intellectual stimulation (O)	-1.59524	-0.63148	-4.551	0.000	1.330338	H1
Promised reward (S) – Promised reward (O)	-1.07065	0.12329	-1.563	0.119	8.355983	H0
Immanent punishment (S) – Immanent punishment (O)	-1.51225	-0.46346	-3.710	0.000	0.78444	H1

All parts of leadership could be considered necessary. However, we focused on the choice of the identification of essential items by the application of factor analysis. The main core for the application of factor analysis is getting a correlation matrix of all individual six elements. Logically, from the application of factor analyses is rational to expect a situation when input variables are reduced to a better set of variables according to possible dimensions. The factor analyses were in exploratory form with the application of Varimax rotation, which reduces the count of variables for a relevant explanation of marketing activities. The evaluation process in the exploratory factor analysis requires defining several vital criteria and interpreting the relevance of application factor analysis. There were applied to the variance explained (value must be equal to or higher than

0.50), the factor loading (value must be equal to or higher than 0.50), and the internal consistency of gained factor due to Cronbach's alpha rate^{71,72}.

The result of the Kaiser–Meyer–Olkin (KMO) index of sampling adequacy is above the recommended cut-off point of 0.50. The significance of factor analysis is declared by Bartlett's test within the .000 value, confirming adequate usage. KMO value for self-evaluation is 0.624 and for evaluation of others is 0.745. Bartlett's test for both areas (self-evaluation and evaluation of others) is 0.000. These KMO values corroborate the possibility of applying analysis on chosen indicators, followed by verifying values in Bartlett's test. We confirm the relevance of extracted factors by applying Cronbach's alpha representing individual input variables. According to all defined areas, there were stated individual factors and their Cronbach's alpha rates^{73,74}.

Factor analysis results for self-evaluation provide one factor, which has an acceptable value of Cronbach's alpha. This rate reaches an acceptable value within 0.691 (over 0.500 and could be expressed as relatively strong). From defined items, only four items are saturating the factor. In the case of factor analysis for other evaluations, one aspect is gained, which has an acceptable value of Cronbach's alpha. This rate reaches a sufficient value within 0.672 (it is over 0.500, and it could be expressed as relatively strong). From defined items, only four items are saturating each factor (saturating items are highlighted in Table 2).

Table 2: The component matrix for items in the evaluation

	Self-evaluation	Other evaluation
Charisma	0.772	0.837
Encouragement	0.862	0.816
Personal respect	0.506	0.455
Intellectual stimulation	0.526	0.619
Promised reward	0.611	0.831
Menacing recourse	0.646	0.480

These factors provide a possibility to evaluate personal leadership characteristics in a fast way. For this purpose, there must be defined formulas for observed factors. The process of defining formulas is due to calculating acceptable factors that need the

⁷¹ TARNANIDIS, T., N. OWUSU-FRIMPONG, S. NWANKWO, and M. OMAR, 2015. A confirmatory factor analysis of consumer styles inventory: Evidence from Greece. *Journal of Retailing and Consumer Services*, 22, 164-177. 10.1016/j.jretconser.2014.07.001

⁷² CONTI, G., S. FRÜHWIRTH-SCHNATTER, J. J. HECKMAN, and R. PIATEK, 2014. Bayesian exploratory factor analysis. *Journal of Econometrics*, 183(1), 31-57. 10.1016/j.jeconom.2014.06.008

⁷³ CRONBACH, L. J., 1951. Coefficient alpha and the internal structure of tests. *Psychometrika*, 1951, 16(3), 297-334. 10.1007/BF02310555

⁷⁴ ŘEHÁK, J., and O. BROM, 2016. *SPSS: Praktická příručka*. Brno: Computer Press.

transformation of individual coefficients. These coefficients express the significance of the used elements in the factor, and their total sum must be 1. Individual formulas for observed factors are as follow:

$$F_{self-evaluation} = 0.27512 \times C_{self} + 0.30720 \times E_{self} + 0.18746 \times I_{self} + 0.23022 \times M_{self} \quad (1)$$

$$F_{other\ evaluation} = 0.26974 \times C_{other} + 0.26297 \times E_{other} + 0.19948 \times I_{other} + 0.26781 \times PR_{other} \quad (2)$$

These formulas can be defined for each military student who looks to become a commander and leader. All factors reflect the requirements for effective leadership in the context of transformational leadership. Factor analysis helps define key elements supporting analysed areas and reduces redundant input variables. Both factors are necessary to identify key leadership parameters for each person in military services. According to the stated coefficients in both formulas, we can say that charisma is essential mainly for others compared to self-evaluation; the lowest significance of variables is intellectual stimulation. Vice versa, encouragement plays the most significant role in self-evaluation; the lowest weight has intellectual stimulation. Nevertheless, leaders must evaluate themselves in various ways, and similar processes must do somebody else to reach objectivity in leadership evaluation. Factors can determine important business variables, playing a key role in achieving the set of objectives.

4 DISCUSSION

The application of military leadership in armed force requires personal liability of each soldier in connection to parameters of leaders (charisma, encouragement, personal respect, intellectual stimulation, promised reward, imminent punishment). Leadership itself is close part of commander's competency set, which is base of military personal development and combine vary areas. The set of competencies process provides parameters of personal responsibility in military actions and potential of creativity and kind of freedom to deal with specific situations. The personal development of new commanding leaders reflects leading activities such usage of examples (best practices), leading others, widen non-formal commanding way. To reach these parameters, each person have to cooperate in tasks' solution as support of positive environment and as base for self-development⁷⁵.

⁷⁵ SAIBERT, R., ŠTĚPÁNEK, P. 2020. Officer's competencies. *Vojenské rozhledy*, 29(1), 51-70.

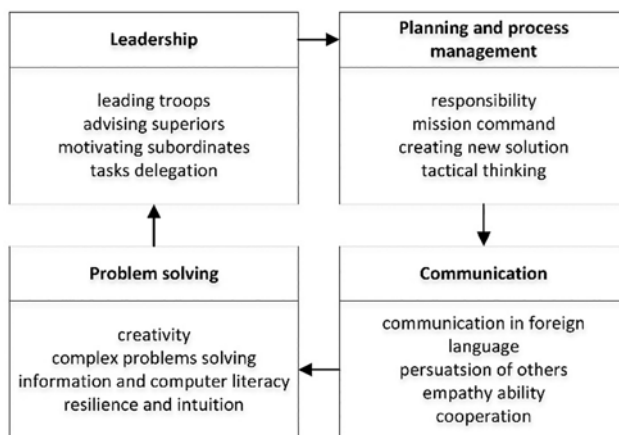


Figure 1: Set of commander's competencies⁷⁶

It is possible to compare evaluation of leading in two lines, self-evaluated and other-evaluated. The reason is that each person has different view perspective on own personality traits. According to our results, there is difference on individual parameters. In self-evaluation, respondents focus on own encouragement, charisma of the leader, imminent punishment, and potential intellectual stimulation (parameters are sorted by their weights). If the commander's leading abilities are evaluated by other, charisma of the person is considered as the most important, then is key area of promised reward, third place take encouragement, and last weight has intellectual stimulation. Parameter of personal respect is important, especially connection to empathy, but the relevance was not provided by the application of factor analysis.

CONCLUSIONS

The range of tasks and demands needed to manage is expanding. Therefore, increasing the flexibility and adaptability of soldiers, those who lead and whole units will be needed more than before. Change in the global military environment must be reflected in the preparation of the military personnel. In the light of 'the new era' and new demands, it seems that transformational leadership is still relevant and able to keep the military moving towards new challenges of the modern era. This work aimed to analyse the leadership style preferred among military students studying at the University of Defence in Brno, Czech Republic.

⁷⁶ CENTER FOR ARMY LEADERSHIP. 2013. *Commander's handbook for unit leader development*.

The theoretical part focuses on transitional and transformational leadership and presents it in the light of the concept of Leadership 4.0. To verify the defined research goal, a mixed research design was used. It includes the employment of an experiment supplemented with support of a one-time questionnaire survey, specifically a test taken from Bělohlávek⁷⁷, who compiled it according to the test created by Bass. This method was chosen because, in the army, the commander's success depends not only on the leader's own performance but, above all, on the success and cooperation of the whole unit. Students were asked to perform a self-assessment and choose how they perceived themselves. Furthermore, each student of the military programme would become a commander who completed self-evaluation and was evaluated by their colleague too. The test consisted of 42 questions representing six factors: Charisma, Encouragement, Personal respect, Intellectual stimulation, Promised reward and Imminent punishment. According to the observed critical region of gained t-test values, alternative hypotheses H_1 are accepted except in the case of promised reward for which the alternative hypothesis is rejected (accept H_0).

Developing cognitive skills helps soldiers prepare for various combat missions, where the tactical soldier level is required. Also, this requirement puts soldiers under intensive stress pressure influencing their leading abilities, respecting defined factors.

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⁷⁷ BĚLOHLÁVEK, F., 2000. *Jak řídit a vést lidi*. 2. doplněné vyd. Praha: Computer Press.

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