OPERATIONAL LEADERSHIP: CONCEPTUAL REVIEW, FRAMEWORK AND CORE COMPETENCES

NATUREZA DA LIDERANÇA OPERACIONAL: REVISÃO CONCEPTUAL, ENQUADRAMENTO E COMPETÊNCIAS NUCLEARES

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Abstract

The study of leadership and associated competencies is a subject that has aroused the interest of organisations and the academic world in general. In the organisational context, leadership competencies comprise a set of skills and behaviours that contribute to superior performance. This joint approach to leadership and competency concepts allows organisations to identify and develop leaders, by defining and communicating leadership requirements.

This study was based on a hybrid strategy, combining questionnaires, interviews and bibliographic research. The main purpose was to identify the core competencies of the operational leaders of the Portuguese Army by resorting to the United States Army core leadership competencies framework. The research results point to the validity of seven of the eight core competencies.

The core competencies framework must be tested and other models may be included as needed. A shift is recommended from the classic management model of human resources towards a new framework based on competencies.

Keywords: Competencies, competencies framework, core competency, KSAO.

Como citar este artigo:

Cigre, D., 2015. Operational leadership: conceptual review, framework and core competencies. *Revista de Cièncias Militares*, Novembro de 2015 III (2), pp. 183-226.

Resumo

O estudo da liderança e competências associadas são temáticas que despertam elevado interesse nas organizações e no mundo académico. As competências de liderança em contexto organizacional reúnem um conjunto de aptidões e comportamentos que contribuem para desempenhos superiores. A abordagem conjugada dos conceitos de liderança e de competência permite às organizações identificar e desenvolver líderes, definindo e comunicando os requisitos de liderança.

Este estudo baseou-se numa estratégia mista, conjugando questionários, entrevistas e pesquisa bibliográfica. O objetivo geral consistiu em identificar as competências nucleares dos líderes operacionais do Exército Português, recorrendo para o efeito, ao modelo de competências nucleares do Exército Norte-Americano. Apurou-se que sete das oito competências nucleares são aplicáveis.

Face ao modelo apresentado que deverá ser testado em contexto organizacional, deve ser equacionada a inclusão de outros modelos e uma mudança do paradigma da gestão tradicional de recursos humanos funcional, para um modelo baseado em competências.

Palavras-chave: Competência nuclear, competências, KSAO, modelo de competências.

Introduction

The study of leadership and associated competencies is an issue that currently arouses a high level of interest from organizations and the academic world in general. The importance of the role played by leadership in human life and in the evolutionary process of all forms of human organization is undeniable and must be understood in its entirety by all elements, regardless of rank.

Leadership competencies in organizational contexts comprise a set of skills and behaviours that contribute to superior performance. A combined approach to the concepts leadership and competency allows organizations to identify and develop their leaders by defining and communicating leadership requirements.

A competency-based leadership model ensures a common platform for the development of leaders. Much like values, competencies can be applied over time, at different levels of authority and responsibility and in new situations. While specific situations or organizational requirements signify the use of different components or behaviours, leadership competencies, as a whole, are transversal regardless of position, tasks or time.

Values shape the character of leaders and competencies guide their behaviour. Core competencies are unique and specific to an organization, enabling its development, and are a competitive edge over other organizations.

The national military doctrine is sparse concerning leadership in general and operational leadership in particular. As operational leadership is crucial for the operation of the Military

Institution, the lack of doctrinal and management references in the field is surprising. Thus, we used the core competency model of the US Army recommended in *Field Manual (FM) 6-22, Army Leadership* (Department of the Army, 2006), which defines eight core competencies grouped into three categories and manifested in various components and actions.

The topic approached, "Operational leadership: conceptual review, framework and core competencies" is of great importance. First, the Portuguese military literature is sparse; second, operational leadership helps improve the efficiency of organizations, in various ways; finally, this study is part of the research project "Developing the next generation of military leaders: Challenges, Strategies and Obligations."

With leadership competencies as the object of study, this research aims to examine the core competencies of operational leaders in the Portuguese Army. To this end, a choice was made to delimit this research to Company/Battery/Squadron and Battalion/Group levels.

The overall objective of this study is to identify the core competencies of the operational leaders of the Portuguese Army, in clear alignment with the demands, requirements and requests intrinsic to the broad spectrum of duties that characterizes the military profession.

This research was carried out in three phases. The exploratory phase aimed to ascertain the relevant concepts and theories to establish a foundation for this study, to highlight the framework and to define the approach to the research problem. The analytical phase was based on a mixed strategy, that is, the combined use of quantitative (questionnaire survey) and qualitative (literature research and interview survey) techniques, which yielded the desired complementarity of the data collected. The final phase focused on the evaluation and discussion of results, the presentation of the findings, the implications and contributions to the repository of knowledge, and the presentation of certain recommendations.

The analysis model includes eight dimensions (corresponding to the core competencies of the model under analysis) validated by the observation of a set of indicators relating to two independent variables: the importance and frequency of use of competencies.

As part of the methodological approach chosen, this research was guided by the central question (CQ): What are the core competencies in the competency model of operational leaders that enable them to achieve the performances required by the Portuguese Army? From the CQ arise the following derived questions (DQ):

- DQ1: What are the most important competencies of operational leaders in the Portuguese Army?
- DQ2: What are the most common competencies of operational leaders in the Portuguese Army?
- DQ3: What are the differences between the competencies of Company/Battery / Squadron Commanders and Battalion/Portuguese Army Group Commanders?
- DQ4: What are the key competencies for the duties of Company/Battery /Squadron Commanders and Battalion/Portuguese Army Group Commanders?

This paper is divided into five parts. After the introduction, a conceptual framework of the notion of competency is described and the most significant approaches are presented. The model of core competencies of the US Army is introduced and contextualized in terms of competency models. The theoretical framework, the methodological procedure and the techniques and instruments for collecting and processing the data used in the study are also discussed. The research results are presented, analysed and discussed. Finally, the conclusions that provide an answer to the CQ and the DQ are presented. Certain questions and recommendations deemed relevant to further research are also formulated.

1. Competency: concept and approach perspectives

The first part of this research consists in a conceptual review, primarily addressing the origin and evolution of the concept of competency and the polysemy resulting from the term. Secondly the most relevant perspectives on the concept of competency are presented, as well as an approach to the components of competency and management by competency in today's organizations.

a. Origin and evolution of the concept of competency

The term "competency" can take on different meanings, in particular "a power legally recognized by a public authority to perform a given act"; "an ability, the power to assess or address a given subject"; or "set of theoretical or practical knowledge mastered by a person and of requirements met by them and which are needed for a particular purpose" (AAVV, 2001, p. 887).

The word "competency" derives from the Latin competere, which means "to be appropriate"; however, the origin of the concept is not consensual. According to most authors, the concept dates back to antiquity. Both Romans and Chinese would have given special importance to competencies in the process of selecting human resources (HR) for their armies (Mayoral, et al., 2007) and civil services, acknowledging the boundaries between personal qualities and formal education (Hoge, et al., 2005).

The words "competent" and "competency" emerged later, associated with the law and with clinical psychology, where those terms have evolved to define legal standards of mental abilities and consciousness. In legal terms, competency meant the ability of bodies and individuals to make a particular judgment. The term came to be used to classify the ability of certain individuals to express their views on certain subjects.

Despite the antiquity of the term "competency", it was only in the twentieth century that the first scientific approach emerged. According to Ceitil (2006), the relevant literature points to the Taylor movement as the genesis of the concept of competency. The desire of companies¹ to be staffed with efficient personnel has lent special importance to improving

¹ Arising from the global economic crisis of the 1970s.

technical and specific skills in the performance of the operational tasks of a duty or position. This trend was accentuated in the 1970s, when many American authors questioned the validity of cognitive ability measurements as predictors for the selection of personnel.

Most likely, the person who most contributed to the popularity of the term "competency" was McClelland, who questioned the reliability of personality tests, academic degrees, among other types of tests and criteria used in the context of personnel selection (Ceitil, 2006, p. 28).

Given the constraints met, McClelland guided his research towards developing more reliable forms of forecasting that were not based on socio-economic, ethnic, racial or gender-related factors. McClelland conducted behavioural interviews² on two types of individuals: those with exceptional performances and those whose performance was sufficient to keep their jobs. The observation of these groups of individuals allowed the author to highlight their differences, which he entitled competencies.

The continuity of McClelland's research was ensured by several scholars, among whom Boyatzis (1982), who, in his work *The Competent Manager*, defines two types of competencies: core and basic. The first relate to high performances while basic competencies are intrinsic to median performances (Ceitil, 2006, pp. 26-27).

Table 1 presents a set of common definitions of competency according to the emphasis of the respective authors, all of which display a composite nature.

Author	Definition	Emphasis		
Boyatizis (1982, p. 23)	Actual aspects related to human nature. These are observable behaviours that largely determine the outcomes of an organization.	Training Behaviours Outcomes		
Spencer & Spencer (1993, p. 9)	Refer to the intrinsic characteristics of an individual that influence and serve as a reference for workplace performance.	Training Outcomes		
Klemp (1980, p. 21)	Reference the personal characteristics lea- ding to an efficient or superior workplace performance.	Outcomes		

Table 1 - Definitions of competency and resp	ective emphases.
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² Behaviour Event Interview.

Author	Definition	Emphasis
Cascão (2005, p. 37)	Underlying characteristic of an individual, which has a causal relationship to perfor- mance criteria and/or superior achieve- ments in a job or situation.	Outcomes
Parry (1996, p. 50)	Based on knowledge, abilities and attitu- des, largely reflecting an individual's per- formance in the workplace, measured by well accepted patterns developed through training.	Training Skills Outcomes

Table 1 - Definitions of competency and respective emphases (Cont.).

Source: Author (2015).

b. Approach perspectives

Despite the concept of competency having been extensively studied by several authors, their views are not consensual. This arises from the concept's intrinsic complexity (composite nature) and to the multiple perspectives from different areas of application.

The term "competence" as an adjective is used to characterize individuals, and is also used as a noun, that is, with regard to contents. This "confusion" comes from the different usage of the term in social sciences and management, compared to other areas unrelated to the professions. In this context, Moore et al (2002, p. 314) suggest that different definitions of the terms can be used and that they are often interchangeable in their singular form. This perspective implies a relationship between the two terms. The competent application (competence) of a skill will lead to a competent act (competency), and vice versa.

The first perspective is the functionalist approach, in which the concept of competency is defined by the relationship between tasks and activities, realized in the combination of attributes underlying a successful problem-solving performance (Cascão, 2005, p. 37).

Constructivist theories consider the concept of competency a result of the analysis of organizational dysfunctions, suggesting an ongoing process of building competencies to an individual (ibid.). This perspective focuses on that individual's functional interactions, aiming to provide personal characteristics for performance design.

The authors from the behavioural current (McClelland, Boyatzis and Spencer & Spencer) define competency as an underlying characteristic of an individual, which has a causal relationship to performance criteria and/or to superior achievements in a job or situation (ibid). The authors propose an *iceberg* model to explain the different competency levels (Ceitil, 2006, p. 93).

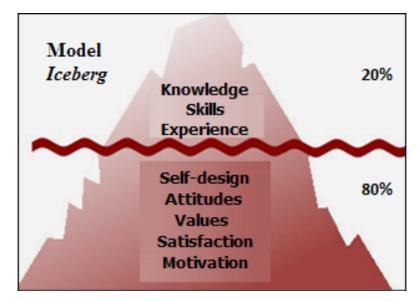


Figure 1 – The *iceberg* competency model.

Source: Adapted from MSG (2013).

According to Boyatzis (1982), competency is an "underlying characteristic of a person, which has a cause/effect relationship with the median or superior performance of a duty and can be perceived as an intrinsic feature of a person that results in effective or superior performance in performing an activity" (Boyatzis, 1982, cited in Ceitil, 2006, p. 96). Boyatzis divided competencies into two types: core (associated with high performances) and basic (associated with median performances).

On the other hand, the French approach distinguishes between three types of "knowledge" (*savoirs*): "knowledge" in terms of the theoretical dimension of competencies (*savoir plus*); "know-how" (*savoirs faire*), practical in nature; and "knowing-being" (*savoir- être*), including social and behavioural competencies (Bilhim, 2004, p. 81).

Behavioural theories influenced many authors in the development of new perspectives. Whiddett & Hollyforde (1999, p. 3), based on the fundamentals of behavioural theory, classify competency as the irrefutable manifestation of individual traits or characteristics, that is, behaviours or actions that can be measured and observed.

With particular focus on the United States of America, most authors have been using different models, the most common being the *Knowledge, Skills, Abilities and Other Characteristics model* (KSAO) (Table 2), which brings together the attributes required of individuals to accomplish tasks in the work context (Brannick & Levine, 2002, p. 106).

Table 2 - KSAO Mo	odel.
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Typology	Characterization					
Knowledge	Explicit information that a leader must understand through experience or study.					
Skills	Social, inter-personal, tactical and technical skills. Social and inter-personal skills are a leader's ability to interact with different individuals and motivations. Related to the performance of specific tasks, including the order and					
Abilities	accuracy of specific behaviours. Attributes or characteristics required to perform a set of tasks. Different from skills because they are attributes that individuals inherited or acquired in past situations.					
Other characteristics	Other characteristics, including attributes, traits and experiences required for the success of leaders.					

Source: (Brannick & Levine, 2002)

The evolutionary process and the development of the presented theoretical approaches led to a reflection on the different sensitivities and emphases observed by the authors. Despite the varied approaches, the review conducted allows for the systematization of certain considerations relating to the components of the concept of competency, namely that:

- They are specific behaviours observed more or less frequently in the performance of the duties intrinsic to a professional activity;
- They are realized in the superior performance of a specific task or activity;
- They are measurable (differential between effective performance and standard performance);
- They are different from activities and tasks;
- They are not limited to mere personal characteristics;
- Their implementation suggests a multidimensional approach (knowledge, will and availability of resources);
- They are situational and dynamic, enabling learning, continued performance and success.

This systematization is important for the implementation of competency management models that bring together a set of administrative practices for achieving an organization's objectives. A shift is occurring in the focus of competency management models. Initially, these models were focused on control (Taylor-Ford model) and are currently performanceoriented (Dutra, 2001).

According to Cascão & Cunha (1998), management by competency has several advantages, including:

- Increased flexibility;
- Encouraging individuals to acquire competencies;
- Promoting individual commitment and involvement with the organization;
- Facilitating the resolution of complex problems.

In this context, the clarification of the requirements for activities and the respective competencies allows for planning in HR (ibid, p.184). In short, the results of the institution depend not only on the quality of its resources, but also on its management of performances. These two factors complement each other in the strategic management of competencies and the achievement of competitive edge (Cascão, 2005, p. 27).

2. Model of core competencies of the US Army

a. Competencies model concept

A competency model is a set of competencies³ and behaviours that are directly linked to the mission, vision and strategic vectors of an organization, to the tasks that must be carried out and to the target levels of competency for each type of behaviour. According to Oliveira (2009), a competency model with no connection to the organization's strategy is of no use.

Depending on their purpose, competency models can define organizational or core competencies, functional⁴, technical or position⁵ and leadership competencies. In this study, and because it deals with operational leadership, the model whose applicability it will be tested presents features from two competency models (mixed) – an organizational or core competencies model and a leadership model.

b. Organizational model of the US Army

The organizational (or core competency) model of the US Army, along with a set of other attributes, embodies the leadership requirements model (Table 3). This model has interrelated components and is a common basis for thinking and learning on the subject of military leadership and associated doctrine (Department of the Army, 2006, pp. 2-4), and can be

³ Depending on the work and on the organizational environment, seven to nine competencies are typically required for a particular activity and described in the competency model (Ennis, 2008, p. 4). ⁴ Which describe the performance standards required for the performance of a task or specific duty

by a person.

⁵ Which describe the behaviours, skills and expertise needed to achieve exceptional performances in a given position.

applied to all levels of leadership⁶. The basic components of the model focus on who a leader is (attributes) and what a leader does (core competencies).

• Attributes

With regard to attributes, the character, presence and intellectual capacity of a leader enable the application and development of the competency model over a long term learning process (ibid).

Given the clear influence and relationship between the attributes and core competencies in the model, we chose to study its applicability to the Portuguese Army by conducting functional interviews with individuals in the positions under analysis.

Table 3 - The leadership requirements model of the US Army.

Leadership requirements model						
Attributes	Core competencies					
"Who a leader is"	"What a leader does"					
Character	Leading					
• Values	Leading others					
EmpathyWarrior Ethos	• Extending influence beyond authority and the chain of command					
• Warnor Ethos	• Leading by example					
	Communicating					
Presence	Developing					
Posture and attitude	• Creating a positive environment					
Physical condition	Self-preparing					
Self-confidence	Developing others					
• Resilience						
Intellectual ability	Achieving					
Mental agility	Achieving outcomes					
• Judgment						
Innovation						
Common sense						
Mastering knowledge						

⁶ Direct, organizational and strategic.

Core competency model

The core competencies of leaders result from a combination of institutional values, selfdevelopment, training and professional experience. The building of competencies follows a gradual and systematic approach from the development of individual competencies to their appropriate implementation in different everyday situations. Leading individuals through the assignment of complex tasks facilitates the gradual development of trust and the willingness to face more difficult challenges (idem, pp 2-7).

As noted earlier, core competencies are characterized by being transversal to all elements of an organization, hence to all levels of leadership. As competencies consist in displays of behaviours that can be observed and evaluated by leaders, subordinates, peers and mentors, those competencies are the preferential foundations for the clear and consistent development of leaders. The definition of a core competency model presents as a crucial process to represent the efficiency of a particular position, job, office or role in the organization.

However, the polysemy of definitions and concepts and the diversity of objectives and applications of the models (depending on organization) generate some confusion when designing a competency model (Briscoe & Hall, 1999). Behavioural theorists argue that competencies describe behaviours, activities, processes and other characteristics associated with leadership, management, supervision, among others. In the context of leadership, competencies should describe how leaders individually influence and achieve success in their organization, and are different and more complex, albeit related, concepts than those presented in KSAO model.

The core competency model of the US Army was developed from several sources, including leadership doctrine, literature reviews on competencies and leadership, as well as the contribution of experts. This model is not only based on a traditional work analysis, but also highlights the desirable characteristics in an individual and a work place, defining the core characteristics that reveal how the remaining are organized.

The model includes eight core competencies (Table 4) grouped into three categories (leading, developing and achieving), and is based on the associated components and actions.

			core competency me						
		Competency							
Category		Leading others	Extending influence beyond authority and the chain of command	Leading by example	Communicating				
	Leading	 Guiding, motivat- ing, inspiring; Implementing standards; Balancing the mission and wel- fare of followers. 	 Building trust; Understanding the sphere, means and limits of influence; Negotiating, building consensus and resolving conflicts. 	 Displaying integrity of character; Leading with confidence in adverse situations; Demonstrating competence. 	 Active listening; Setting goals; Ensuring shared understanding. 				
	Developing	Creating a positive environment	Self-preparing	Developing others					
		 Defining the conditions for a positive environment; Fostering teamwork and cohesion; Encouraging initiative; Caring for the well-being of others. 	 Preparing for expected and unexpected challenges; Developing knowl- edge; Maintaining self- awareness. 	 Assessing development Developing work; Assist the learning of ir Counselling, coaching, Developing competence processes. 	idividuals; and mentoring;				
	a	Achieving results							
	Achieving	 Counselling, guidin Developing and imp Fulfilling tasks cons 							
		L							

Table 4 - Core competency model of the US Army.

Source: Adapted from Department of the Army (2006, pp. 2-7)

3. Methodology

This section of the article discusses the methodological procedure followed and the techniques and tools for collecting and processing data. The research analysis model includes eight dimensions corresponding to core competencies and a set of indicators and two independent variables: importance and frequency of use of competencies.

a. Characterization of the sample

The target population of the survey - the Commanders of Company level units⁷ (CLU) and Battalion level units⁸ (BLU) of the Operational Component of the System of Forces of the Army⁹ (COSFE) - comprises 125 elements, of whom 108 are CLU Commanders and 17 are BLU commanders (Exército Português, 2010).

Two samples were formed to conduct this research - through functional interviews and by using a questionnaire.

The sample of the survey by functional interview included seven officers¹⁰ from different Units, Establishments, Bodies (U/E/B) and Arms/Services of the Portuguese Army (Table 5).

Respondent	Rank	Duties	Unit		
R1	LtCol	Group Commander	GCC/BrigMec		
R2	LtCol	Group Commander	GAC/BrigRR		
R3	LtCol	Group Commander	GPE/FApGer		
R4	Maj	Battery Commander	BAAA/BrigMec		
R5	Maj	Squadron Commander	ERec/BrigInt		
R6	Сар	Company Commander	FOEsp/BrigRR		
R7	Сар	Squadron Commander	ERec/BrigMec		

Table 5 - Sample survey by functional interview.

Source: Author (2015).

With regard to the questionnaire sample, 61 of 125 possible answers (48.8%) were obtained. In terms of ranks, the questionnaire sample was distributed as follows: 47 officers with the rank of Cap (77.0%), eight officers with the rank of Maj (13.1%) and six officers with the rank of LtCol (9.8%).

The questionnaire sample is also representative of all combat duties in the COSFE. In this context, the sample largely refers to officers whose performance is framed within combat, movement and manoeuvre duties (52.5%). In contrast, the combat duty which presented the lowest percentage of answers was protection (6.6%) (Figure 2).

⁹ Commands of Large Units and Operational Units, Military Area Commands, General Support Forces and Emergency Military Support Forces (Decreto-Lei n.º 186/2014, 2014).

¹⁰ Captains (Cap), Majors (Maj) and Lieutenant Colonels (LtCol).

⁷ Company, Battery e Squadron.

⁸ Battalion and Group.

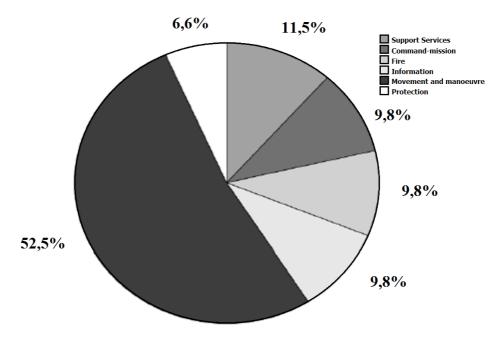


Figure 2 – Distribution of the questionnaire sample by combat duties.

Source: Author (2015).

b. Instruments

The questionnaire was used in an attempt to measure the importance¹¹ and frequency¹² of the competencies in the US leadership model, in the daily routine of an operational leader of the Portuguese Army. *The Statistical Package for Social Sciences* (SPSS) and *Microsoft Excel* software enabled the statistical and analytical treatment of the data obtained.

The semi-structured functional interviews aimed to assess the relationship between the concepts in the KSAO model and the core competencies in the US Army model, thus enabling to obtain qualitative information and the desirable complementarity of quantitative data from questionnaires.

c. Procedure

The strategy adopted was based on an approach to the different theories of reference concerning competency concepts, which translated into a list of various disciplinary contributions which, ultimately, conceptually enrich the term "competency".

¹¹ In a scale of 1 to 5, with 1 meaning "irrelevant" and 5 meaning "crucial".

 $^{^{\}rm 12}~$ In a scale of 1 to 5, with 1 meaning "never" and 5 meaning "always".

With regard to the surveys by interview, a content analysis was conducted, using a qualitative technique based on dimensions (competencies) and indicators (components) of the core competencies of the US Army model (Table 6). The combination of the competencies and attributes underlying the same model allowed for the formulation of a questionnaire.

Dimension	Indicator					
	• Establishing and communicating clear intentions and purposes.					
	Using appropriate methods of influence to energize others.					
T 1. (1	Providing purpose for the work.					
Leading others	Maintaining and enforcing high professional standards.					
	Balancing the mission and welfare of followers.					
	Creating and disseminating a vision of the future.					
	• Understanding the sphere, means and limits of influence.					
Extending influence	Developing trust.					
beyond direct authority and the chain of command	Negotiating, building consensus and resolving conflicts.					
	Creating and maintaining alliances.					
	• Demonstrating character, affirming institutional values, consistently, through actions, attitudes and communications.					
	Demonstrating "warrior ethos."					
	• Demonstrating commitment to the Nation, the Army, the Unit, the soldiers, the community and to international partners.					
Leading by example	Leading with confidence in adverse situations.					
	Demonstrating tactical and technical competence.					
	• Understanding the importance of conceptual skills and modelling those skills to others.					
	Seeking and being open to new and diverse ideas and views.					
	Listening actively.					
	Determining strategies for sharing information.					
	Employing engaging communication techniques.					
Communicating	Conveying thoughts and ideas to ensure shared understanding.					
	Making recommendations so others can understand the advantages of communication.					
	Being sensitive to cultural factors in communication.					

Table 6 - Dimensions and indicators.

Dimension	Indicator						
	Fostering teamwork, cohesion, cooperation and loyalty.						
	Encouraging subordinates to take initiative, responsibility and control.						
	Creating a learning environment.						
	Encouraging open and candid communications.						
Creating a positive envi- ronment	Encouraging fairness and inclusiveness.						
	Demonstrating care for follower well-being.						
	Anticipating people's duty needs.						
	Setting and maintaining high expectations for individuals and teams.						
	Accepting reasonable setbacks and failures.						
	Maintaining mental and physical health and well-being.						
	Knowing oneself (self-awareness and impact on others).						
	Evaluating feedback and making it part of work processes.						
	Expanding knowledge of technical, technological, and tactical areas.						
Self-Preparing	Expanding conceptual and interpersonal capabilities.						
	Analysing and organizing information to create knowledge.						
	Maintaining relevant cultural awareness.						
	Maintaining relevant geopolitical awareness.						
	Assessing the developmental needs of others.						
	Fostering the development and enrichment of duties and challenges.						
Developing of the sec	Counselling, coaching, and mentoring.						
Developing others	Facilitating ongoing development.						
	Supporting Institution-based development.						
	Building team or group skills and processes.						
	• Prioritizing, organizing, and coordinating taskings for teams or other groups or organizational structures.						
	Identifying and accounting for capabilities and commitment to task.						
	Designating, clarifying and deconflicting duties and responsibilities.						
	Identifying, allocating, managing and contending for resources.						
A chicking sutcome-	Removing work obstacles.						
Achieving outcomes	 Recognizing and rewarding good performances. Seeking, recognizing and taking advantage of opportunities to improve performances. 						
	Evaluating feedback and making it part of work processes.						
	Executing plans to accomplish the mission.						
	Identifying and adjusting the mission, tasks and organization to external influences.						

Table 6 - Dimensions and indicators (Continued).

Source: Author (2015).

The main objective of the questionnaires was to ascertain the importance and frequency of the competencies of operational leaders in the daily activity of the Commanders of the CLU and the BLU of the COSFE. The verification of the values presented by the variables (importance and frequency of use of competencies) relating to the indicators (competency components and actions) enabled the transformation of measurement scales in interim quarters (Q), resulting in a classification of competencies.

Thus, a value has been set for the two independent variables (measurement scales), that is, the importance and frequency of use of a particular component or action (Table 7). For example, a component or action whose importance is "2" and frequency is "4" will have a value of "3" (1 + 2).

Measurement	Importance							Frequ	lency	
Scale	1	1 2 3 4 5			1	2	3	4	5	
Value	1		2	2		0		4	2	

Source: Author (2015).

Based on the above values, a framework of transformation of components or actions (Table 8) was designed, with values resulting from the sum of the values corresponding to the importance and frequency obtained in the valuation. The transformation framework contains four *Q*, resulting from the combination of the values attributed to importance and frequency:

- Q1, corresponding to irrelevant components or actions (low importance and frequency);
- Q2, corresponding to critical components or actions (high importance and low frequency);
- Q3, corresponding to routine components or actions (low importance and high frequency);
- Q4, encompassing core components or actions (high importance and frequency).

The analysis of the competencies was conducted using the median of the respective components and actions. The classification of the competencies followed the same methodology used for the components and actions. To that end, and after transforming¹³ the components and actions into the respective Qs, the competencies were classified according to the following rationale:

¹³ Rounding was made by increments.

- Irrelevant competency: the majority of components and actions (> 50%) are irrelevant;
- Routine competency: the majority of components and actions (> 50%) are routine;
- Critical competency: the majority of components and actions (> 50%) are critical;
- Core competency: the majority of components and actions (> 50%) are core.

Table 8 - Method of transformation of the "imp	oortance" and "frequency" measurement scales in
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Medida		Importância		
		Escala/valor		
		1, 2, 3 = 1	4, 5 = 2	
Frequência	cala/val	1,2,3 = 0	Q1 (Irrelevante)	Q2 (Crítica)
		4, 5 = 2	Q3 (Rotina)	Q4 (Nuclear)

Source: Author (2015).

4. Presentation, analysis and discussion of results

a. Content analysis of the interview surveys

During the interviews, the officers interviewed mentioned several KSAO and competencies that characterize the performance of their duties. In order to confirm KSAO indicators and the most important competencies, a content analysis was prepared regarding KSAO and the competencies most mentioned by the officers interviewed (Table 9).

Table 9 - KSAO measured in the interview surveys.

	KSAO	Associated Competency	Freq (N = 7) (%)
Knowledge	Doctrine		100
	Tactical	 Self-preparing 	100
Kilowieuge	Technical	• Sell-preparing	60
	Operations		100
	Social skills		100
Skills	Interpersonal skills	Leading othersCommunicating	100
	Cognitive/conceptual skills		60
	Physical agility		60
	Communication	_	100
	Oral communication	_	100
Abilities	Evaluation	Communicating	60
	Coping with ambiguity	Leading by exampleExtending influence beyond	40
	Creativity	authority and the chain of command	40
	Problem solving		40
	Vision	_	40
	Character	_	60
	Knowing their limitations		40
	Honesty	_	40
	Awareness	_	40
	Trust	_	60
	Self-confidence	_	60
	Morals		40
Other features	Courage	Leading by example	40
	Availability	Self-preparing	60
	Resilience		40
	Pride		40
	Values		60
	Posture		60
	Physical condition		100

KSAO		Associated Competency	Freq (N = 7) (%)
Composites	Experience	Leading others	60
	Making decisions		100
	Planning	Leading others	100
	Counselling others	Creating a positive	80
Tasks	Inspiring confidence	environment	40
	Initiating actions	Achieving results	80
	Performing operations/exercises	Developing others	80
	Coordinating		80
	Motivating		60
	Caring for the well-being of others		60
	Planning operations/exercises	 Leading others 	80
	Planning and conducting training	 Extending influence beyond authority and the chain of 	100
Roles	Supervising	command	80
	Managing resources, time and risk	Achieving results	100
	Reference Model	Developing others	40
	Establishing conditions for success		40
	Representing the organization		60

Table 9 - KSAO measured in the interview surveys (Continued).

Source: Author (2015).

At the knowledge level, doctrine, tactical knowledge and operations were identified by all respondents. It should be noted that technical knowledge (60%) is only seen as important by CLU commanders. The data collected reflect (naturally, because we are dealing with operational leadership) a major concern by respondents with the subjects that characterize their "core business". Knowledge is associated with the "self-preparing" competency.

With regard to skills, respondents favour social and interpersonal competencies (100%), something which is closely related to HR, as a determining factor in the success of organizations. Skills are related to the core competencies "leading others" and "communicating".

Within the framework of competencies, communication (including verbal) was mentioned by all respondents as crucial to the tasks and duties performed. Also worth mentioning are physical agility, evaluation (includes judgement) and character, with a rate of 60%. The remaining competencies were mentioned by 40% of respondents. Abilities are associated with the core competencies "communicating", "leading by example" and "Extending influence beyond authority and the chain of command."

Concerning other characteristics, it is worth noting that physical condition was identified by all respondents as essential. Trust, self-confidence, dedication, values and posture presented a rate of 60%. Other characteristics include a diverse set of qualities and virtues that are important to the core competencies "leading by example" and "self-preparing".

With regard to composites, experience was mentioned by 60% of respondents, associated with the core competency "leading others."

From the set of tasks performed by respondents, the tasks "decision making" and "planning" are worth highlighting (100%). "Counselling others," "initiating actions", "performing operations and exercises" and "coordinating" were mentioned by 80% of respondents, also proving important in the performance of duties.

Within the roles played by respondents, "planning and conducting training" and "managing resources, time and risk" are noteworthy, as they were mentioned by all respondents. Other roles, such as "supervising" and "planning operations and exercises" were also significantly relevant, with rates of 80%.

The analysis of the set of interviews allows us to suggest that, within operational leadership, certain KSAO are more important than others. However, in general, the complex relationships between KSAO and competencies are clear. Significant differences were not detected between the two types of positions under analysis (except in relation to the importance of technique in the knowledge-related KSAO).

b. Internal consistency analysis by the dimensions of the core leadership competency model of the US Army

The determination of the internal consistency values of the categories and respective competencies was achieved through Cronbach's alpha¹⁴. Regarding the reliability statistics (Table 10), the highest value (0.86) was found in the competency "leading others" and the lowest (0.69) in the competency "self-preparing", which gives the questionnaire an acceptable consistency.

¹⁴ Parameter revealing the level of precision between each competency component.

Category	Competency	Cronbach's alpha	Cronbach's alpha (mean)	Number of Components
	Leading others			
	Extending influence beyond	0.86		6
*	authority and the chain of	0.82		4
Leading	command	0.76	0.82	7
	Leading by example	0.84		6
	Communicating			
	Creating a positive environment	0.78		9
Developing	Self-preparing	0.69	0.78	8
	Developing others	0.81		6
Achieving	Achieving results	0.83	0.83	10

Table 10 - Reliability statistics of the questionnaires.

Source: Author (2015).

c. Content analysis of questionnaire surveys

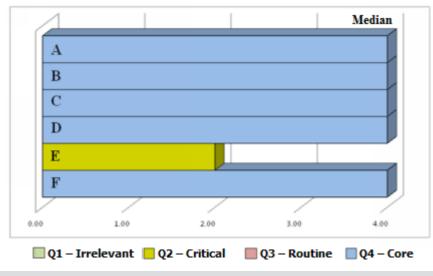
• Q Distribution

To answer DQ1 and DQ2, the data collected are presented by applying a processing method to translate the "importance" and "frequency" indicators into Q.

- Category "leading"
 - Competency "leading others"

The competency "leading others", comprising six components and actions, was classified as core (Q4), as most of its components revealed high levels of importance and frequency (Figure 3).

It was found that the component "creating and disseminating a vision of the future" is critical (Q2), that is, not very frequent, although very important. This finding may be related to the short planning horizon and reduced strategic vision that usually characterizes the tactical level.

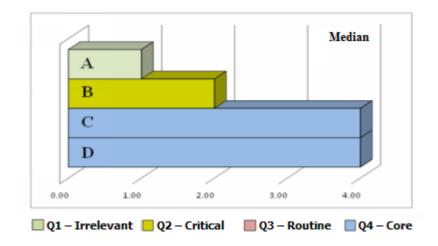


- A Balancing the mission and welfare of followers (Q4)
- B Maintaining and imposing high professional standards (Q4)
- C Using appropriate methods of influence to energize others (Q4)
- D Providingpurposefor the work (Q4)
- E Creating and disseminating a vision for the future (Q2)
- F Establishing and communicating clear intentions and aims (Q4)]



• Competency "Extending influence beyond authority and the chain of command"

The competency "extending influence beyond authority and the chain of command" consists of four components and actions. It is a core competency (Q4) due to the high importance and frequency of the components "building trust" (Q4) and "understanding the sphere, means and the limits of influence" (Q4). As it is classified as critical, the component "negotiating, building consensus and resolving conflicts" (Q2) should also integrate the competency model (Figure 4). With regard to this last component, although not very frequent in daily activity, the results evidence its high importance.



- A Creating and maintaining alliances [Q1)
- B Negotiating to achieve understanding, generating consensus and resolving conflicts (Q2)
- C Developing trust (Q4)
- D Understanding the sphere, means and limits of influence (Q4)

Figure 4 - Classification of the components and actions of the competency "extending influence beyond authority and the chain of command."

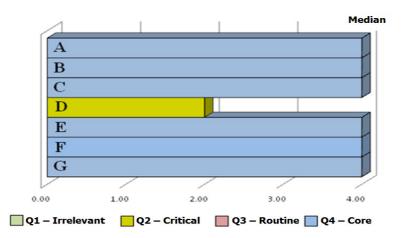
Source: Author (2015).

• Competency "leading by example"

This competency, represented by seven components and actions, was classified as core (Q4), as indicators showed high frequency and importance, except for the component "leading with confidence in adverse situations", which was classified as critical (Q2) (Figure 5). Regarding the latter component, its low frequency is probably related to the fact that respondents are not permanently in military operations or high intensity theatres.

Competency "communicating"

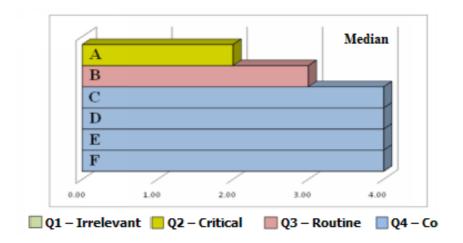
This fourth and final competency of the "leading" category brings together six components or actions. It was found that this is a core competency (Q4), resulting from the classification obtained by four of its components. A critical component (Q2) was also found - "being sensitive to cultural factors in communication" - and a routine component (Q3) - "making recommendations to others so that they can understand the advantages of communication" (Figure 6). With regard to the critical component (Q2) determined, its low frequency may be associated with participation in multinational operations or peace support missions. As for the identified routine component (Q3), it may be associated with practical issues intrinsic to the work context.



- A Demonstrating character by affirming institutional values consistently, through actions, attitudes and communications [Q4]
- B Demonstrating commitment to the Nation, the Army, soldiers, the community and to international partners (Q4)
- C- Demonstrating tactical and technical knowledge and skills (Q4)
- D Leading with confidence in adverse situations (Q2)
- E Seeking to be open to new and diverse ideas and points of view (Q4)
- F Demonstrating "warrior ethos" (Q4)
- G Understanding the importance of conceptual skills and modelling those skills to others (Q\$)

Figure 5 - Classification of the components and actions of the competency "leading by example"

Source: Author (2015).



- A Being sensitive to cultural factors in communication (Q2).
- B Making recommendations so others can understand the advantages of communication (Q3).
- C Conveying thoughts and ideas to ensure shared understanding (Q4).
- D Employing engaging communication techniques (Q4).
- E Determining strategies for sharing information (Q4).
- F Listening actively (Q4).

Figure 6 - Classification of the components and actions in the competency "communicating". <u>Source</u>: Author (2015).

- Category "developing"
 - Competency "creating a positive environment"

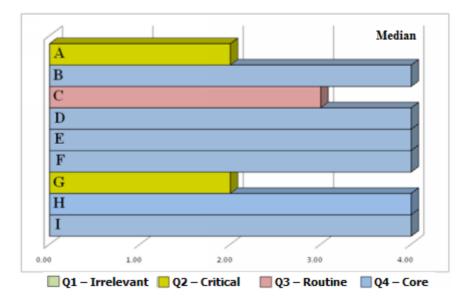
With regard to this competency, it was found that most of its components are core (Q4), with the exception of the components "creating a learning environment" and "accepting reasonable setbacks and failures", classified as critical (Q2), and "anticipating people's duty needs", which proved to be a routine component (Q3) (Figure 7).

With regard to the routine component (Q3) "anticipating people's duty needs", its high frequency is proof of the importance of subordinates to operational leaders, who express concern about the conditions of their work environment on a daily basis.

An analysis of the critical component (Q2) "creating a learning environment" revealed it to be truly important; however, in an operational environment military personnel are required to

have high performance standards for the fulfilment of tasks and missions, which empirically reduces the situations that require learning new tactics, techniques or procedures. In this context are included, for example, the lessons learned.

The critical component (Q2) "accepting reasonable setbacks and failures" reveals that operational leaders are efficient because they tend to commit faults sporadically, accepting the consequences and improving processes.



- A Creating a learning environment (Q2).
- B Fostering teamwork, cohesion, cooperation and loyalty (Q4).
- C Anticipating people's duty needs (Q3).
- D Encouraging subordinates to take initiative, responsibility and control (Q4).
- E Encouraging open and candid communications (Q4).
- F Encouraging fairness and inclusiveness (Q4).
- G Accepting reasonable setbacks and failures (Q2).
- H Demonstrating care for follower well-being (Q4).
- I Setting and maintaining high expectations for individuals and teams (Q4).

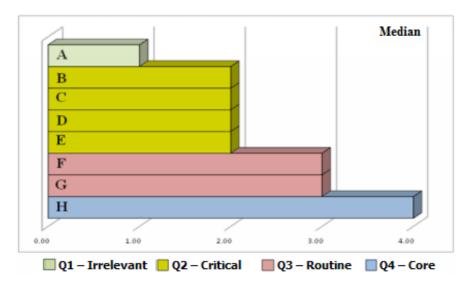
Figure 7 - Classification of the components and actions of the competency "creating a positive environment."

Source: Author (2015).

• Competency "self-preparing"

This competency translated into eight components or actions. This is a critical competency (Q2) due to the classification of most of its components or actions (Figure 8). Despite its overall classification, this competency encompasses a core component (Q4) - "maintaining mental and physical health and well-being" and two routine components (Q3) - "knowing oneself (self-awareness and impact in others)" and "evaluating feedback and making it part of work processes."

The self-knowledge of operational leaders was identified as a routine component (Q3), which in itself is indicative of the frequency of use of introspection and the ability to evaluate the impact of their behaviours and attitudes on subordinates, that is, the influence (leadership) they exercise. This aspect was categorized as routine.



- A Maintaining relevant geopolitical awareness (Q1).
- B Maintaining relevant cultural awareness (Q2).
- C Analysing and organizing information to create knowledge (Q2).
- D Expanding conceptual and interpersonal capabilities (Q2).
- E Expanding knowledge of technical, technological, and tactical areas (Q2).
- F Evaluating feedback and making it part of work processes. (Q3).
- G Knowing oneself (self-awareness and impact on others (Q3).
- H Maintaining mental and physical health and well-being (Q4).

Figure 8 - Classification of the components and actions of the competency "self-preparing". <u>Source</u>: Author (2015).

The second routine component (Q3) identified, "evaluating feedback and making it part of work processes" demonstrates that operational leaders in the Portuguese Army very often place high importance on the impact of their behaviours, actions and attitudes.

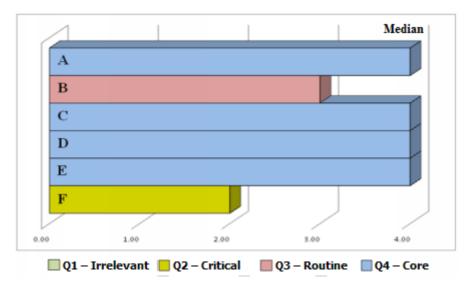
Regarding the critical component (Q2) "maintaining relevant cultural awareness", leaders attach great importance to awareness of other cultures, although they do not use it often (in multinational environments and peace support missions). Critical components (Q2) "expanding knowledge of technical, technological, and tactical areas", "analysing and organizing information to create knowledge" and "expanding their conceptual and interpersonal capabilities" indicate that both the basic training and further training provided by the Army to its leaders is current and appropriate.

The irrelevant component (Q1) identified may take on some importance in very specific situations, particularly in operations outside the national territory.

Competency "developing others"

This last competency in the category "developing" consists of six components. The analysis of the median allows for it to be classified it as core (Q4), as the majority of its components are considered of high importance and frequency, except for the components "fostering the development and enrichment of duties and challenges" and "building team or group skills and processes", which were revealed to be routine (Q3) and critical (Q2), respectively (Figure 9).

The routine component (Q3) identified reveals that operational leaders are often concerned about the development of the work, about challenges and about their valuation. The critical component (Q2) "building team or group skills and processes" is not frequent, which indicates some linearity in the constitution of the subunits and in their assigned tasks and missions.



- A Assessing the developmental needs of others (Q4).
- B Fostering the development and enrichment of duties and challenges (Q3).
- C Counselling, coaching, and mentoring (Q4).
- D Facilitating ongoing development (Q4).
- E Supporting Institution-based development (Q4).
- F Building team or group skills and processes (Q2).

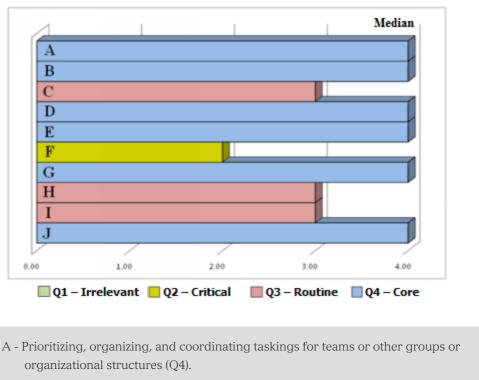
Figure 9 - Classification of the components and actions of the competency "developing others."

Source: Author (2015).

Category "achieving" - competency "achieving outcomes"

The third category of the competency model consists of a unique competency that, in turn, is based on ten components. This competency is classified as core (Q4), as most of its components are of high importance and frequency. A critical component (Q2) and three routine components (Q3) were also found (Figure 10).

With regard to the routine components (Q3), all are related to the daily tasks conducted in subunits, which confirms their frequency and association with "routine". The integration of feedback on work processes (Q3) is related to the component "evaluating feedback and making it part of work processes" (Q3) of the "self-preparing" (Q3) competency classified above.



- B Identifying, allocating, managing and contending for resources (Q4).
- C Identifying and accounting for capabilities and commitment to task (Q3).

2.00

D - Executing plans to accomplish the mission (Q4).

1.00

🔲 Q1 – Irrelevant 📒 Q2 – Critical

- E Recognizing and rewarding good performances (Q4).
- F Removing work obstacles (Q2).

organizational structures (Q4).

 \mathbf{A} B C D E F G H

.1

0.00

- G Seeking, recognizing and taking advantage of opportunities to improve performances (Q4).
- H Evaluating feedback and making it part of work processes (Q3).
- I Designating, clarifying and deconflicting duties and responsibilities (Q3).
- J Identifying and adjusting the mission, tasks and organization to external influences (Q4).]

Figure 10 - Classification of the components and actions of the competency "achieving outcomes".

Source: Author (2015).

The only component or critical action (Q2) identified - "removing work obstacles" proves that operational leaders accomplish their mission without often needing to bypass obstacles or performing unnecessary tasks.

• Analysis of possible significant differences in the sample

After identifying competencies by Q, an attempt was made to establish a relationship with the type of positions under analysis. The data collected by questionnaire point to the absence of significant differences. In general, it was found that senior officer respondents assigned slightly higher values to the variables (importance and frequency), without however being differentiated enough to allow for an analysis. DQ3 is thus answered.

d. Competency profile of operational leaders

This section illustrates competencies by components and actions, in particular core competencies (Q4) and critical competencies (Q2). In order to design the profiles of the different competencies of the model, the components or actions evaluated as "irrelevant" were excluded.

• Category "leading"

Competency "leading others"

The competency "leading others" is a key competency (core) for operational leaders, as evidenced unequivocally by the statistical analysis and reinforced by the content of the functional interviews.

In this context, all components of this competency must be included in the core competency profile including the component "creating and disseminating a vision of the future" (Q2) that, despite its low frequency, is of particular importance for maintaining high motivational levels (Figure 11).

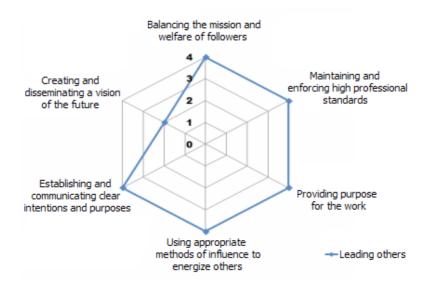


Figure 11 – Profile of the core competency "leading others"

Source: Author (2015).

With regard to this competency, the component "creating and maintaining alliances" was excluded, as it was considered "irrelevant" (Q1). However, the components "building trust", "understanding the sphere, means and limits of influence" (both Q4) and "negotiating, building consensus and resolving conflicts" (Q2) must be included in this core competency profile (Figure 12).

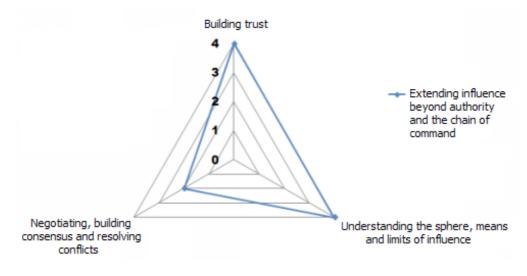


Figure 12 - Profile of the core competency "extending influence beyond authority and the chain of command."

Source: Author (2015).

• Competency "leading by example"

Concerning the competency "leading by example", all its components and actions are part of the competency profile of operational leaders, which is indicative of its importance (all components are Q4 except "leading with confidence in adverse situations" - Q2) (Figure 13).

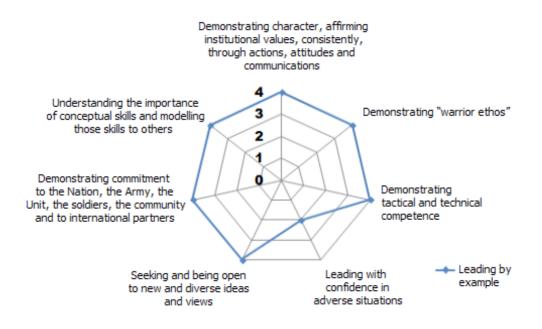


Figure 13 - Profile of the core competency "leading by example". Source: Author (2015).

• Competency "communicating"

"Communicating" is classified as core (Q4) (Figure 14). Leaders communicate effectively through the clear expression of ideas and by actively listening to others. Communication is essential for all leadership competencies.

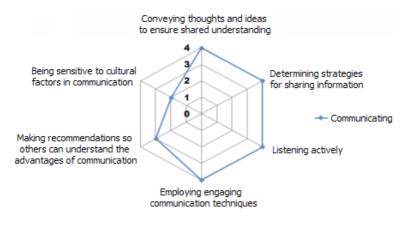


Figure 14 - Profile of the core competency "communicating".

Source: Author (2015).

- Category "developing"
 - Competency "creating a positive environment"

Most components of this competency are core (Q4), with the exception of the component "creating a learning environment" and "accepting reasonable setbacks and failures", classified as critical (Q2) and "anticipating people's duty needs", which proved to be routine (Q3) (Figure 15).

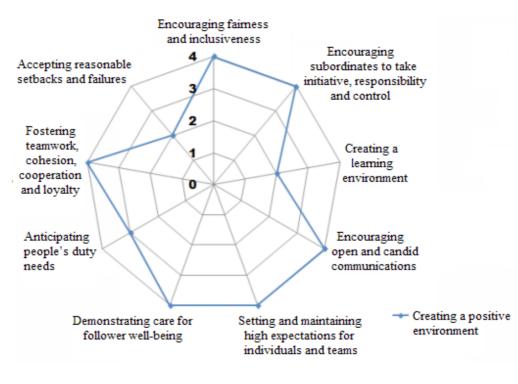


Figure 15 - Profile of the core competency "creating a positive environment." Source: Author (2015).

• Competency "self-preparing"

This competency is critical (Q2), as it includes a core component (Q4) - "maintaining mental and physical health and well-being" and two routine components (Q3) - "knowing oneself" and "evaluating feedback and making it part of work processes" (Figure 18). DQ4 is thus answered, given this is the only critical competency identified.

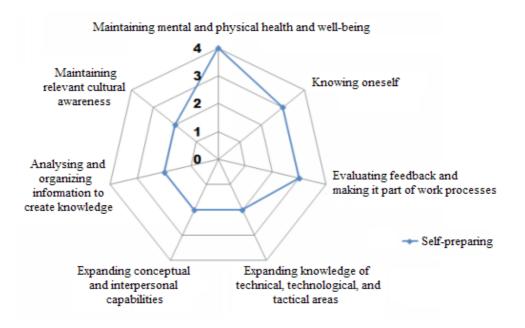


Figure 16 - Profile of the critical competency "self-preparing" Source: Author (2015).

• Competency "developing others"

This final competency of the category "developing" is core (Q4), as most of its components are considered of high importance and frequency, except for the components "assessing the developmental needs of others" and "supporting institution-based development" which proved to be critical (Q2) and routine (Q3), respectively (Figure 17).

In terms of qualitative data, most respondents considered this competency very important, embodied in KSAO such as tasks and roles.

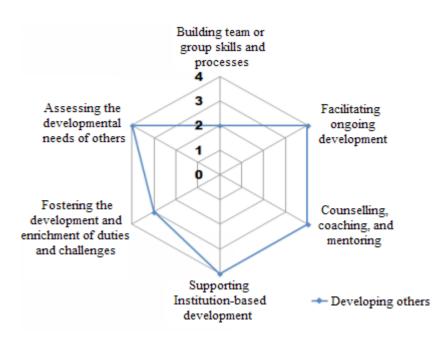


Figure 17 - Profile of the core competency "developing others."

Source: Author (2015).

Category "achieving" - competency "achieving outcomes"

The final competency in the competency model proved to be core (Q4), although including a critical component (Q2) and three routine components (Q3) (Figure 18). "Achieving Outcomes" is a leader's ultimate goal.

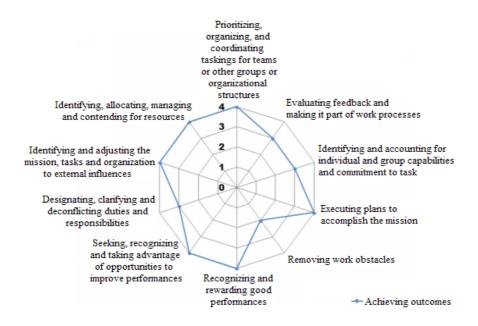


Figure 18 - Profile of the core competency "achieving outcomes". Source: Author (2015).

• Core competency profile

In response to the CQ, this analysis concludes with the presentation of the core competency profile resulting from the application of the core competency model of the US Army to the Portuguese Army (Table 11 and Figure 19).

Category	Competency	Importance	Frequency	Typology
	Leading others	High	High	Core
Leading	Extending influence beyond authority and the chain of command	High	High	Core
	Leading by example	High	High	Core
	Communicating	High	High	Core
	Creating a positive environment	High	High	Core
Developing	Developing others	High	High	Core
Achieving	Achieving outcomes	High	High	Core

Table 11 – Core competency profile of operational leaders

Source: Author (2015).

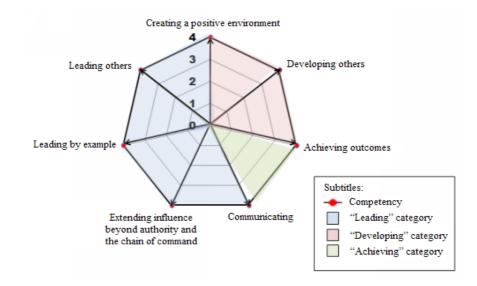


Figure 19 - Core competency profile for each competency category.

Source: Author (2015).

Conclusions

Throughout this research, it is worth noting the conceptual diversity and profusion of structures and competency models advocated by the various authors reviewed. In building a concept of competency that can be taken as a reference for the Portuguese Army, it became apparent that the concept showed a problem of polysemy. Notwithstanding the findings of this research, mention should be made of the systematization achieved in relation to competencies, namely: a superior performance in a specific task or activity; a defined standard of requirements; the regularity and frequency of the observed behaviours; and willing, not just possessing a specific set of KSAO.

It is through an operational perspective of combining KSAO and competencies that the competency model is transposed and implemented in an organizational context. The competency model should constitute a tool and not an end in itself.

The overall objective of this study was to identify the core competencies of the operational leaders of the Portuguese Army who, along with critical and routine competencies, are the embodiment of the competency model of the command positions of the CLU, BLU and COSFE. To this end, we used the core competency model of the US Army, which presupposes the existence of eight competencies comprising the analysis dimensions.

The preparation and development of the theme were aimed at obtaining an answer to the CQ: "What are the core competencies in the competency model of operational leaders that enable them to achieve the performances required by the Portuguese Army?"

The DQ were gradually answered throughout the text. With regard to DQ1 "What are the most important competencies of operational leaders in the Portuguese Army?", competencies were identified (Table 11) that proved critical to the performance of the duties of operational leaders.

With regard to DQ2 "What are the most common competencies of operational leaders in the Portuguese Army?", it was found that importance and frequency are equally high, that is, the identified competencies are used continuously in the daily activity of operational leaders, with the exception of the competency "self-preparing" which was considered to be critical (Q2).

With regard to DQ3 "What are the differences between the competencies of Company/ Battery/Squadron Commanders and Battalion/Portuguese Army Group Commanders?", after identifying the competencies by Q, an attempt was made to establish a relationship with the type of positions under review. However, the data collected from the questionnaires and functional interviews point to the absence of significant differences.

The answer to DQ4 "What are the key competencies for the duties of Company/Battery /Squadron Commanders and Battalion/Portuguese Army Group Commanders?" was found by taking into account the Q2 (critical) competency identified - "self-preparing".

As concerns the CQ, the core competencies (Q4) of the operational leaders of the Portuguese Army were ascertained, listed and described by verifying a set of indicators

(components or actions) and two independent variables - the importance and frequency of use of competencies. Supporting and reinforcing the findings, the content analysis of the functional interviews conducted allowed us to reveal certain interrelated KSAO that integrate the core competencies.

It is considered that the proposed objective has been achieved in general, through the core competency profile designed. It is worth noting that, while no significant differences were found between the positions analysed, the applicable core competency model is common to the two levels of command under study.

Despite the fact that a core competency model of operational leaders of the Portuguese Army has been achieved, different constraints limit effective application. First, the model requires assessment and validation at the individual and institutional level. The study developed was not intended to design a final model (tested and validated), but to build a sustainable framework that can be improved by using other methodologies. Thus, we suggest the inclusion of competency models of other forces, businesses or institutions. The model designed must now be tested in a work context and the respective feedback collected from stakeholders.

A second constraint relates to the imperative paradigm shift from traditional dutiesbased HR management to a model based on competencies. This evolutionary process will undoubtedly contribute to the enhancement of competencies at the organizational level.

With regard to design, despite the efforts made to systematize the most relevant and structural concepts, this study does not address the problems arising from the polysemy observed.

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