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# RESILIENCE: A MULTI LEVEL APPROACH AND ITS RELEVANCE FOR THE DEVELOPMENT OF ORGANIZATION FOCUSED RESILIENCE FRAMEWORKS

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*Conceptual definitions are of utmost importance when identifying and describing dimensions and variables needed for conceptual operationalization. That is all the more true for the very fashionable term of resilience considering the litmus test it needs to survive under the constraints and challenges raised by the current Covid-19 pandemics. Consequently, the tenet of this article is that for concepts to become reality, they first need to be translated into formal standards and frameworks guiding action at multiple levels. As a result, the aim of the paper is that, by employing a system based approach and a multi-level investigation into the concept of resilience to lay the minimum grounds for nuancing the definition of resilience at organization level.*

**Key words:** *resilience, multi-level approach, socio-economic environment, people resilience, organization resilience.*

## 1. INTRODUCTION

Crises and disturbing events are the litmus test validating or not whether organizations are resilient enough to withstand adversity and prosper. Establishing organizational resilience maturity levels and assessing those is where difficulty lies. The conundrum does not necessarily reside in the absence of such standards since so far two such standards are in

place, namely the British Standard 65000, Guidance for Organizational Resilience (BSI, 2014), and the ISO 22316:2017, Security and resilience – Organizational resilience – Principles and attributes (ISO 22316:2017). It is rather the definition each organization provides for resilience and the operationalization of the concept into relevant dimensions and variables based on which assessment indicators along with the right measurement

tools can be established that influence the applicability of the concept into practice. The aforementioned standards list and describe the main dimensions of the concept based on very similar definitions highlighting resilience as organizational ability (British Standards Institution, 2018) or capacity (ISO 22316:2017) to “anticipate, prepare for, respond and adapt” or “absorb and adapt” under changing circumstances in order not only to survive, but also to prosper. Nonetheless, as it always happens with general frameworks or with benchmarking initiatives, they fail to actually address the nuances that provide for the tangible application of the definition of resilience in particular organizations. In other words, a general definition and manner of approaching aspects related to survivability and thriving endangers the identification of individual differences that may or not contribute to the overall goal of securing a resilient posture. Consequently, the assumption underlying the current article is that based on a multi-level approach to the general concept of resilience, the key dimensions and variables are identified. The paper does not aim at a comprehensive approach, but it rather focuses on highlighting a number of key aspects that need to be taken into account when focusing on the development of a specific resilience framework for a given organization.

As a result, when identifying the key areas for conducting the multi-level approach to organizational resilience, the article starts from the following assumptions based on which the chapters are developed:

1. Organizations are open systems which means that their definition of resilience must be first and foremost approached from a threefold perspective: the resilience of inputs, resilience of throughput and resilience of outputs and outcomes.
2. Organizations are highly dependent on the environmental factors that have an impact on their strategic direction and performance outputs and outcomes. Consequently, understanding resilience from a socio-economic perspective, but also from a national/state perspective is of utmost importance when identifying, refining and applying a specific definition or organizational resilience.
3. From the same system-based perspective, organizational throughput is made of people, technology, structure and processes. Hence, defining and operationalizing these components in terms of their resilience and in relation with the organization’s position within its external environment and the resilience of

its outputs and outcomes from the perspective of any organization's goal to secure competitive advantage contributes to better understanding of the key areas to be taken into account when developing standards in the field.

## 2. MAIN TAKEAWAYS FROM A SYSTEM BASED APPROACH TO RESILIENCE

Applying a system based model to understanding and defining resilience allows for the identification of the relevant actors and the interdependencies among those and thus leads to understanding the complexity of the whole system and its dynamics. Furthermore, as Marleen De Smedt, Enrico Giovannini and Walter J. Radermacher (in Stiglitz, J., J. Fitoussi and M. Durand, 2018) note, the positive or negative

non-linearities, self-organization principles, emerging features, "tipping points" expose the system to endogenous and exogenous impact factors whose interactions define the resilience level of the system. The same authors note that resilience, along with risk and vulnerability are the key concepts underpinning a system's based approach. Furthermore, they identify resilience as the main pillar of any system and its related monitoring efforts as the means informing a policy framework in this respect.

The system model to resilience has the advantage of applying the seemingly simple loop logic of input, throughput, output and outcome to a complex interplay of varying factors and actors contributing to viewing resilience as both a trait of system components and an outcome.



**Fig. 1.** Basic System Components

In relation with input, establishing resilience as a strategic goal (i.e. system direction in Figure no. 2) is heavily influenced by the results any analysis of the external environments generates in terms of defining the resilience of factors like political will and government

stability, continuity, geo-political stability, sociological factors like population age, distribution and culture, legal factors like the rule of law and the stability of the legal framework, the evolution of technology relevant for the type of industry to which an organization

belongs, environmental factors like climate change and associated global initiatives in the field in terms of their probability to influence a given organization and their impact. The narrative employed by the analysis is also important, in our opinion, because references to risks inherent in environmental factors as vulnerabilities, challenges or opportunities prominently influences the definition of resilience at organization level and the thereafter initiatives.

From this perspective, the British Standard 65000, Guidance for Organizational Resilience (BSI, 2014) represents a good starting point for discussing throughput, even though, in our opinion, in quite a limited manner since it only focuses on leadership, people and processes. From this point of view, taking into account the traditional outlook on the throughput of a system and defining also the resilience of organizational structure and technology employed to conduct organizational processes contributes to identifying the shades of grey that inform on the fine differences between various organizations and hence contributes to factoring them in when it comes to defining the resilience of a specific organization.

Concerning the result component of a system's view, we believe that the capacity of

an organization to demonstrate resilience in terms of recovering from a disruptive event and return to its normal state is provided by the clear-cut relationship between the organization's strategic direction, its definition of outputs and the measurement criteria employed for sustaining that link. Nonetheless, we believe that an organization's definition of outcomes and its work towards permanently aligning it to its strategic direction as informed by the resilience of external factors and by the actions sustaining the resilience of its key components influence its capacity to thrive. For example, if we define the goal and hence the outcome of an organization as securing people's well-being, then the verb and the noun phrase should be properly operationalized. Thus, an organization's resilience from the perspective of such envisaged outcome should be understood as possibly people's security (e.g. personal safety, safe access to resources), assurance of basic materials for living a good life (e.g. access to goods, resources of quality and the right amount, adequate livelihood standards), health (e.g. access to unpolluted water and air, feeling well and strong), social relation (e.g. cohesion, mutual respect, ability to help other people), and freedom of choice and action (Constanza Robert, 2008).

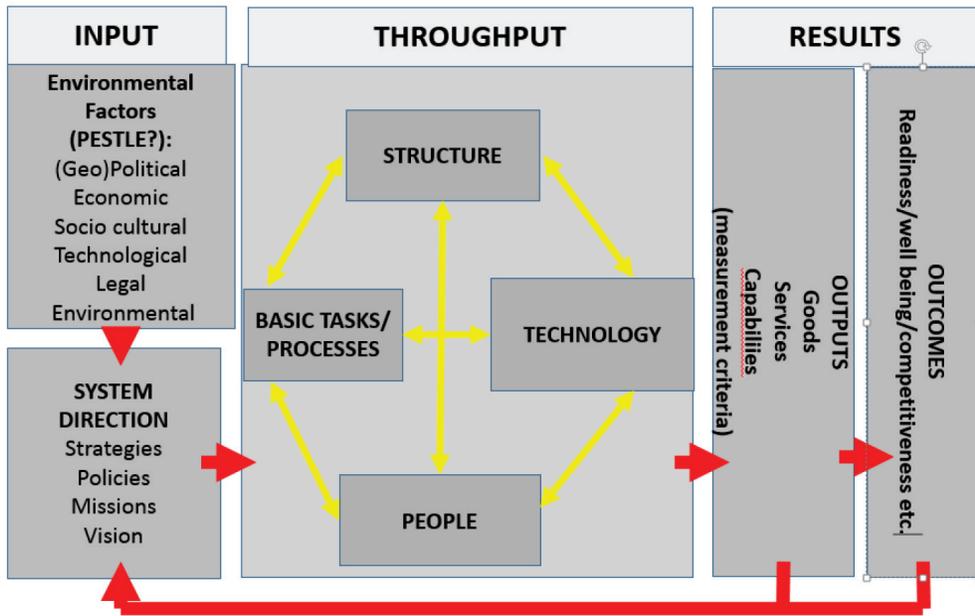
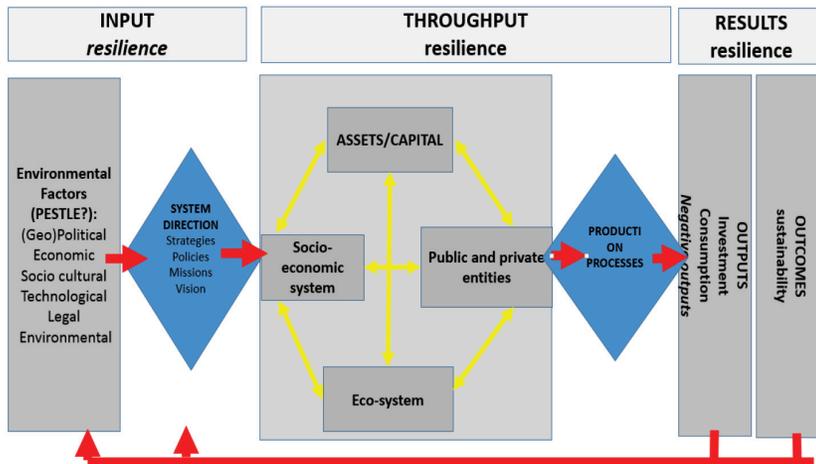


Fig. 2. Organization focused system view

In conclusion, translating the definition of resilience into a system view of an organization or of a nation/society generates increased complexity. Despite that, the possibility of capturing the critical interdependencies and hence the thresholds where tipping points may emerge and lead to the breakdown or recovery and possibly transformation of an

organization represents the major advantage of employing such a model of analysis. In this respect, the proposal of Constanza et al. (1997) of an economic ecological system may be a better contributor to defining organizational resilience as a complex multi-level concept that builds upon a plethora of relationships that are both overt and covert.



**Fig. 3.** An economic ecological system based model,

Adapted from Costanza, R., J. C. Cumberland, H. E. Daly, R. Goodland, and R. Norgaard. 1997. *An Introduction to Ecological Economics*. St. Lucie Press, Boca Raton, 275 pp.: <https://clf.jhsph.edu/sites/default/files/2019-10/robertcostanza-presentation-event.pdf>.

All of the above considered, we will focus in the chapters to follow on those elements that, as a result of the aim of the current article, remain general enough to allow for the identification of specific features when addressing them at the level of a real organizations. Consequently, we will only discuss socio-economic resilience, people resilience and organizational resilience in order to highlight the need for nuancing the concept of resilience when it comes to translating general standards or frameworks in the field into specific organizational frameworks.

### 3. SOCIO-ECONOMIC RESILIENCE

Socio-economic resilience of states is approached in a Joint Research

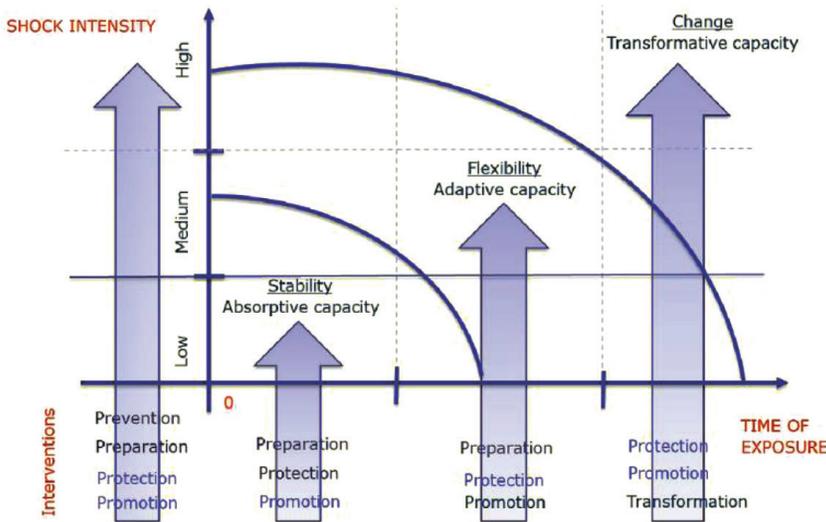
Centre resilience framework (Manca, A. R. et al., ) and furthered in a study that evaluates the behavior of EU member states to the financial and economic crisis unfolded between 2007 and 2012 (JRC, 2018) from a resilience perspective. According to the study (Joint Research Center, 2018: 13), a country's resilient behavior can be analyzed in terms of a number of indicators that can be broken down from a set of general resilience characteristics describing the respective country's education, digital development, innovation and R&D, labor market policies and support, gender equality, government expenditures, macro-economic performance, financial performance, market development and regulation,

quality in government, quality of life, regulatory environment, people’s trust in state institutions, etc.

The JRC resilience framework defines resilience as the ability of society or of a system to continue delivering well-being sustainably despite de major shocks or hindrances it may encounter.

According to the JRC framework, societal resilience requires three types of capacity, depending on the level of stress induced (i.e. “disturbance intensity”) and the time the latter manifests (“time of exposure”) (as presented in Figure 4): absorptive capacity, which requires the

employment of capabilities to resist the stress of an event that manifests at a rather low level of intensity and for a short period of time; adaptive capacity, which consists in the ability to be flexible and generate incremental changes that do not contribute in any way to increasing the level of discomfort already manifest; transformative capacity required when the extent of damage inflicted or the time length the disturbance lasts makes it no more possible to manage the system in an as is form and hence generates the need to engineer large scale changes.



**Fig. 4.** Capacities needed for societal resilience

Source: Manca, A.R., P. Benczur and E. Giovannini (2017), “Building a scientific narrative towards a more resilient EU society – Part 1: A conceptual framework”, *JRC Science for Policy Report*, No. 106265, Publications Office of the European Union, Luxembourg,

[http://publications.jrc.ec.europa.eu/repository/bitstream/JRC106265/jrc106265\\_100417\\_resilience\\_scienceforpolicyreport.pdf](http://publications.jrc.ec.europa.eu/repository/bitstream/JRC106265/jrc106265_100417_resilience_scienceforpolicyreport.pdf).

Worth noting is the following, according to Stiglitz et al. (2018): “...the three types of capacity often act simultaneously, at multiple levels (individuals, community, regional, country, institutions) and with potentially different intensity at different levels. In other words, they are different perspectives of the same reality rather than opposing or competing components.”

The strategies for sustaining the three types of capacities are prevention (e.g. mitigation or transfer measures to reduce identified risks), preparation/ protection (e.g. management reserves for unforeseen situations, establishment of coalitions/agreements), promotion (e.g. investments in assets, policies aimed at facilitating flexibility in various socio-economic areas) and transformation (e.g. policies focused on an outcome and their inherent gradual implementation). Depending on the envisaged capacity, the strategies can be coupled. Thus, to maintain existing stability, prevention, preparation/ protection, and promotion strategies are needed. To achieve stability after a stressful event, as well as to ensure flexibility to adapt, preparation/ protection and promotion strategies must be put in place. Last but not the least, to enhance transformative capacity, protection, promotion and transformation initiatives must be employed.

One important idea expanding the concept of resilience proposed by the JRC framework is that of “bouncing forward”, namely the capacity of an entity to seize the opportunity and develop better in comparison with the pre-crisis situation (Joint Research Center).

Another aspect worth noting when it comes to discussing socio-economic resilience is its inherent relation with state/national resilience. In this respect, government continuity is one key aspect guaranteeing stable definitions of resilience at societal and economic level, and hence at organization level. Another one is related to the existence, dissemination and internalization of a commonly agreed, enacted and endorsed set of values like human rights, equality, rule of law, democracy, etc. In our opinion, the absence of these two renders the operationalization impossible.

#### 4. PEOPLE RESILIENCE

According to the British Standard 65000, Guidance for Organizational Resilience (BSI, 2014), the people dimension of organizational resilience refers to the following variables:

- Culture (i.e. shared values and behavior, consolidation of trust and employee engagement);
- Community (i.e. the organization’s relations as part of a community, social responsibility)

- Awareness and Training (i.e. viewed by levels);
- Alignment (i.e. in terms of exogenous factors influence and their related threats, risks, opportunities).

In our opinion, while this standard highlights one key component in the throughput area of the organizational system, it is not enough to adequately describe what is meant by people resilience. Therefore, we believe that approaching this dimension from the perspective of individual resilience, community/group resilience and societal resilience may be more beneficial for describing resilience at organization level and in relation with the external environmental inputs.

**Individual resilience** is anchored in a value system (Coutu, 2021:10). The latter's strength is validated by the extent to which people espousing it show willingness and demonstrate capacity to adhere to it in times of difficulty. Values allow for the interpretation of reality. Loyalty to them when undergoing challenging situations is what tests people's belief in them and shows their worth. In this respect, the way people choose to find meaning in what they encounter and thus accept reality as shaped by external factors and perceived through individually honed values makes the difference between resilient and non-resilient individuals.

As Diane Coutu (2021:14) notes, apart from the capacity to find meaning in adversity, the ability to improvise, along with the capacity to persist and endure in a course of action regardless of the level of strain endured are the hallmarks of individual resilience. However, there are nuances to the statement above. First, in relation with the capacity to improvise or to demonstrate creativity it is worth noting that it can be enacted as long as basic knowledge in the field where improvisation is required is mastered, while the use of associated tools and techniques becomes second nature. Nonetheless, there are limits to the manifestation of creativity and those pertain to life threatening circumstances, as Karl E. Weick indicates. Second, finding meaning in times of difficulty is about establishing worthwhile goals, having the freedom to choose under normal circumstances and exercising the freedom of choice in a responsible manner even under tense conditions. The capacity to find meaning is not blind optimism, but rather what Victor E. Frankl (1984: 159) calls "tragic optimism", namely an individual's choice to live, and find a reason for doing that despite extreme circumstances like pain, guilt or death.

Individual resilience requires resources, namely a set of "protective mechanisms" that allow for a person to demonstrate endurance in times

of distress. They range from the robustness of the neurobiological system, and the temperament of the person to the level of the same person's sociability, intelligence and communication skills. Furthermore, personal characteristics related to levels in self-efficacy, self-esteem, flexibility, determination, internal locus of control, the strategies employed to tackle stress add to the capital acquired by people during their developmental stages. In this respect, a psychosocial perspective informs that extreme stress makes people regress to their "most habituated way of response" (Diane Coutu). That equates behavioral responses learnt during developmental stages (i.e. Hendrix's developmental theory describing the stages of attachment, exploration, identity, competence, concern and intimacy pertaining to age groups from 0 months up to 19 years of age), the emotional needs characteristic of these phases (i.e. RILEE's theory of relating and the emotional needs it describes as attachment security, attention, acceptance, approval, acknowledgment, affection) (Darlyne G. Nemeth, Traci W. Olivier, 2017:89) and individual and environmental responses, either positive or negative, experienced when evolving from one stage to another.

Individuals cannot live by themselves, though. Therefore, family, community, along with the

socio-economic environment play an important role in meeting individual needs, shaping individual responses and hence consolidating resilience. In this respect, based on analyses of how community response contributed to securing people resilience and solidarity in the case of Hurricane Katrina and the state of Louisiana, USA was confronted with the Great Flood of 2016 Darlyne G. Nemeth and Traci W. Olivier identify some key indicators that, in our opinion, provide an operational definition of resilience in the case of individuals as part of a community. Thus, individual resilience can be viewed as the capacity to be "firmly present in today...by learning from yesterday...and see themselves in a better tomorrow" (Nemeth et.al, 2017:99).

Community resilience, according to Norris et al (2008) is the result of four types of adaptive capacities: economic development, social capital, information and communication, community competence.

Social resilience, according to Hall and Lamont (2013) refers to adaptation, transformation of individual behavior or of social structures providing meaning to behavior either by old or new means in order to secure a given community's or society's members well-fare (i.e. seen as psychological or physical well-being, material sustenance, and the sense of dignity and belonging to a given group).

According to Brown (2016), the everyday forms of resilience are resistance, rootedness (i.e. viewed as identity markers), and resourcefulness (i.e. in terms of both knowledge, innovation, learning and the means by which resources can be accessed and employed as a result of changes).

Last but not the least, it is worth noting that “Resilience is embedded in people’s behaviour, and it is built by proactive approach to mobilizing resources, abilities to respond and perform under a variety of conditions.” (Tasic et.al., 2019 )

## **5. ORGANIZATIONAL RESILIENCE**

Similarly to individual resilience, organizational resilience is built on a set of values. However, some authors argue (Coutu, D., 2021:11) that in the case of organizations the existence and enactment of a system of commonly agreed, accepted and enacted values is more important for an institution’s capacity to overcome difficulties and prosper, rather than its reliance on a number of resilient employees. Individual resilience leads to highly personal choices when not coupled with the goals of a community of interest. That only emphasizes the role played by a trust-based organizational climate and by an organizational culture built around a set of commonly agreed principles and values guiding

employee behavior. Resilience as a trait at organizational level is validated by people’s behavior. The manifestation of individual resilience over organizational resilience may signal organizational weaknesses and the areas where, provided that a given organization experiencing adversity outlives it, the need for improvement.

Everyday habits and experience are important assets for any organization and they become even more important when encountering bumps on its way to accomplish goals and objectives. Nonetheless, they can easily transform into challenges, threats and eventually high impact risks in times of crises if they sustain a silo mentality, a lengthy and time consuming decision-making process resulting from redundant processes and red tape. Therefore, working towards acquiring and maintaining a pristine outlook on the rules and regulations that ensure institutional resilience and its survival in times of crisis is of utmost importance. Eliminating the burden of organizational processes, systems, assets which are superfluous and create unnecessary pressure not only in times of normal operational tempo but also in times of difficulty is mandatory. An existential crisis during an organization’s lifetime requiring mere survival and recovery unveils the areas where irrelevance is mostly poignant.

Striking a balance between perpetuation and continuous innovation is required for resilience to be an after-crisis positive trait for an organization. Gary Hamel and Liisa Välikangas' (2021:25) opine that innovation is not solely a goal by itself that has to be assumed at strategic level and translated at operational and tactical level, but it should be an underlying theme of those aspects that secure the very existence of an organization, namely its values, processes and behaviors. In this respect, the authors equate resilience with efficiency and signal the imbalance that may manifest between the operational level and the strategic level of an organization. Hence, even though an establishment may score high in terms of its efficiency related measures and indicators for the operational level that prove the capacity to perpetuate, it may be found faulty when assessed for its strategic efficiency in terms of the organization's capacity to innovate.

The basic elements identified by Pricewaterhouse Coopers (PwC) as needed by an organization to be resilient at the minimum level are connected to its capacity to adapt, respond, recover to stress scenarios and real disruptive events by maintaining key services and associated requirements for operating, efficient communication channels, and a proactive culture

coupled with a learning attitude of its employees which is the result of training and preparation for the worst.

According to PwC, resilience can be built only in already well-functioning organizations, and, to extend their argument further, based on existing and time tested and validated processes and values.

Based on the approach proposed by PwC, the following conclusions sequential can be drawn when it comes to building/consolidating resilience in an organization:

- resilience thinking and associated initiatives starts from understanding and considering the needs of the primary stakeholder and an organization's products or services serving those. For that strategic thinking and change management skills are necessary.

- a backwards type of thinking needs to be applied in order to map the key processes and the key systems contributing to satisfying stakeholders' needs. The key areas that need consolidation in this respect are the infrastructure (physical and digital altogether) and its associated protection in terms of assets (both tangible and intangible) and continuity.

- understanding an organization's external dependencies and its multiple stakeholders contributing to sustaining key services, and their relationships and role in the

organization's key processes and systems is paramount for applying risk management thinking, and for employing incident and crisis management knowledge tools and techniques.

## 6. RESILIENCE FROM A STRATEGIC AND OPERATIONAL PERSPECTIVE

Reflecting on the positive impact that the Covid 19 epidemics could have on approaching resilience from a strategic perspective, Martin Howard in an article titled *Resilience is the New Black* proposes a six step approach to a resilience focused strategy at national level centered on: research, resource, readiness, respond, recover, review. Thus, for top decision-makers is of utmost importance that scientists, intelligence experts scan the future and map it in terms of its challenges providing the necessary scenarios that best inform strategies. Decisions have to be supported though by allocation of necessary resources and in this respect an integrated approach to leadership and crisis management in central and local structures, alongside with the provision of contingent capabilities are necessary. Furthermore, existing systems, structures, processes have to be tested and adapted/transformed through simulations, exercises or other means of testing their resilience. As a result of that the conclusions have to be

enacted, otherwise a key aspect to building resilience is skipped. When crises strike, relying on contingency planning in a timely manner is the best option. However, gaps are an inherent part of the tension between thinking and acting and they give room to employing planning just as a baseline and not as the ultimate solution. Furthermore, responding requires balancing recovery efforts with running day-to-day businesses in an as close to normal conditions as possible to allow for the "bouncing back" effect to occur. Last but not the least, generating lessons learned through a review process and feeding them into the previous steps is of utmost importance for a system, structure, behavior to be truly called resilient.

In a very similar vein to Martin Howard but from an operational perspective, Gerhard Wheeler resorts to past examples from wars to sustain a six fold approach to building operational resilience. The steps he proposes are as follows:

1. anticipate by employing alternative ways of thinking, scenario-based planning or red teams.

2. detect warning signals that foretell the emergence of threats. In this respect one important aspect underlined by the article is the use of empowered deputies whose role is to relieve the burden placed on top leadership by the priorities of

the day and take care of aspects that pertain to the daily running of the organization and that could also signal the potential appearance of challenges.

3. deter by first and foremost acknowledging the existence of such a need and then by employing a “stick and carrot” approach that is mostly anchored in knowledge of human behavior as provided by behavioral psychology, game theory.

4. withstand, namely providing the necessary capacity to resist adversity until a solution is identified and responding becomes possible. In this respect, the author notes the following: “...effective military resilience plans are designed to absorb losses, disperse assets, build in redundancy, focus protection on vital resources, maintain reserves, secure supply chains, disguise strengths, and defend in depth. Most importantly, they ensure that the whole of the organization is prepared and trained to act in a crisis.”

5. respond asks for the ability of the organization to counter a threat at a faster pace than the latter’s capacity to adapt. In such a case tools like integrated systems that communicate in no time critical information to decision-makers and a “leadership culture of delegated responsibility” are some of the key ingredients.

6. recover by reflecting on past actions, learning from those and institutionalizing the conclusions into clear standards.

In the same realm of operational resilience in a document titled “*Operational resilience. Your Swiss army knife to survive the next crisis*”, PWC defines the concept in the business area as the ability of an organization to „protect” and „sustain” those core services that are critical for its clients both in times of normalcy and in times of difficulty. The major drivers behind the need for operational resilience are customers’ expectations for ongoing availability of services, extreme weather conditions and climate change, increasing complexity of cyber threats, tighter regulatory supervision, higher risks of internal failures associated with increasing system complexity. Compared to traditional risk management approaches that look at disruptive events from the perspective of hypothesis formulation, the resilience narrative treats the same events as future certainties. Thus a shift from the „if” speech to the „when” discourse marks the difference between risk thinking and resilience thinking.

## 7. CONCLUSIONS

Resilience is the ability to grow, develop along change and its associated uncharted territories and not despite it. From such a perspective, the concept is associated

with flexibility and ever-changing conditions which require systems of management that nurture these qualities over maintaining stability.

A strong, resilient system is desirable but once the desideratum achieved it may run counter the changing times and the need for permanent renewal. Consequently, breaking the resilience or reducing the resilience in order to allow for alternatives to emerge is the next step ahead.

Resilience is about the capacity of a system to preserve identity while deliberately changing, adapting in anticipation or as a response to internal or external factors.

Three key words are associated with resilience as a defining element of social-ecological systems, namely: adaptability, transformability and persistence. These concern actually answering the question “for what?”. Thus, resilience acquires meaning when associated with them in phrases like: resilience for adaptability and resilience for transformability.

People’s adaptability as part of the resilience approach incurs their capacity to “learn, combine experience and knowledge, innovate and adjust responses and institutions to changing external drivers and internal processes” within given critical thresholds of a system. Transformability concerns the crossing of existing boundaries, already known system thresholds

and generating new pathways when a system become “untenable”. Planning and controlling are no longer the focus in approaching resilience for transformability. Building experimentation spaces free of the fear of failure, allowing for small-scale experiments, encouraging cross-learning and facilitating the spread of new initiatives across the whole of the system are some of the tools endorsing such an approach. The only threshold in such a case is the sustainability of the system.

One key trigger or obstacle to resilience for adaptability or for transformation is cultural identity (Walker et al. 2009, Rotarangi and Stephenson 2014, von Heeland and Folke 2014).

According to Bene et al. (2016) resilience is the sum of absorptive capacity, adaptive capacity and transformative capacity, each of these leading to interim and final outputs like persistence (i.e. in the case of absorptive capacity), incremental adaptation and transformational reactions.

Resilience thinking runs counter stability, predictability. It is the outcome of employing various types of capabilities and strategies that are context dependent to survive disruptive events or to adapt to incremental changes, achieve robustness coupled with agility and thrive in the long run. Nonetheless,

as the BSI report on 2018 trends in business across the world (BSI, 2018:16) unveils, in times riddled with continuing uncertainty, securing product resilience via innovation, horizon scanning and adaptation is not under the radar of organizations.

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# STRATEGIC IMPORTANCE OF SUPPLY CHAIN MANAGEMENT ON THE BATTLEFIELD: THE CASE OF YAVUZ SULTAN SELİM'S EGYPT CAMPAIGN PLANNING

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*It is the most essential condition for leaders and commanders to value the supply chain management at the strategic level and form their plans in this way. So much so that, before a possible conflict is completely uncertain to how it will be and how long it will last, it has become sustainable with a good strategic planning process. The subject of our research, the Ottoman Empire's Egyptian campaign, set up an example for the strategic importance of supply chain management under difficult depth operation and variable climate conditions. When Sultan Selim's Egypt campaign is evaluated with the possibilities and conditions of the period, it will shed light on today's operations.*

**Key words:** Strategy, Leadership, Supply Chain Management, Logistics, Ottoman Empire.

## 1. INTRODUCTION

In conventional warfare, the piece of land occupied and targeted by friendly and enemy troops to achieve a military purpose is referred to as the operation area. The back zone is an area where logistical elements are predominant, besides containing many elements that support the operation. The main task of the logistics elements operating in this region is to provide supply,

evacuation, and stopover services to the troops they support (Karagöz, 2019).

The supply chain includes all the activities of a product from raw material to the customer/requester. These activities include all the information systems required for raw material and material procurement, production and assembly, storage and stock monitoring, order entry and order management, distribution,

delivery to the customer and monitoring and supervising all of these activities. The location of warehouses, distribution centers, production quantities, order dates, inventory policies and shipping decisions is crucial for supply chain success (Kapıcı & Yücel, 2021). The main purpose of supply chain management is to add the most value to the performance of the chain at the lowest possible cost. In other words, it aims to collaborate within the firm and connect with all supply chain partners in order to maximize the efficiency of the supply chain and provide the most benefit to all parties involved.

When the development of the logistics and supply chain is evaluated, it is seen that there has been a change from a non-integrated understanding focused on business functions and logistics movements to an increasingly process-oriented, integrated, information technology-using and customer-oriented understanding, and this change is continuing (Akyüz, 2021).

Depending on the technological developments, a rapid change is experienced in the global competition environment. Businesses also must keep customer satisfaction at the highest level in order to keep up with this change and to gain superiority in the market. For this, they are obliged to act jointly with all members in the value chain they are involved

in. In this concept Supply Chain Management is the management of activities and relations that cover the whole of the organization with all logistics activities and the organization's relations with other organizations, aimed at increasing organizational performance and creating sustainable customer satisfaction (Sayın & Özcan, 2019).

Conceptually, logistics consciously or unconsciously, comes up with different definitions based on different functions in the process from raw material production to consumer unit in order to meet the needs of living things. Regarding the concept, it is not possible to reach a single definition considering the processes it has gone through throughout its history (Oğuztürk & Çetin, 2012). Logistics activities, in terms of the functions it contains, emerge as the movement of goods and services to the appropriate place, in an appropriate manner and in the shortest time, and in this way, to reach the needs of the needy in the most appropriate time.

The success of military operations is possible first with a good warfare plan and leadership, but with a logistical planning that will enable the army that can support this plan to continue its operations in the further region. This situation confronts us with supply chain management as one of the factors that make the most important contribution to the success

of a country's army, regardless of its capabilities.

The Ottoman Empire, which acted with the politics of war and jihad since its emergence on the stage of history, increased its war capacity by being in war since its establishment and gave a military character to its administrative structure. Thanks to this strategic leadership, he pioneered his contemporaries by gaining a great deal of experience in expedition organizations, especially in food and supply issues (İşbilir, 2002).

The purpose of this study is to emphasize how important supply chain management is in military operations. As a military operation, the choice of the Egypt expedition, which was carried out during the Ottoman period, was to address a period in which different geography, climate and logistic capabilities did not develop much, and states did not go to such distant regions at that time. It is considered that the military and logistic planning of this operation will put countries in a difficult position even under today's conditions. The campaign shows great strategic leadership of Ottoman Sultan Yavuz.

## **2. LITERATURE REVIEW**

In supply chain management, all functions forming the chain must be integrated. A series of functions fulfill certain tasks in line with the basic objectives in the delivery of

products from the supplier to the end user (Eymen, 2007). Basic Functions of the Supply Chain are demand and order management, purchasing, planning, stock management, warehouse management and shipment/transportation.

Demand and order management is the ability of businesses to understand customer demand and to balance this demand with their supply chain capacity (Lambert & Cooper, 2000). Demand management is the ability of the business to understand the needs of its customers in advance and to adjust its supply chain capacity according to these needs. With demand management, customer needs and production facilities of the enterprise are tried to be balanced (Rexhausena, Pibernik, & Kaiser, 2012).

Purchasing means providing the raw materials, parts and services required for the production of a product or service. The purpose of the purchasing function is to create and follow up purchasing plans based on the trading strategy. The purchasing unit selects suppliers, makes the necessary negotiations and agreements, and establishes partnerships (Stevenson, 2017).

Planning is the task of the planning function to create production plans, material procurement programs to meet customer orders on time, to revise and manage them in a dynamic structure, and to

effectively manage production and other operating costs and constraints (Uğural & Çağrı 2020). Required features: creating systematic plans in line with customer demands and sales trends, preparing short-term programs and loom loading based on long-term plans, establishing an integrated supply system with purchasing, reviewing, and evaluating according to the optimization of product design planning constraints, reducing the duration of transition between waiting and preparation in production (Eymen, 2007).

The importance of the supply chain in the production process is to supply the right product at the right time, at the right place and at the right price, as well as offering the right price to protect the interests and goals of the business. This is achieved with effective cost management (Türker, Balyemez, & Biçer, 2005; Uğural 2020).

The purpose of stock management is to determine the optimum stock and order amount that will ensure that the goods required for profitable production and marketing are available at the desired time and place, in case of changes in the demands and expectations of the customers and the deliveries of the suppliers. In order to manage stocks, first of all, information on stock is needed. Stock refers to stationary material and is stationary resources with potential value (Karagöz & Yıldız, 2015).

Warehouses are places where businesses keep their stocks. They have the function of creating a buffer against imbalances between customer demand and production amount. In other words, they are a bridge between production and marketing units. Many decisions such as the location of the warehouse, interior design, capacity, distance to customers is the subject of warehouse management.

Warehouse management requires a strategic approach and is referred to as strategic storage in many sources. Warehouse management plans are developed for strategic storage. The main purpose of developing a warehouse management plan is to meet the expected demand within the specified time frame at the lowest possible cost (Aghezzaf, 2007).

Businesses want to create their transportation networks in the best and most efficient way so that the flow of products and materials from suppliers to facilities and from facilities to customers can be carried out effectively. These activities are called transport/shipment management. The purpose of transportation management is to ensure that stocks are transported on time and with the least cost (Rexhausena, Pibernik, & Kaiser, 2012). The activities involved in transportation management are to balance between transportation needs

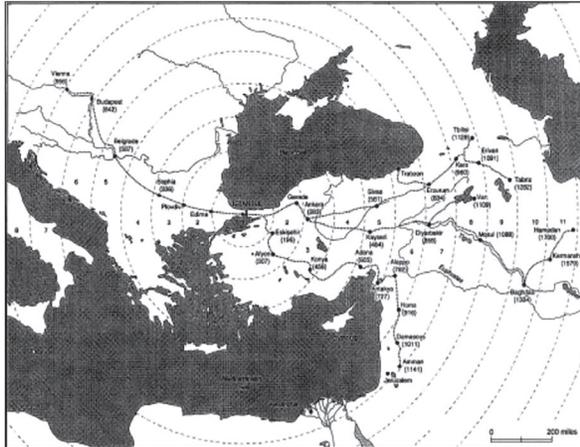
and carrying capacity, to determine the most suitable transportation methods and to choose the most suitable one, to adhere to the plans, to follow the procedures and to prepare the transportation plan accordingly.

Road systems shaped according to geography and climatic conditions have had a great economic, military, and social importance throughout history. Roads are of great importance in commercial and economic activities, communication, travel, dispatching armies, and all kinds of transportation. In this context, the Ottoman Empire has established a wide road network, like the Roman, Byzantine and Seljuk State, which prevailed in Anatolia and Rumelia (Sak & Çetin, 2004).

of three main routes, namely right, left, and middle branches in Anatolia and Rumelia, are connected to each other by secondary roads (Bozkurt, 1966). In this context there were six main destinations when starting the campaign from the capital city İstanbul.

Accordingly, right destination in Anatolia; It reaches Mecca and Medina via Üsküdar, Gebze, Eskişehir, Akşehir, Konya, Adana, Antakya via Aleppo, and Damascus. The right arm in Anatolia is also known as the pilgrimage route.

Middle destination: It reaches Üsküdar, Gebze, İznik, Bolu, Tosya, Merzifon, Tokat, Sivas, Hasan Çelebi, Malatya, Harput, Diyarbakır, Nusaybin, Mosul and Kirkuk.



**Fig. 1.** Ottoman Empire Campaign Routes

In the Ottoman Empire, the stopovers are accommodation centers formed at certain points on the triple road network both in Anatolia and Rumelia. These roads, which consist

In addition, this road is called Basra-Baghdad Road (Gül, 2011).

The left destination would follow the same route to Merzifon with the middle destination, and from

there one road would reach Kars via Hasankale via Lâdik, Niksar, Karahisar-ı Şarkî, Kelkit, Aşkale, Erzurum, and another road to Tabriz.

Istefe via Tekirdağ, Malkara, Firecik, Dimetoka, Komotini, Pravishte, Lanzaka, Yenişehir, Izdin (Sak & Çetin, 2004).

The departure and arrival routes of the Ottoman army are different from each other. The arrival route is, on average, half of the departure route. The most important reason for this was that the food and ammunition in the ranges were consumed during the departure, and there was not enough food and ammunition in the ranges on the way back. However, considering the seasonal and geographical conditions and security, the difficulty of these conditions was also considered (Aybet, 2010).

The troops of the Ottoman army were located in different parts of the country. There were only some of the Kapıkulu soldiers in the center. An order was sent to the regiment's commander of the sipahis and they were ordered to join the army with their troops. Janissaries and other Kapıkulu soldiers in the provinces were also brought to the army by the officers assigned to gather them. The soldiers in the provinces would join the Ottoman army along the campaign route. It was required that the soldiers who came to the army to be fully equipped (Afyoncu, 2019).

During the Egyptian campaign, Ottoman Empire used the same stopover area as in the First World War in general until the Palestine region. However, due to the lack of a strong navy in the region at that time and the lack of danger to the army from the north, the shortest and closest to the sea stopover route, the El Arish region route, was used. However, during the First World War, this road could not be used due to the allied navy in the Eastern Mediterranean, and the stopover roads in the inner region were used (Karagöz, 2019).

### 3. CAMPAIGN ORGANIZATION

The Ottoman Empire, which was one of the important states in the history of world war in terms of the art of war, has developed its war management structure by continuously increasing its war skills and tactics since its early years. In particular, the administrative and logistical elements are organized and arranged to meet the need for continuous time (Ertaş, 1999). These preparations made by the Ottoman Empire to prepare its army for the expedition are called "Campaign Organization".

It is possible to categorize the activities carried out by the Ottomans for the campaign organization under five main headings: strengthening the border castles, mobilizing the army,

providing the accommodation of the soldiers, arranging the transportation roads and infrastructure, and finally arranging the military stopover that constitute the infrastructure of the campaign (Ertaş, 1999).

In the Ottoman Empire, the decision of the campaign was an authority belonging to the sultan. However, the Ottoman sultans had made this decision by consulting with the viziers on the council on various aspects of the expedition before deciding on a campaign. The yield of that year, taxes and other revenues affected the Sultan's will. After the decision of the campaign was taken in the government, a decree was issued to the shires, states, principalities, and the regiment principalities to carry out the above-mentioned activities and the amount of food and cash to be bought was informed.

Preparations made before a war for religious, human, political, economic, and similar reasons have a significant impact on the outcome of the war. These preparations made after the war decision were made include military, administrative, legal, and customary issues. It is necessary for the success of the campaign to make the preparations for a war that will last for months and to make the preparations in a naturally long time and to calculate the finest details (Demirtaş, 2001).

When the decision of a campaign was taken in the Ottoman Empire, the food and supply facilities in the region where the campaign will be made were first put into use. The logistics process was a major problem as the preparations were completed following the decision of the campaign and the transportation to the battlefield would take an average of six months. In order to cope with this problem, the modification of the border fortresses and the roads leading to this region, and the storage of ammunition and supplies on the route to be followed during the campaign were among the measures taken (Kurtaran, 2012). In this context, different ways and methods have been applied throughout the history for the provision of food in the Ottoman Empire. The most used of these is the tax collection method. These taxes, referred to as *avârız-ı divaniye* and *takâlif-i örfiye* in Ottoman documents, are versatile and quite diverse (Orat, 2012). To sell grain and amount of grain determined to the stopovers, established along the roads the soldiers will pass, to supply and transport the war materials and necessities such as barley and straw. Finding the workers, animals and provide auxiliary classes to the army under the names of *rower* and *torment* if needed. Making fortresses and participating in the expense of the war with the cost of money is one of the main taxes (Kurtaran, 2012).

### 3.1. Supply services

A number of employees were also needed to meet the needs of the army that would go on campaign, in various fields. These were made up of tradesmen and craftsmen who are generally called army-men. These tradesmen and craftsmen, who would see the supply services of the army, were also procured from various regions of the state as needed. Tradesmen and craftsmen, who were determined as army-men, would join the army with their tools and equipment. In the selection of these officials, attention was paid to their competence in their arts. Selected tradesmen join the army and returned after serving a specified period of time, and other army-men were sent to their places (Kılıç, 1999).

In addition to the supply services of the army, army-men were needed for building bridges on the route or building castles in the conquered regions. These army-men were also used for these works.

The grain and animal feed needed by the Ottoman armies on the campaign were also obtained from the towns on the route.

### 3.2. Mobilization of army

When it comes to mobilization in the Ottoman army, two concepts come to mind as mobilization of Kapıkulu Soldiers and the Provincial Soldiers (Demirtaş, 2001). The

transition of both armies to mobilization and warfare is different.

Since the staff of Kapıkulu soldiers were the same in peace and war, it could be easy for them to switch to warfare. The vacant cadres of this army were reinforced by the recruiters and veteran soldiers whose duty place is in the palace (Aysan & Kan, 1990). The soldiers, who oversaw the Kapıkulu quarry and whose duty was on the border of the Rumelia region, were assigned to ensure the security of the region they were in by not participating in the campaigns to be made in Anatolia (Tezel, Bozan, Göker, & Özçelik, 2015).

The mobilization of the provincial soldiers, on the other hand, is not as simple as the Kapıkulu soldiers, but it can be considered quite complicated because it is carried out by orders. At the time of the campaign, the number of soldiers to be recruited from the states, sanjaks and other regions were ordered by decrees and these orders were noted in the mobilization book (Tezel, Bozan, Göker, & Özçelik, 2015). The orders clearly stated where, when and which unit these soldiers would come under the command of command, and thus the army was provided to gather at the desired place and time (Alpmansu, Hünoğlu, & Özen, 1995).

For the naval forces in the period of Yavuz Sultan Selim, there

were 300 ships in total, together with the newly built ships in the Navy used in the Egyptian Campaign. The naval forces participated in the Egyptian campaign with 20 pieces of barges, 40 galleys, 10 boats and 2 kalitas. These amounts may vary according to various sources. Sultan Selim carried various provisions and equipment to Trabzon with the Navy in the Çaldıran Campaign, but he could not benefit from the navy sufficiently from military and logistical side in the Egypt Campaign. The reason for this is that the pirates found around Rhodes and Cyprus and the ships owned by the Ottoman state at that time were not resistant to severe storms.

### **3.3. Logistics activities**

The Ottomans, who ceased to be a regional state and turned into an empire with Fatih Sultan Mehmet, organized their campaigns after this date to regions that require long transportation time and far from the capital. While the Ottoman Empire embarked on a campaign with weapons, supplies, ammunition, and other necessary materials carried on by the soldiers during its foundation years, during the ascension period, it carried out its campaigns by meeting the necessary needs from the regions called “Stopover” where these needs were met.

### **3.4. Stopover system**

Stopover (Menzil in Ottoman documents), which is an Arabic origin word, means “the place where you are during the cruise and travel at night, mansion”, a mansion between two mansions, road, stage “, place of residence, dwelling” (Gökdemir, 2016). There are three stopovers in the Ottoman Empire. These are the “Messenger, Hajj and Food Service stopovers.”

Although the stopover organization was used for multiple purposes such as transportation, communication, commercial activities, pilgrimage, and military activities in the Ottoman Empire, it first emerged for the postal organization, namely messengers. The stopover system gained its main importance when the empire started to engage war to places far from the capital with Fatih Sultan Mehmet (Halaçoğlu, 1981).

“Messenger Stopovers” are used as a communication system. The stopover used by pilgrims on a pilgrimage mission is the “Hajj Stopover” and the stopover used to accommodate the soldiers and meet their needs in the campaigns is called “Subsistence Stopover” (Bozkurt, 1966).

In the Ottoman classical period stopovers, mostly land roads were used during the transportation of logistics needs. Mainly camels were used because they carried more cargo

than other animals and were easy to care for. However, at various times, transportation was made from the Danube River in Rumelia and from the Tigris and Euphrates rivers in Anatolia by seaway. Due to various deficiencies and neglect, problems were experienced from time to time during shipment. During the First World War, Labor Battalions served for transportation activities (Karagöz, 2019).

A stopover organization has been established on the main and secondary roads for the supply, storage, and distribution of I and III class supplies for the campaigns, in areas close to the water source and generally outside the city, where high-standing troops can be accommodated (Halaçoğlu, 1981). Before the departure for campaign, the required stopover points were determined in accordance with the

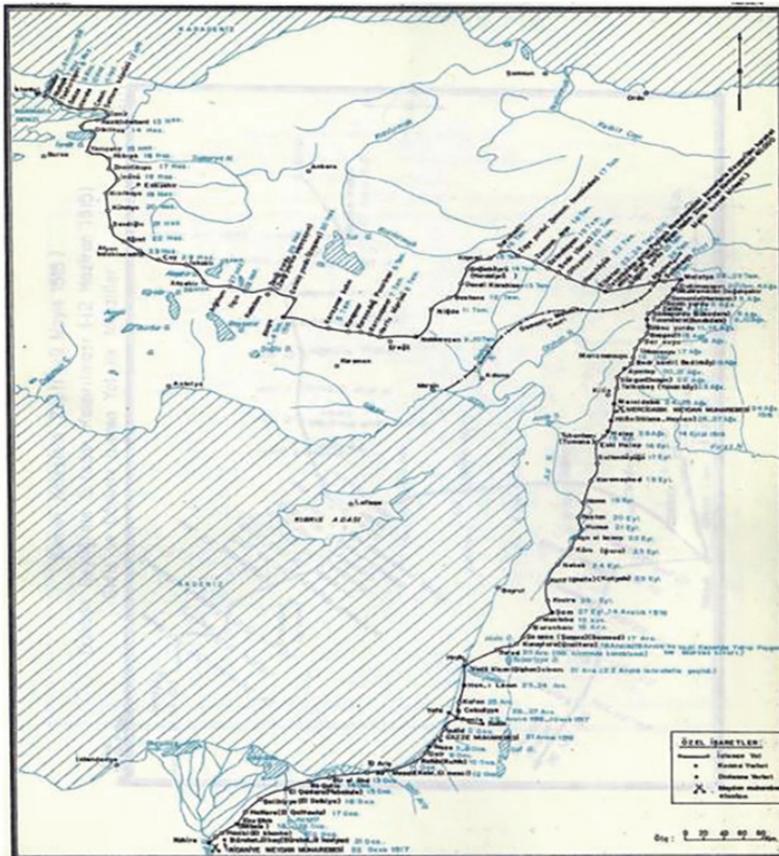


Fig. 2. The Route Followed During Egypt Campaign

deployment plan and all kinds of measures were taken. In the plans made and, in the orders, sent, it was clearly written where and how much and how the food items would be taken. On average, a stopover house has been established every 20 km on the campaign route. As a rule, in the depots of the stopovers, 15-day food of 10% of the army and stopover house general stock is always available (Gökdemir, 2016).

sanjak chiefs before the expedition is as follows.

\* The amount of tax per household is 1,12 bushels of grain. 1/3 of this is collected as flour and 2/3 of it is barley.

\*\* There is no detailed information about the grain excised and collected (Polat, 2018).

When the ration of the soldiers in the Egypt campaign is examined, the average bread per one soldier

**Table 1.** Grain Amount Excised and Collected

Mercidabık War				
House*	Excised	Flour	Barley	Total
			105.366	210.733
282.612	Collected	Flour	Barley	Total
		45.208	158.529	203.737
Rıdaniye War				
	Collected	495.839,5**		

During the Egypt campaign, Yavuz Sultan Selim personally gave importance to logistics issues and the stopover points within the stopover organization were chosen by him. Sultan Selim stayed at 104 stopover houses from İstanbul to Egypt during his Egypt campaign. 26 of them are between Damascus and Egypt (Aysan & Kan, 1990). The march started with the departure from Üsküdar on June 5 1516, and ended after the victory of the Battle of Ridaniye on 22 January 1517.

The list of rations collected according to the decree sent to the

is 641 gr (450 gr flour) (if it is not possible to manufacture, rusks were given) and meat, as mutton 192-250 gr (when it comes to beef, the amount increases approximately twice), bulgur was served twice a week as pilaf (Çopur, 2017).

The grains collected during the campaign were used for the supply of Kapıkulu and state soldiers. These supplies were distributed free of charge to some units and at a price to others, and as a result of this distribution, the state treasury gained income. The list of supplies distributed during the campaign is presented at table 2 and 3.

Table 2. Free for Charge Stopover Grain

Place of Distribution	Wheat (Bushel)	Barley (Bushel)	Total
Istabl-ı Âmire	0	110.823	110.823
Cemâ'at-i Yeniçeriyân	6.368	4.506	10.874
Damascus Castle	12.992	0	12.992
Yunus Pasha	40	2.782	2.822
Hazret-i Sinan Pasha	1.052	2.493	3.545
Matbah-ı Âmire	2.468	0	2.468
Hosan Pasha	433	1.820	2.253
Kâtibân-ı Yeniçeriyân ve Kethüda	300	1.265	1.565
Janisleri Ağası	335	970	1.305
Rumelia Kadiaskeri	165	555	720
Anatolian Kadiaskeri	140	280	420
Şehsüvaroğlu Ali Bey	300	400	700
Cemâ'at-i Cebeciyân ma'a Ağa	217	230	447
Ser-bekciyân?	35	120	155
Other	3.870	0	3.870
Grand Total	28.715	126.244	154.959

As it can be seen from the tables, 154,959 bushels of the grain collected during the Egyptian Expedition were distributed to the groups and people who participated in the campaign, free for charge. The amount distributed by taking the price constituted 76% of the total amount.

As it can be seen from the tables, 48,778 bushels of the grain collected during the Egyptian Expedition were distributed to the groups and people who participated in the campaign, provided that the price was paid. The amount distributed by taking the price constituted 24% of the total amount. However, among

the groups and individuals who paid for, the most striking section are the groomed warriors and the people who command them.

During this campaign, which was recorded as "Campaign of Damascus", which included the Mercidâbık War process and the pre-Ridaniye campaign, 17.255 bushels of flour were from 12 coins and 31.523 bushels of barley from 10 coins and distributed to warriors, technical personnel and individuals who participated in the war. The amount obtained from this distribution to the relevant persons and groups was 522,297 coins (Polat, 2018).

Table 3. Distributed with Price Stopover Grain

Place of Distribution	Wheat (Bushel)	Barley (Bushel)	Total
Asâkir-i Anadolu ma'a kethüda ve defterdâr	3.193	7.524	10.717
Asâkir-i vilâyet-i Rumeli	3.896	6.217	10.113
Asâkir-i Rum ma'a Mirimiran ve Asâkir-i Yörükân	866	2.301	3.167
Asâkir-i Vilâyet-i Karaman ma'a Mirimiran	872	2.043	2.915
Bevvabân-ı Topciyân ve Mehterân-ı hayme ve alem ser-mehterân ve topciyân ve çakırciyân hademe-i ıstabl-ı âmire ve arabacıyân-ı top	1.239	1.572	2.811
Silahdarân ma'a Ağa ve Kethüda ve Kâtib	1.140	1.634	2.774
Ebna-i Sipahiyân ma'a Ağa Kethüda ve Kâtib	64	1.512	1.576
Sinan Pasha (Rumeli Mirimiran)	352	1.072	1.424
İbrahim Bey	475	808	1.283
Cemâ'at-i müteferrika ve ehl-i deve ve Türkmanân	362	827	1.189
Kâtibân-ı hazine-i âmire ve Divân-ı Âli ve gayrı	146	490	636
Cemâ'at-i Ulufeciyan-ı Yesâr ma'a Ağa ve Kethüda	175	363	538
Cemâ'at-i Gurebâ-i Yesâr ma'a Ağa, Kethüda ve Kâtib	154	353	507
Cemâ'at-i Gurebâ-i Yemin ma'a Ağa, Kethüda ve Kâtib	152	347	499
Ehl-i matbah-ı âmire ve kâtibân	280	121	401
Zeynel Paşa (Anadolu Mirimiran)	124	247	371
Çavuşân-ı Dergâh-ı Âli	104	255	359
Cemâ'at-i Ulufeciyan Yemin ma'a Ağa, Kethüda ve Kâtib	245	79	324
Mehmet Bey ser-cebeciyân	0	220	220
Other	4703	2251	6984
Grand Total	17.255	31.523	48.778

Animal supply was an important part of the campaigns. With the decrees, camels, mules, and buffaloes were requested from the sanjaks in Anatolia and Rumelia in order to keep the grain and other needs of the army ready in the stopovers

and to transport the cannons and ammunition of the army. The requested animals were provided by purchase or rental (Öztürk, 2019). There was a considerable number of animals with the army. At the time of the desert crossing, there

were approximately sixty thousand soldiers and fifty thousand animals. On average, an animal ate six times the amount of food a man ate. Animals (horse) consumed 5-6.5 kg of barley daily (Aysan & Kan, 1990).

The stopovers were formed as a large stopover, one at 3-4 stopovers. These large stopovers were established in areas close to big cities, and soldiers would rest, bath, do tailor and blacksmith work and receive health services in this stopover (Karagöz, 2019). Health services were carried out by physicians and surgeons for the soldiers of Kapıkulu, and for the state soldiers, they were carried out by the physicians in the region who were assigned by the operation order. At that time, kinan, beeswax, aloe vera, saffron, alum, olive oil and alcohol were used as medicine (Aysan & Kan, 1990). Veterinary works of animals were carried out by blacksmiths among the army-men.

The important issue that stood out in the Ottoman classical period stopover system was due to the different mobilization system in times of peace and campaign. In the period when the state was strong, this system did not stand out as a deficiency, but at the point where the defeats started with the decline, campaign organizations started to create a great burden on the state (Ertaş, 1999).

Although Ottoman Empire state did not make new inventions, it was able to follow all military inventions. After the Tanzimat, the state could not use its military and technological facilities effectively. This situation revealed that the state should go through a radical change in the supply system, that is, the campaign organization. With the new supply system, the state's logistics organization in peace and war has been ensured to be the same. Thus, the Ottoman Army gained a new modern logistics system. The new system was tested in Balkan Wars and was working effectively. This system, which was established as "Stopover Services", was translated from German instructions, and written by General Von der Goltz, who served in the Ottoman army, under the name of "Stopover Services Regulations" in 1911 (Karagöz, 2019).

#### 4. CONCLUSIONS

Supply Chain Management (SCM) recently turned to very popular subject that it is hard to see a publishing on producing, distribution, trading, customer management and relations, or shipping without seeing an article about SCM or SCM-related issues (Ross 1998). In our study, we evaluated the supply chain management, which is becoming

increasingly important and related to all fields in the academic field, with a historical case analysis.

The Egyptian Campaign is a historical operation showing the greatness of the Ottoman army under the perseverance and determination of Yavuz Sultan Selim. According to the circumstances of that time, crossing the Sinai Desert under difficult conditions and successfully surviving two main battles and other minor battles far from the country are very important events. From these points of view, Yavuz's Egypt Campaign is one of the most important wars where logistic support is provided in the best way.

It is seen that the Ottoman state organized and carried out the campaign organization very well at that time. The long-lasting conquest period and the successes gained in the wars that were carried out later in the form of defensive warfare are considered to be the result of not only weapons but also efficient logistics activities.

In today's world, the logistics of armies are carried out in many different ways. Necessary needs are at the service of the armies at the desired place and time (Banabakova & Stoianov, 2015). SCM procedures recommends the borders of SCM include not only logistics but also all

other functions within a company and within a procurement chain to merge customer value and satisfaction. Even if our study is to evaluate the execution of a past war as a supply chain, the exact supply of the needs of the soldiers is the same as the supply of the needs of the customers. In logistically difficult times, looking forward by taking lessons from the past will be the most important force that will bring success to our armed forces. Before the war started, planning, a basic function of supply chain management, was carefully done. Planning is the most important of phase of Supply Chain Management (Keely et al., 2001). With the start of the campaign, the demand/order management and purchasing functions are performed by local elements under the command of the Army Headquarters. It is seen that, procurement made from local elements save time (Thomson & Jackson, 2007). Difficult climate conditions and the operation at long distances shown the importance of storage and inventory management during the campaign (Sharma, Abouee Mehrizi, & Sartor, 2019).

The Egypt campaign which was conducted 5 Centuries ago (1516-1517) is important for the current contemporary supply chain management and the strategic

management of modern conventional warfare. Strategic management of supply chain management on the battlefield will shall light on leaders and commanders for the execution of war at all the following levels.

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# RELATIONAL APPROACHES TO MODERNIZING OPERATIONAL LOGISTICS RELATED TO INDUSTRY 4.0 AND SUPPLY CHAIN MANAGEMENT 4.0

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*The evolution and continuous changes of the operational environment require advanced technologies and combat systems generated by Industry 4.0, taken over and managed by supply chain management 4.0, based on innovative conversion and distribution processes, high-mechanized, robotic, digitized and of special performance.*

*All military logistics actions in support of tactical and/or joint forces require leaders and logistics specialists with availability and skills to apply digital procedures, automation, etc., according to functional procedures at the levels of top-management, middle-management, low-management and execution in the conditions of continuous and cybernetically protected communications in order to achieve the flows of logistical goods and services, adequate to provide sufficient logistical support to consumers and users of the combatant military structures in order to fulfill their missions.*

*Because the relevance of modernizing operational military logistics, also known as consumer logistics, is given by its systemic and subsystemic functional nature, I will further highlight some innovative elements, generating efficiency, related to some of its essential functional areas. At the same time, the holistic dimension of the effective and efficient management of the logistic support structures will be presented by revealing some aspects of the improvement of the operational logistics planning.*

**Key words:** *Industry 4.0; supply chain management 4.0; operational logistics; flows of goods and services; modernizing operational logistics planning; information, cyber and of other type protection.*

## 1. INTRODUCTION

Achieving victories by opposing armies in all historical centuries - before and after Christ - highlights the importance and role of logistics, as an old and complex field of war, through the management, managing and timely provision of all resources and means of combat necessary to prepare and conduct successful military actions.

The increasingly complex military challenges of the 21st century lead military experts and researchers to identify innovative solutions that enable operational logistics to become more effective, efficient and increasingly resilient. Under these conditions, operational logistics must ensure through its structures, adequate to any maneuvering entity, the potential involved by the requirements of the combat forces' missions.

From immemorial time emperors, kings and great army commanders who won or lost battles in military confrontations with their state opponents have relied on the operational level of logistics, focused on resilience, and survival [1].

Therefore, the appropriate combinations of *strategy*, *tactics* and *logistics* have been the subject of thinking and building plans for campaigns, battles and fights that are based on important resources (human, material, informational). The effects of the mentioned

combinations were studied (and then applied in the wars) in the XVIII-XX centuries, in detail, first by the Swiss *Francoise Antoine Henry Baron de Jomini* (1779-1869) [2], and later by the American *George Cyrus Thorpe* (1875-1936) [3]. Subsequently, the British military expert *Basil Liddel-Hart* (1895-1970) defined the *concepts appropriate to the physical and mental dislocation of the enemy, but also those related to the separation of its combat structures and the interruption of the normal functioning of their supply lines*. According to the famous expert, this desideratum determines the *creation of all the premises for the unconditional capitulation of the opponent, in order to avoid his total destruction* [4].

Based on the experiences of the wars of the XVIII-XX centuries, but also of the first two decades of the XXI century, the operational logistics has known, over time, transformations and evolutions in full agreement with the requirements of military strategy and tactics. In recent years, the integrated logistics of the operational structures of NATO bodies has undergone important transformations both as a result of technological innovation, and especially due to the increasing complexity and action efficiency of the armies of the States opposing the Alliance.

## 2. FUNCTIONAL AND RELATIONAL DETERMINATIONS OF MODERN OPERATIONAL MILITARY LOGISTICS

### 2.1. Overview of Industry 4.0 and Supply Chain Management 4.0

At the end of the 60s of the last century, the famous American specialist, Henry Eccles, revealed the special importance of military logistics, as a *bridge between the national economy and the operations of the com* [5]. Therefore, starting from this stimulus of thinking, today, in the new conditions determined by the transformations of automated and digital nature, new requirements appear to capitalize on the new technological potential in the economic and logistical fields.

Considering first the economic field, I consider that it is important

to present a synthetic image on the Industry 4.0, as well as of the supply chain management 4.0.

Technological advances at the industrial level and economic ones at the societal level have led over hundreds of years to the continuous leap towards a new performance, allowing the transition to the fourth industrial revolution, also called Industry 4.0. As a concept, Industry 4.0 is known, initially, starting with 2011 and then recalled in 2013, at an industrial fair in Hanover, as a result of an initiative of the German government to modernize industrial manufacturing processes, by capitalizing on the potential new technologies, in full complementarity with their functional automation and digitization [6].

Figure 1 shows a model of determinants and systemically integrated to Industry 4.0.

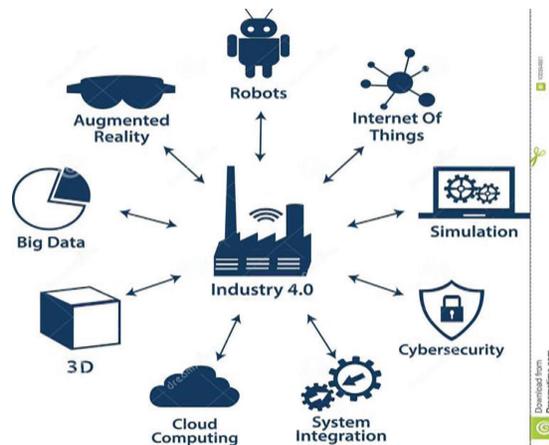


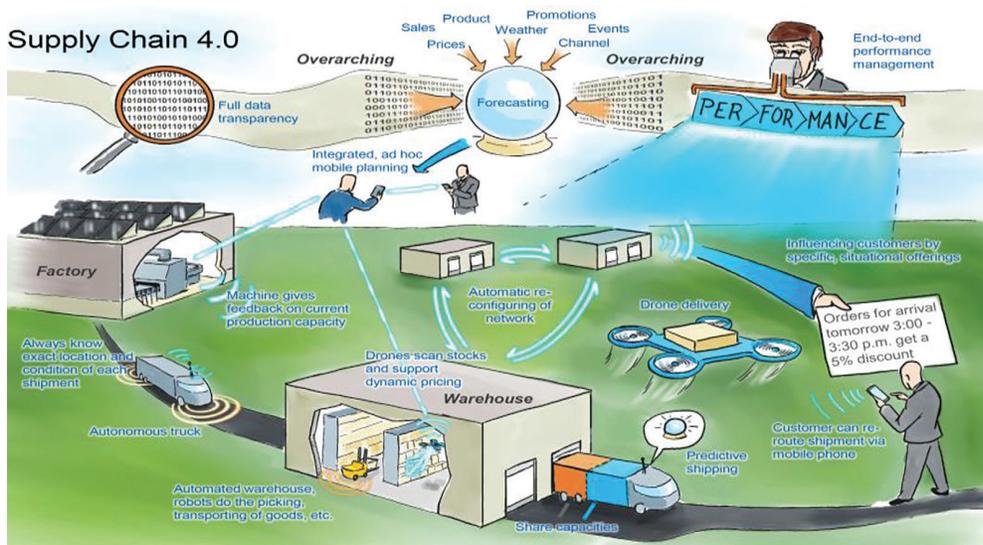
Fig. 1. Determinants of industry 4.0 [7].

The functional determinations of Industry 4.0 are evident in the design, implementation and modern systemic operation of national and multinational supply chains. The obvious relationships between the Internet of goods, advanced robotics, advanced data management, extended automation, placement of sensors in any process, generalization of network operation are obvious objectives to increase performance standards in the efficient operation of the each supply chain management, for full satisfaction of customer requirements, as beneficial effects of Industry 4.0. In order to reveal those mentioned in figure 2, I present an overall vision, a model.

In the conditions of their technological and digital innovation and modernization, the supply chains 4.0, compared to the traditional ones, allow the continuous increase of the efficiency of the flows of goods and related services from suppliers to beneficiaries with minimizing the costs related to supply, manufacturing and distribution to end customers [8].

## 2.2. Influences of industry 4.0 and supply chain 4.0 management on operational logistics

Considering the essence of the functioning of the operational logistics integrated in each structure of the component of the united



SOURCE: McKinsey

Fig. 2. Synthetic vision on the supply chain management mechanism 4.0.[9].

national combat forces, as well as of those of the Alliance, it is understood, out of the aspect of innovation and modernization, a specific, intersystemic relationship of Industry 4.0 and supply chain management with the types of logistics in the military field, first through *production logistics*, then through the creation of supply chains from domestic producers of the defense industry or from external suppliers to the *logistics structures “in service”* and, further, to *operational logistics entities*. From here, the actions of supply and resupply of the operational forces begin assembled with modern technical systems and

combat materials, as well as with effective and efficient means of movement and transport, all with adequate facilities for masking, self-protection, deployment and use in complex environments confrontation with the opposing forces, related to the war of the future.

Figure 3 shows the list of types of military logistics in order to provide the necessary goods and services to consumers and users in the composition of operational military organizations.

The modern operational logistics is the essence of the success of all military actions and has as main attributes: agility;

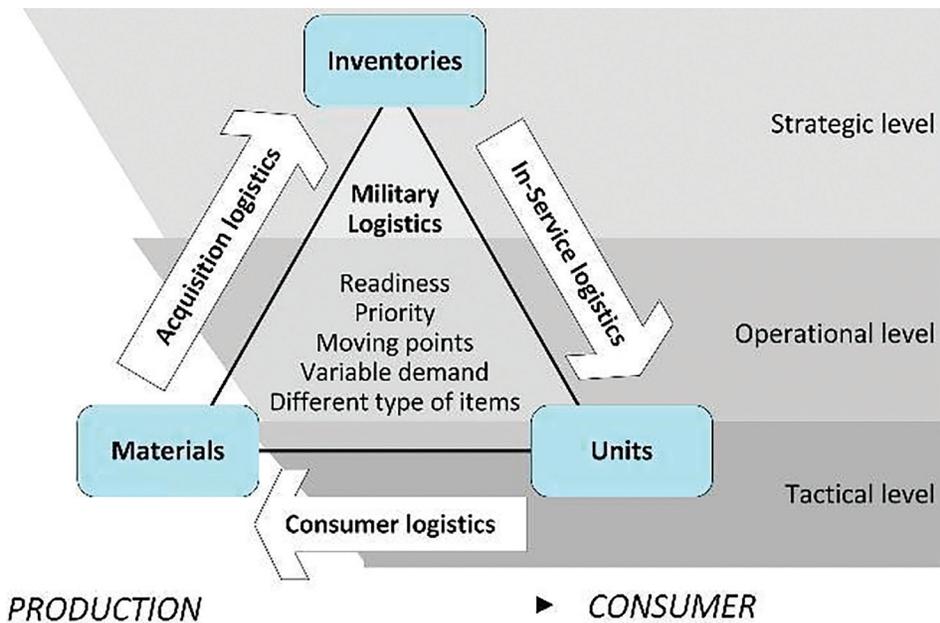


Fig. 3. Relation of the types of military logistics in the process of achieving the logistical support of the joint operational forces [10].

resilience; survival; the immediate ability to respond to the demands of combatant forces; effectiveness and efficiency. All these elements must be adequately correlated with the missions of the fighting structures, in Joint type combinations to allow (together) the successful projection of the established force by carrying out complex actions aimed mainly at: generating operational force; increase the level of readiness; deployment in the theater or area of operations; integration in the tactical device of the assembled operation; redeployment (after completing the mission) and restoration or regeneration [11].

In order to successfully meet the above requirements, military logistics managers and their subordinates in all areas of operational logistics support are those who must ensure the combined procurement, installation and use, for efficiency generation, of new technologies, already widely used in the digital society, including artificial intelligence, such as: “*big data; cloud computing; Internet of Things (IoT); autonomous vehicles; robotics; 3D printing*”, s.a. Through their specific hardware and software, for assembly and functional integration, the mentioned technologies functionally determine modern and complex digital mechanisms, which must en-

sure the increase of the power of the operational logistics [12].

Therefore, the products, technique and materials, which are the subject of rapid acquisitions and distributions to military operational organizations, involve the efficient application of 4.0 marketing and 4.0 logistics within the supply chain management 4.0. All these three disciplines present functions adapted to artificial intelligence and focused on the evolved requirements of the combatant military entities, according to their functional particularities and missions.

The flow of ideas presented also reveals the implications of Industry 4.0, on the modernization of operational military logistics, which is explained precisely by the modern operation of specific processes in supply chains 4.0 (of profile) by using intelligent sensors, RFID systems, smart software, automation and digitization. All these serve the operations of design and realization of fast and efficient flows of goods and services in order to satisfy the needs of consumers and military users (individual and organizational) [13].

In figure 4 I present in essence some factors that determine modernity in operational logistics.

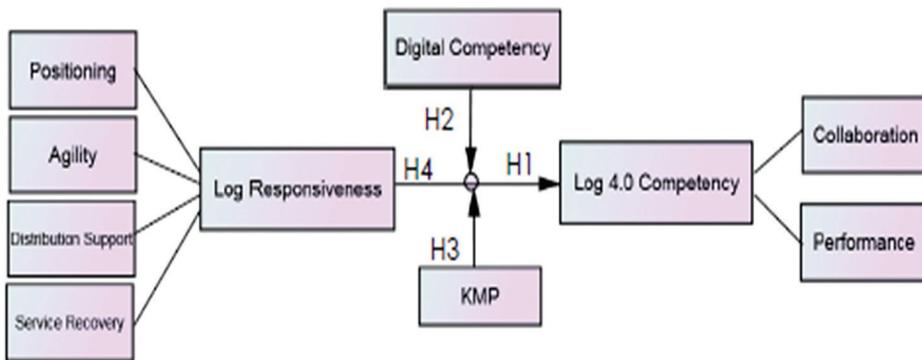


Fig. 4. Essential functional elements of logistics 4.0 integrated to operational logistics [13].

The nature of military logistics is much more complex today, due to the specific support to be given to operational structures in each category of military forces, which requires adequate information and cyber protections (along with other forms of force protection).

### 3. ESSENTIAL ELEMENTS OF THE MODERN FUNCTIONING OF OPERATIONAL LOGISTICS

The optimal functionality of modern operational logistics is determined by the efficient engagement of its fields within the complex mechanism of timely granting and the efficiency of the logistical support necessary for the combat forces within the Alliance bodies.

In order to fulfill the missions by the operational forces, the practice

of war has shown that a continuous correlation must be made *between the pace of supply / resupply and the pace of operations*.

According to US General Walter Bedell Smith (*Chief of the Allied Expeditionary Staff at Supreme Headquarters*), it is not necessarily a matter of changing and adapting action plans as a result of the effects of adverse forces' operations, "*but modified tactics are much more difficult*"[14].

Technological, economic and communication innovations through particularly easy Smart-Tech means are also revolutionizing the military logistics integrated into the operational structures, destined to be deployed and act in theaters or areas of operations [15].

The current requirements for the defense of Romania's territory,

correlated with the strategic objectives of NATO and the United States, have led to national development of endowment programs with modern technical combat systems, to allow operational military organizations to carry out actions in complex environments confrontation with the forces of any opponent. Under these conditions, the tactical structures of logistical support are forced to respond to the new challenges related to ensuring the proper functioning of the new equipment purchased, in order to be used in the operations involved in future conflicts.

The new requirements for the integration of operational forces in a future, complex conflict environment, highlight important connections and interactions between technological and economic systems particularly innovative and efficient, which involves supply chains in a permanent interdependence to honor contracts of the beneficiary entities within the combat forces structure.

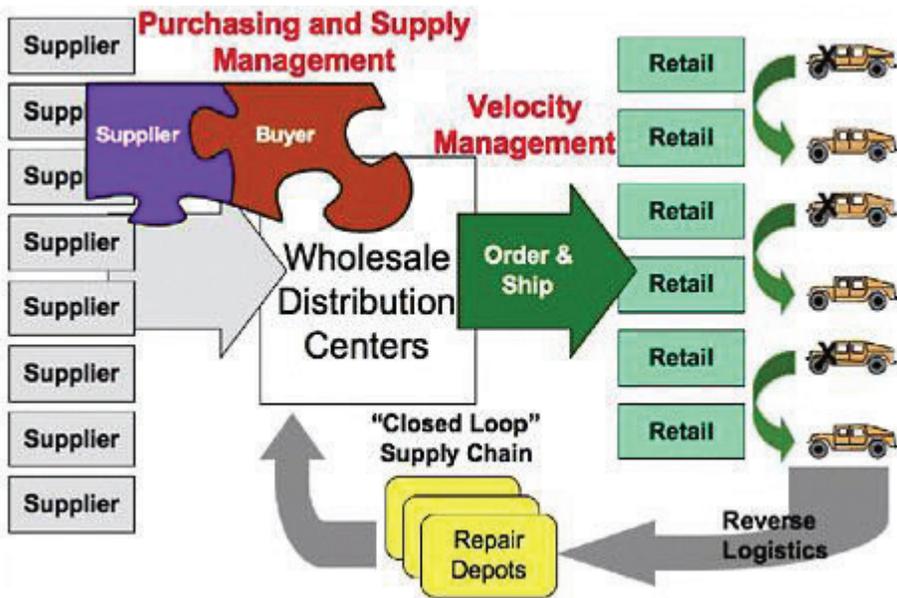
The military supply chains (modernized according to SCM 4.0 requirements), adequate for the integration into the mechanism of timely provision of logistical support to operational forces, must allow speed, effective and

efficient operation, adaptation and augmentation possibilities, to respond immediately to unforeseen requests, imposed by the immediate and continuous changes of the actions of the fighting forces, sustained [16].

It results, obviously, that the specifics of the national operational forces, as well as of those in the structure of the Alliance require the creation of supply chains that will continuously respond to the requests for goods and services in continuous dynamics. Here, it is added the timely provision of spare parts and aggregates necessary for the repair of technical and armament systems, which are often manufactured by unique manufacturers, without a profile market (for example: engines; transmissions; housings, etc.) [17].

At the same time, the reverse circuit of spare parts and replaced aggregates must be considered in order to transform or repair for the reuse of component alloys. In this way a supply-delivery chain with a closed-loop (*"closed-loop" supply chain*) is formed [18].

Figure 5 shows a used model of the supply chain, for the logistical support of the United States operational forces.



**Fig. 5.** A model of the supply-delivery chain for the logistical support of the operational forces [16].

The efficient functioning of the previously presented model, in order to increase the performance, was based on the progress factors revealed by figure 2.

In a retrospective view, it is important to note that in preparation for Operation *Iraqi Freedom*, logistical support structures and formations were deployed to Kuwait, potentially equivalent to more than 150 “*Wal-Mart*” stores to meet the functional requirements of about 250,000 fighters in the land, air and naval forces [19].

Therefore, rapid technological, economic, digital and managerial developments only allow the commanders of operational forces and their subordinate logistics leaders

to plan, ensure and use quickly, agile, efficient, effective and in real conditions of protection all logistical resources at disposition in order to increase the operational power and to facilitate the achievement of the success of the missions received by the subordinate forces, regardless of the conditions of time, season and weather in the theater or the area of military actions.

Next, the logistics managers and the specialized logistics (subordinates) will carry out, from my point of view, those planned and monitored actions, meant to determine fast and protected movements of material goods (products; technique; materials) through supply chains (civil and/or military) which include, in full functional harmony:

- *suppliers (civilian or military) of all types (including suppliers' suppliers);*

- *different national or multinational producers (from the defense industry or not);*

- *central distributors (which can be: civil distribution centers - zonal and local;*

- *adequate support structures for the joint force at the level of the third logistic support line - from the organic Joint Logistic Support Group;*

- *support groups or modules for the execution of the logistic support at the level of the second line of logistic support;*

- *wholesalers and material warehouses of ANRPS or economic operators;*

- *entities from the first line of logistic support, respectively: military logistic structures of execution (of level support group, unit, subunit, transport formation, storage, maintenance and medical support));*

- *various retailers;*

- *advanced logistical structures intended for the logistical support of companies (similar) such as battle supply points/groups, injured evacuation points/groups, observation points/groups, technical evacuation, etc.;*

- *military consumers and users of the combat structures.*

According to the above, I appreciate that supply chains (civil, military or mixed) must have the infrastructure and related modern technologies, which allow continuous inflows and outflows (material, financial, informational and of another nature), to meet the appropriate requirements of the logistical support necessary for the operational forces in a certain theater or area of operations.

Although the data and logistical information necessary to support the profile of operational forces are today fully computerized, capitalized and transmitted properly, according to military experts in modern armies, there are still no efficient and secure technologies (platforms, systems, etc.) which would allow a total and continuous visibility of the existing resources in transit, pre-positioned, on the beneficiary military organizations, as well as of the operations related to them [20].

The revealed aspects aim, on the one hand, possible manifestations of insufficiency of the agility and resilience of the supply chains, and on the other hand, non-conformities in the continuous, timely and efficient information of the logistics managers and implicitly of the leaders of the maneuver and support structures with recent and truthful information, in the appropriate places and times for operational situations, which may lead to incomplete replenishment [21].

The demands of the new operational requirements, involved in the current and future military challenges, determine that *movement and transport* represent an essential area of logistical support, adequately related to the supply chain management. Therefore, in order to fulfill the missions received by the fighting and support forces, important types and quantities of logistic resources must be provided in the indicated places and at the opportune moments, allowing the rapid deployment, integration and engagement of operational forces in nonlinear offensive and/or defensive, hybrid and asymmetric actions, to fulfill the missions of the Alliance's force structures engaged in joint multinational operations [22].

The great military powers of the world have implemented different concepts of deploying operational capabilities in theaters or areas of operations. For example, as a military superpower, the United States has implemented the “*strategic triad*” in accordance with the provisions of its own military doctrine (Figure 6). Therefore, the concretization of the mentioned concept includes three fundamental elements: • *strategic air transport capacities*; • *maritime transport capacities*; • *important stocks of materials pre-positioned according to the requirements of the operations designed to be carried out in theaters of operations outside the national territory* [22].



Fig. 6. The *strategic triad* model implemented by the U.S. military.[22]

The transport potential for the realization of the mentioned triad includes first of all strategic means of transport (military and commercial) adequate to the two air and naval modes, but also transport and storage capacities necessary to achieve the pre-position of materials (on land and on logistical support ships) confrontational environments in various theaters (areas) of operations around the world (Joint) [22].

Depending on the concrete action situation, the requirements of the logistical support of the combat forces increase in complexity and as such exceed their own movement and transport capacities (according to land, air and naval transport modes) and can engage the transport potential of civilian capabilities involving reference territorial infrastructures, respectively highways, railways, airports, sea and river ports, as well as adequate operational resources, such as road, rail, air, sea, river means of transport, warehouses, etc. For increased effectiveness and efficiency, here are very important investments to achieve or modernize the mentioned assets (by areas) in accordance with the requirements and standards for implementing the requirements of Industry 4.0 and supply chain 4.0 [14] [26].

From my point of view, for the deployment of forces and means in order to carry out timely and effective defensive operations in areas of operations (imposed by threats and anticipated hostilities) on the national territory, although there are, on categories of forces, a significant number of adequate transport means, they are insufficient; at the same time, in support of the joint operations, the continuous development and modernization of the critical transport infrastructure, as well as of other adjacent territorial capacities must be taken into account. Therefore, depending on the scenarios developed for defense at the strategic, operational (joint) and tactical levels, I believe that in the field of movement and transport there must be (in peacetime) all the necessary logistical resources (human, material and financial and other) to allow the successful fulfillment of the missions of the operational forces.

In the current conditions, the transformations related to the industrial revolution 4.0 determine that the *maintenance management specialists act in order to increase the performance of the maintenance of technical combat systems* in the management of operational military logistics by streamlining the resources employed (human,

material, financial, informational and other), maintaining their functioning at their standard parameters during their life cycle. Currently in the army forces of N.A.T.O. members the emphasis is on the predictability and proactivity of maintenance systems. In this context, the logistics leaders and specialists in the field of maintenance emphasize the functional reliability of the equipment of the operational forces, by monitoring the use and continuous analysis of their functional state [23].

According to American experts, in the action environment of the future (with non-contiguous areas of operations that may include long and insecure lines of communication), for the rapid deployment of joint forces there must be no logistic footprint developed with multiple protection implications. Therefore, in accordance with the new operational requirements, the logistics managers of the North American military are considering, for increased effectiveness and efficiency, the immediate implementation of a modern maintenance system for the equipment of the operational forces with two divisions, namely:

- “*field maintenance*” or “*on-system maintenance*”, which will combine the level of “*unit*

*maintenance*” with the level “*direct support*”; here, specific operations will take place for the evacuation and repair of defective equipment, following their return to users;

- “*sustainment maintenance*” or “*off-system maintenance*”, which will combine the “*general support*” level with the “*depot level*” type; essential operations appropriate to the repair of the evacuated equipment were carried out, followed by their distribution to the beneficiary users by resupplying [23].

It follows, therefore, that in order to achieve the modern support for the maintenance of the equipment of the operational structures it must exist on all the necessary resources, which must allow real-time communication and interventions for evacuation, repair, restoration or replacement of severely damaged equipment in order to fulfill missions received by the fighting and support structures within the actions planned and carried out in a multinational context (on the national territory or outside it.[24].

#### 4. ASPECTS OF MODERNITY IN THE PLANNING AND REALIZATION OF OPERATIONAL LOGISTICS

Modern operational logistics planning is very important in

planning an operation at the tactical and joint levels, because it offers the commander of a combat structure the opportunity to resiliently employ sufficient resources, according to his decisive option, to achieve full victory after confronting opposing forces.

According to the tactical and joint requirements, in the field of operational logistics, decisions must be taken correctly, prudently and intelligently based on the data, information and visibility necessary to carry out the planning processes and timely provision of logistical support to combat operational structures depending on the mission received [14].

Based on the highlights, the concept of “*Sense and Respond Logistics*” or “*Logistics that perceives and responds*” is particularly current and useful. This concept perfectly suited to operational logistics 4.0 is focused on the systemic facilities of communication networks and logistics within the combat tactical echelon. In this functional framework are very important the physical processes of logistical support, achievable with adequate human, material, financial and informational resources, which allow anticipation, adaptation and coordination according to the requirements of operational dynamics [25] [26].

In figure 7, within the “*Sense and Respond Logistics*” system, a connectivity from the support source to the point of use in the network is generically highlighted. Here, it results that, within the S&R control node (C2), the traded information is processed in real time, according to the set standards. From here, filtered signals are sent to users (from the support network to the request network).

Given the need to meet the requirements of S&RL officials, according to NCW principles, US military specialists state the need to stimulate innovation, test, verify and validate methods and techniques in support of the effective and progressive use of the S&RL concept. Therefore, this way obviously facilitates the actions of the logistics leaders involved in the decision-making processes of logistical support of the combat forces at the tactical and joint levels [24].

The requirements of the United States’ 2017 national security strategy highlight the focus in the future on expeditionary operations effectively supported with the necessary resources within existing bases on their national territory. For this purpose, the stocks necessary for the forces that will prepare and carry out the mentioned operations

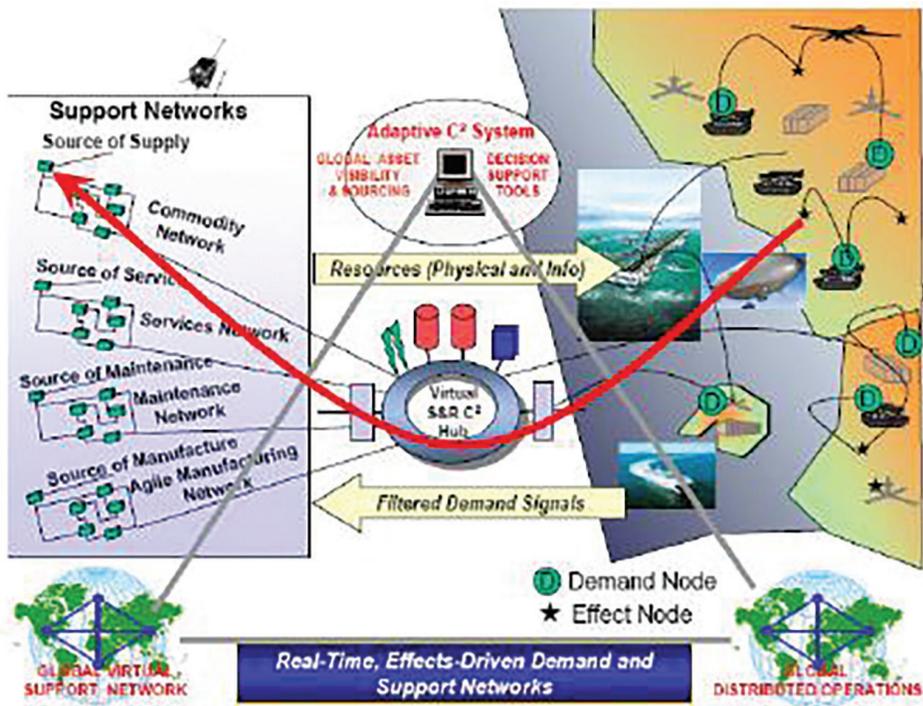


Fig. 7. Generic relevance of the “Sense and Respond Logistics” mechanism [25].

will be pre-positioned in advance, taking into account the support of additional forces.

Based on the mentioned security strategy, a team of military specialists (active and reservists from North Carolina) created and implemented a specific system for *military logistics network planning (MLNPS)*. This modern (planning) mechanism allows user military logisticians to quickly analyze the data and information needed to identify, establish, evaluate and compare options to support of the

possible courses of action for the successful conduct of military expeditionary operations (2020). [20].

Therefore, according to the research results of the military experts mentioned, currently, the MLNPS program allows the identification of logistical bottlenecks, facilitating the short-term highlighting of their consequences. It is obvious that in order to ensure the continuity of supply flows adequate to support the combat actions of the expeditionary operational structures, their logistics

managers have the opportunity to estimate, in due time, possible delays downstream of a supply-delivery chain (military, civilian or mixed). For example, due to functional disturbances, a supplier (contractor) can progressively reduce, for objective reasons, the production established to be delivered to customers (beneficiary maneuvering and support structures). Under these conditions, the logistics leaders will proceed to inform the commanders immediately with viable procurement alternatives in order to make urgent decisions to maintain adequate supply flows, necessary for the fulfillment of missions by the dispatching operational forces [20] [23].

According to the military experts, it is obvious that, based on the functional modernizations brought, the evolved systems of command and logistics control (from the endowment of the operational forces of the North American military) will be able to ensure adequate agility, even if enemy forces would disrupt communications through hostile actions of cybernetic and electronic type. For the mentioned purpose, the continuous technological modernization of the logistics

data transfer systems, from the digital processes to the analog and functional modes, is particularly important [44].

## 5. CONCLUSIONS

The tactical, joined and strategic requirements of future conflict operations determine the leaders of combatant structures to ensure sufficient availability to understand and decide quickly and efficiently on the modern logistical capabilities available to create superior combat power to destroy a potential enemy. To this end, the logistical networks of the operational forces (*technologically superior, informally organized and continuously protected from the aggressive actions of the enemy*) will be permanently functional and employed by military logistics leaders, according to their agility and tactical flexibility in order to achieve the established support objectives.

It results, therefore, that the continuous optimization of storage and transport capacities, in order to meet the requirements of distribution logistics, will determine that both the leaders of operational structures and those of logistics support entities

to be more skilled and proactive in allocating effectively and efficiently the available resources. In this sense, they will seek the continuous realization of the concept of “*just-in-time*” in the process of *overlapping the logistical effort over the operational one*, allowing the rapid attack, encircling and destroying the aggressive forces of the enemy, in a theater or in a joint operations area.

The organizational changes and transformations of the tactical maneuvering and support structures have determined the training and development of their commanders`and subordinate logistics leaders`abilities to deploy, integrate and support the resources of the fighting power of organizations led in complex combat environments, dominated by hybrid, nonlinear and asymmetric operations.

All the mentioned desideratum are based on viable and highly evolved options (as a result of the short transition to the implementation of industry 5.0 and, implicitly, to the management of the supply chain 5.0), which will allow the effective and efficient implementation of operational logistics functions in full accordance

with the missions and requirements of operational structures, regardless of time, season and weather.

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# DETERMINATION OF DEPOT LEVEL MAINTENANCE AT WARSHIP USING ANALYTICAL HIERARCHY PROCESS (AHP) AND TOPSIS METHOD

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*KRI maintenance is carried out at three separate levels based on the resources and capabilities required to carry out maintenance: Organizational, Intermediate, and Depot Levels. Therefore, a solution strategy and maintenance mechanism is needed to deal with these obstacles. This study aims to provide an analysis of determining the depot level maintenance in order to support the readiness of the Marine Operations Command I.*

*This research uses the Analytical Hierarchy Process (AHP) and TOPSIS method approaches. Based on the results of the study, the Criteria for selecting the Security Level showed that these criteria had the highest weight of 0.181 with a consistency ratio (CR) of 0.093. Then the Criteria for the Use of Technology has a weight of 0.158 as the second criteria. Criteria Cost as the third criteria with a weight of 0.131. While the Operational Time Criteria has a weight of 0.061 as the criteria with the lowest weight.*

*Based on the results of research using the Technique for Order Performance by Similarity to Ideal Solution (TOPSIS) method, it can be concluded that the first rank comes from TUX with a weight of 0.772. IBX as the second alternative with a weight of 0.633. KRI SRE as the third alternative with a weight of 0.600. PTX as the fourth alternative with a weight of 0.587. While SSX with a weight of 0.274 as the last alternative because currently (2021) is carrying out maintenance at the depot level.*

**Key Words:** *Depot Level Maintenance, Indonesia Warship (KRI), Analytical Hierarchy Process (AHP), TOPSIS (Technique For Others Reference by Similarity to Ideal Solution).*

## 1. INTRODUCTION

The availability of budget for the maintenance and repair of the *KRI* is one of the obstacles that is quite difficult for the Navy in carrying out the scheduled and planned maintenance of the defense equipment (Sarjito, 2020). This is because the PMS (Plan Maintenance System) requires relatively large costs and a long time to support its programs. So that in its implementation the predetermined PMS (Plan Maintenance System) schedule is often missed and what happens next is as long as a system / spare part has not been damaged, the component will continue to operate (Ardhi, et al., 2018).

The life cycle of the *KRI* (Indonesian Warship) is determined by the implementation of maintenance and repairs carried out. Thus, operational demands and expectations change both strategically and tactically over its lifetime. *KRI* maintenance is carried out at three separate levels based on the resources and capabilities required to carry out maintenance: Organizational, Intermediate, and Depot Levels. Therefore, a solution strategy and maintenance mechanism is needed to deal with these obstacles.

This study aims to provide an analysis of determining the depot level maintenance in order

to support the readiness of the Marine Operations Command I. This research uses the Analytical Hierarchy Process (AHP) and TOPSIS method approaches. The AHP method is used to determine the selected criteria in the implementation of depot level maintenance. The TOPSIS method is used to analyze the priority of the *KRI* Parchim class in determining the depot level maintenance.

Previous studies related to AHP and TOPSIS are Implementing Fuzzy TOPSIS on Project Risk Variable Ranking (Husin, et al., 2019), Risk Management and Control of Dams Based on Integrating TOPSIS and RAM-D Techniques (Case Study: Paveh Rood Dam, Iran) (Sadeh & Rezaian, 2017), Risk Assessment Using Fuzzy TOPSIS and PRAT for Sustainable Engineering Projects (Koulinas, et al., 2019), Urban Network Risk Assessment Based on Data Fusion Concept using Fuzzy-AHP, TOPSIS and VIKOR in GIS Environment (Rokhsari & Sadeghi-Niaraki, 2015), Project Risk Assessment in Enterprises with the Use of TOPSIS Method in the 2014–2020 Perspective (Walaszczyk, 2016), Using Fuzzy AHP And Fuzzy TOPSIS Approaches For Assessing Safety Conditions At Worksites In Construction Industry (Basahel & Taylan, 2016), Risk Management In Urban Tunnels Using Methods Of

Game Theory And Multi-Criteria Decision-Making (Nikkhah, et al., 2019), A Hybrid Fuzzy TOPSIS – Best Worst Method for Risk Prioritization in Megaprojects (Norouzi & Namin, 2019), Group Decision-Making Using Improved Multi-Criteria Decision Making Methods for Credit Risk Analysis (Wua, et al., 2016), A fuzzy AHP-TOPSIS Framework for The Risk Assessment of Green Supply Chain Implementation in the Textile Industry (Nazam, et al., 2015), Implementation of AHP and TOPSIS Method to Determine the Priority of Improving the Management of Government's Assets (Febriansyah, et al., 2017), Improved AHP-TOPSIS Model for The Comprehensive Risk Evaluation of Oil And Gas Pipelines (Wang & Duan, 2019) and Risk Level Evaluation on Construction Project Lifecycle Using Fuzzy Comprehensive Evaluation and TOPSIS (Gebrehiwet & Luo, 2019).

This research is expected to develop knowledge in the scope of the planned maintenance system to support the readiness of the KRI. Furthermore, this research is expected to provide input for the Indonesian Navy in determining the maintenance of the depot level in the implementation of KRI maintenance. In this study, there are several limitations of the problem, among others, this research is limited to the work area of the Fleet Command I on

the KRI Parchim class. Second, this research was carried out at the depot level maintenance system.

This research consists of several sections. Section 2 explains the theory of maintenance, categories of maintenance, Repair and maintenance in KRI. Section 3 describes the research method consisting of the Analytical Hierarchy Process (AHP) method, the TOPSIS method, research sources, data collection, processing, and data analysis. Section 4 and 5 describes the results of the research analysis and discussion. Section 6 describes the conclusions of the study.

## **2. LITERATURE REVIEW**

### **2.1. Theory of Maintenance**

Maintenance is most commonly defined as all activities aimed at maintaining a system or restoring it to a condition deemed necessary for it to function as intended (Tiddens, 2018). Other definitions include maintenance objectives such as providing services to enable the organization to achieve its objectives and maintaining the system's ability to provide services. Although the definition is quite broad, five specific maintenance responsibilities are generally recognized (Alhouli, 2011):

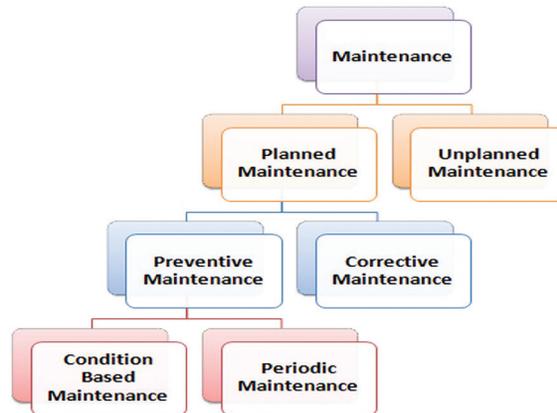
- a. Keep assets and equipment in good condition, properly

- configured and safe to perform their intended functions;
- b. Perform all maintenance activities including preventive, predictive and corrective maintenance, repair, design modification and emergency maintenance in an efficient and effective manner;
- c. Preserving and controlling the use of spare parts and materials;
- d. Commissioning of new factories and expansion of factories;
- e. Operate utilities and save energy.

maintenance concept to apply, which maintenance policy to choose, and so on. Viewed from top to bottom, for example from the strategic level to the operational level, these levels can be classified by the following questions (DeWitt, 1991), 1) What is achieved by maintenance?; 2) How can this goal be achieved?; 3) What triggers the maintenance action?; 4) What is the preferred Maintenance approach?; 5) How is it treated?; 6) How well is the maintenance done?

## 2.2. Ship Maintenance

Ship maintenance is basically considered in the early stages of ship



**Fig. 1.** Philosophy of maintenance  
(Goossens & Basten, 2014)

Technical maintenance can be divided into several levels, from the strategic level to the operational level. At each level, decisions are made, for example, what the purpose of maintenance is, which

design. Each component in the ship is scheduled to be maintained separately in the maintenance scheduling plan to maximize the functionality of the ship. A ship can be ready if all its major components are operational, such as

propulsion, power, air conditioning and cargo engines. If one of the main components is not operational, the ship will be classified as unprepared, and maintenance will be required (Goossens & Basten, 2014).

In the marine industry, ship maintenance and ship repair can be accomplished in two different ways. First, it can be done at the ship repair site when the ship is scheduled to dry dock to survey underwater sections. Second, when is the time for the classification survey (Aldous, 2015).

to reduce the number of breakdowns, and can take the form of time-based or condition-based maintenance (Alhouli, 2011).

### 2.3. Repair and Maintenance on KRI

The life cycle of the KRI can be measured in decades. Thus, operational demands and expectations change both strategically and tactically over its lifetime. Combine this adaptability with the length of time

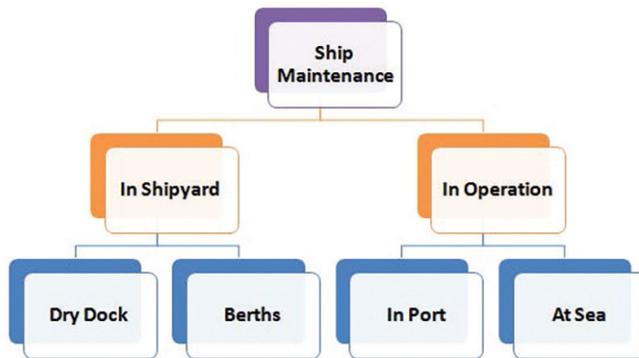


Fig. 2. Ship Maintenance (Alhouli, 2011)

Ship maintenance, like maintenance other industries, usually uses two types of policies, namely corrective maintenance policies and preventive maintenance policies. A breakdown maintenance policy is usually carried out without preventive maintenance, except for essential lubrication and making minor adjustments. Preventive maintenance involves maintenance

required with similar vessels, to design, build and maintain. Life cycle maintenance includes depot maintenance, intermediate maintenance, and maintenance at the organizational level (Resobowo, et al., 2014). Depot maintenance, or D-level, includes “a major overhaul or complete rebuild parts, assemblies, subassemblies, and final goods, including the manufacture of parts.” This complex

level of repair is carried out at a depot level facility, such as a shipyard. Any work that requires the boat to be out of the water (e.g. In dry dock) is usually D-level maintenance (DeWitt, 1991).

Intermediate maintenance, or level-I maintenance, includes smaller repair work that is usually done on the dock side. Organizational level maintenance is carried out by the crew on board and consists of preventive maintenance and day-to-day servicing. Vessel maintenance is carried out at three separate levels based on the resources and capabilities required to carry out maintenance: Organizational, Intermediate, and Depot Levels (Resobowo, et al., 2014).

Depot level maintenance (D-Level) consists of maintenance that requires resources or capabilities that exceed Tier-I capabilities. D-Level maintenance must be carried out by a naval shipyard or private shipyard. For submarines, this usually includes maintenance that requires the vessel to be in a dry dock facility. The ship's D-Level maintenance period is identical to the approval of the CNO (The Chief of Naval Operations) or the Chief of Naval Staff and is exclusively scheduled at a naval shipyard unless the naval shipyard is at capacity limit. For the purposes of this analysis, all analyzed D-Level maintenance is carried out by the general shipyard (Bates, 1978).

### 3. MATERIAL/METHODS

#### 3.1. Analytical Hierarchy Process (AHP)

AHP describes complex multi-factor or multi-criteria problems into a hierarchy, according to Saaty hierarchy is defined as a representation of a complex problem in a multi-level structure, where the first level is the goal, followed by the factor level, criteria, sub-criteria and so on down until the last level of alternatives with a hierarchy of a complex problem can be described in groups which are then arranged into a hierarchy as the problem will appear more structured systematically (Kuriyan & Tech, 2016).

One of the main advantages of AHP that distinguishes it from other decision-making models is that there is no absolute consistency requirement. So that the existing problems can be felt and observed, but the completeness of the numeric data does not support quantitative modeling of the problem (Muinde, et al., 2014).

There are 7 pillars that are used and must be considered in AHP modeling, including 1) Ratio scale is a comparison of two values ( $a/b$ ) where the values of  $a$  and  $b$  are the same type (unit); 2) Pairwise comparisons; 3) Conditions for the sensitivity of the eigenvectors; 4) Homogeneity and clustering;

5) Synthesis; 6) Maintaining and reversing the order of weighting and ordering in the hierarchy; 7) Group considerations (Ozsoy & Yilmaz Ozsoy, 2018).

Humans instinctively can estimate simple quantities through their senses. The easiest process is to compare two things with a reliable comparison accuracy. For this reason, Saaty, set a quantitative scale of 1 to 9 to assess the comparison of the importance of an element to another (Saaty, 1990)

The steps of the AHP method include (Mutmainah, et al., 2017):

- a. Create a pairwise comparison matrix.
- b.

$$A = a_{im} = \begin{bmatrix} 1 & a_{12} & \dots & a_{1n} \\ \frac{1}{a_{12}} & 1 & \dots & a_{2n} \\ \dots & \dots & \dots & \dots \\ \frac{1}{a_{1n}} & \frac{1}{a_{2n}} & \dots & 1 \end{bmatrix} \quad (1)$$

i, m = 1, 2, ..... , n = related criteria index.

Table 1. AHP Scale.

Interest Scale	Definition	Explanation
1	Equal Importance	Two activities contribute equally strongly to the goal
3	Weak Importance	One activity is slightly more important than the other
5	Strong Importance	One activity is more important than the other
7	Very Strong Importance	One activity is very important compared to other activities
9	Absolute more Importance	One activity is very, very important compared to other activities
2, 4, 6, 8	<b>Middle value</b>	
Reciprocal	Describing the dominance of the second alternative over the first alternative	

(Saaty, 1990)

- c. Create a criterion value matrix.
- d. Create a Sum Matrix for Each Row.
- e. Assessment of Consistency Index (CI) and Consistency Ratio (CR).

$$CI = \frac{\lambda maks - n}{n}; \quad (2)$$

$$CR = \frac{CI}{RI} \quad (3)$$

N = Number of Elements,

RI = Random Consistency Index.

If the CR ratio is 0.1 (ie 10%), the matrix is said to be consistent and the decision W is accepted. On the other hand, CR beyond that implies too many contradictions in the matrix. Anticipation of the latter situation is to review the matrix, then revise the weights loaded by the vector.

and Hwang in 1981. This method uses the principle that the chosen alternative must have the closest distance from the positive ideal solution and the farthest from the ideal solution. Negative from a geometric point of view. Determination of the relative proximity of an alternative to the optimal solution is done by calculating the Euclidean distance. The TOPSIS method considers the distance to the positive ideal solution and the negative ideal solution by taking the value of relative proximity to the positive ideal solution (Walaszczyk, 2016).

The positive ideal solution itself is defined as the sum of all the good values that can be achieved for each attribute, while the negative-ideal solution consists of all the worst values achieved for each attribute. This method is widely used to complete practical decision

**Table 2.** Random Consistency Index Value.

1	2	3	4	5	6	7	8	9	10
0	0	0.58	0.9	1.12	1.24	1.32	1.41	1.45	1.49

(Saaty, 1980)

### 3.2. TOPSIS (Technique for Others Reference by Similarity to Ideal Solution)

TOPSIS (Technique For Others Reference by Similarity to Ideal Solution) is a multi-criteria decision-making method introduced by Yoon

making. This is because the concept is simple and easy to understand, computationally efficient, and has the ability to measure the relative performance of decision alternatives (Basahel & Taylan, 2016).

The following are the steps of the TOPSIS algorithm in making conclusions (Husin, et al., 2019):

- a. Define the problem to be solved using the TOPSIS method.
- b. Make a decision matrix according to the problem to be solved, then normalize the matrix with the equation.

$$r_{ij} = \frac{x_{ij}}{\sqrt{\sum_{i=1}^m x_{ij}^2}} \quad (4)$$

Where  $r_{ij}$  is the normalized matrix of the basic matrix of the problem, with  $i = 1,2,3,\dots,m$ , and  $j = 1,2,3 \dots n$ . While  $x_{ij}$  is the basic matrix to be normalized. For each  $i$  denotes the rows of the matrix, and for each  $j$  denotes the columns of each matrix.

- c. Normalize the  $r_{ij}$  matrix using the weight rating so that a normalized weight rating matrix is obtained, the equation used is as follows

$$y_{ij} = w_i \times r_{ij} \dots\dots\dots$$

(2) where  $y_{ij}$  is the rating matrix weighted,  $w_i$  is the weight of the  $i$ th rating, and  $r_{ij}$  is the matrix normalized in the second step. For  $i = 1,2,\dots, m$ , and  $j = 1,2, \dots, n$ . In this case, the rating's weight must be determined based on the number of decision variables being completed.

- d. Determine the positive ideal solution (A+) and negative

ideal solution (A-) based on the weighted rating matrix value in step 3. The following equation is used to find the value of the positive ideal solution  $+=(y1+,y2+,...,yn+)$ . (3) and to find the value of the negative ideal solution, the following equation is used  $=(y1-,y2-,... ,yn-)$  provided that:

$$y_i^+ = \begin{cases} \max y_{ij}: & \text{if } i \text{ is benefit attribute} \\ \min y_{ij}: & \text{if } j \text{ is a cost attribute} \end{cases}$$

$$y_i^- = \begin{cases} \max y_{ij}: & \text{if } i \text{ benefit attribute} \\ \min y_{ij}: & \text{if } j \text{ is benefit attribute} \end{cases}$$

- e. Determine the distance between the weighted value of each alternative to the positive ideal solution and the negative ideal solution. To determine the distance between the weighted value of each alternative to the positive ideal solution, the following equation is used:

$$D_i^+ = \sqrt{\sum_{i=1}^n (y_i^+ - y_{ij})^2} \quad (5)$$

Meanwhile, to calculate the distance between the weighted value of each alternative to the negative ideal solution, the following equation is used:

$$D_i^- = \sqrt{\sum_{i=1}^n (y_{ij} - y_i^-)^2} \quad (6)$$

- f. The last step is to calculate the preference value for each alternative with the equation:

$$V_i = \frac{D_i^-}{D_i^- + D_i^+} \quad (7)$$

### 3.3. Steps

The research method used in this research is to use a quantitative approach. The main data come from interviews and questionnaires from six selected Experts. In addition, there are also several secondary data sources that come from books, journals, planning policies (Jakren), as well as compilations of regulations related to research. Experts are selected according to the needs of the relevant research object in supporting the depot level maintenance system with a total of three personnel and having work experience of 20 years.

In this study, the distribution of questionnaires was used to identify the criteria related to the determination of depot level maintenance and to analyze the determination of priorities in the implementation of depot level maintenance on KRI Parchim class. This research used unstructured/open interview method. Unstructured interviews are flexible, the structure of the questions and the wording of each question can be changed during the interview, according to the needs and conditions of the interview. Observation

activities in this study were carried out to collect data: infrastructure, HR activities, security level, instruments, related to determining the depot level maintenance and to analyze priority setting in the implementation of depot level maintenance at KRI.

In this study, data analysis used AHP and TOPSIS methods assisted by Expert Choice software and Microsoft Excel. Microsoft Excel is used to identify and analyze ratio coefficients and to accumulate the weighting of each expert in the research subject.

### 3.4. Research Goal

In this study, the research objective is to identify and analyze criteria with weighting related to determining the maintenance level of the Depot.

- a. In this step, the interview method is used to identify the criteria and the AHP method is used to give weighting of the criteria.
- b. The second step is to analyze the determination of priorities in the implementation of depot level maintenance at the KRI. In this step the priority determination uses the TOPSIS method.

### 3.5. Flowchart

This research consists of two stages in solving research questions

according to the framework diagram in Figure 3. The first stage begins with the identification of the problem formulation and continues with the analysis of the criteria related to the maintenance of the depot level at the KRI in the working area of Koarmada I in supporting the task of marine operations. The second stage aims to provide an analysis of determining priorities in the implementation of depot level maintenance on KRI.

in the KRI then related models and instruments would be made. Based on the research results, it is explained that this system has 8 (eight) main criteria. In order to get the value of the criteria, various types of tests are carried out. The initial weight value of the sub-criteria is obtained by dividing the weight of the main criterion by the number of sub-criteria below it. The initial weight of this sub-criteria is used as a reference

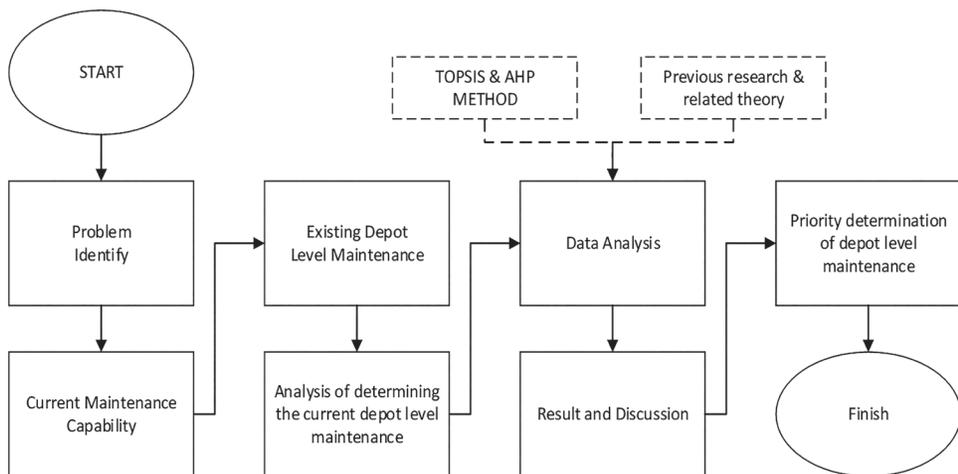


Fig. 3. Flowchart of research.

## 4. RESULT

### 4.1. Identification and weighting of criteria

In determining these criteria, literature studies were carried out from several books and Technical Instructions from units regarding the planned maintenance system

in determining the weight of the assessment of the overall score after the main criteria weighting process is completed. The identification stage of the criteria that will be used to determine the depot maintenance KRI is the result of an agreement with several experts with initial proposals from researchers.

**Table 3.** Data Expert Results of KRI Maintenance Level Criteria.

CODE	CRITERIA	CODE	CRITERIA
C-1	Characteristics	C-5	Operational time
C-2	Reliability	C-6	Cost
C-3	Use of technology	C-7	Resource Availability
C-4	Security level	C-8	Human Resources

The next step is to calculate the weight of the criteria from the pairwise comparison matrix between criteria. The results of the comparison of the level of importance between

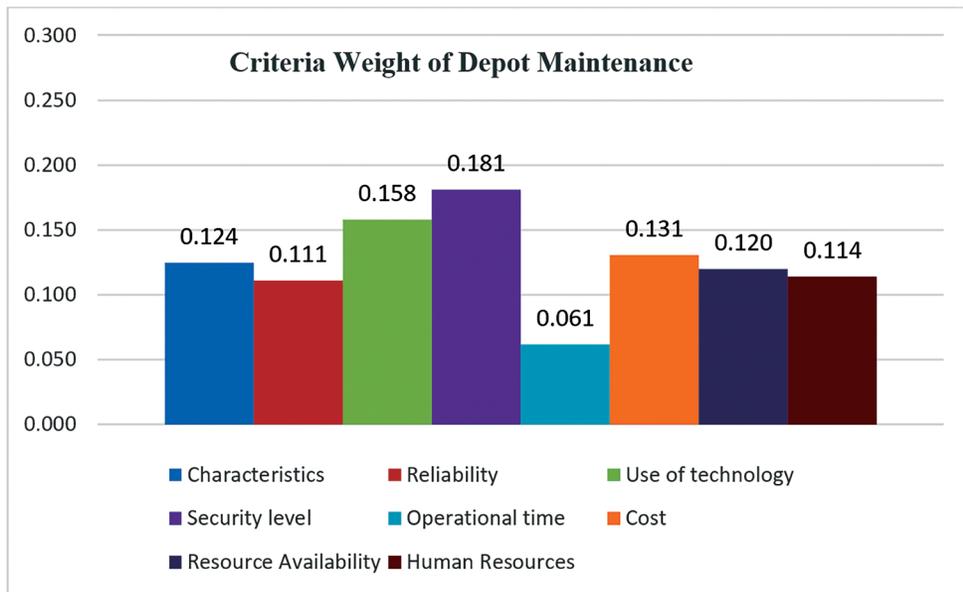
the criteria are then entered into the pairwise comparison matrix. In order to obtain the weight of the assessment of each variable, a paired comparison rating scale table is made.

**Table 4.** The value of the weight of the KRI maintenance level criteria.

Criteria	C1	C2	C3	C4	C5	C6	C7	C8	Weight
<b>C1</b>	1	1	1/2	1	2	3	1/2	1/2	0.124
<b>C2</b>	1	1	1	1/2	2	2	1/2	1/2	0.111
<b>C3</b>	1	2	1	1	2	1	2	2	0.158
<b>C4</b>	1	2	1	1	2	2	2	3	0.181
<b>C5</b>	1/2	1/2	1/2	1/2	1	1/2	1/2	1/2	0.061
<b>C6</b>	1/3	1/2	1	1/2	2	1	2	3	0.131
<b>C7</b>	2	2	1/2	1/2	2	1/2	1	1	0.120
<b>C8</b>	2	2	1/2	1/3	2	1/3		1	0.114
<b>CR =</b>	0.093								1.000

**Table 5.** The value of weights and rankings on the KRI's maintenance level criteria.

NO	CRITERIA	WEIGHT	RANK
1	Characteristics	0.124	4
2	Reliability	0.111	7
3	Use of technology	0.158	2
4	Security level	0.181	1
5	Operational time	0.061	8
6	Cost	0.131	3
7	Resource Availability	0.120	5
8	Human Resources	0.114	6



**Fig. 4.** Histogram of the weight values of the KRI maintenance level criteria.

Based on Table 5 and Figure 4 above, the selection criteria for the Security Level shows that these criteria have the highest weight of 0.181 with a consistency ratio (CR) of 0.093. Then the criteria for the use of technology have a weight of 0.158 as the second criterion. Cost criteria as the third criterion with a weight of 0.131. While the operational time criteria have a weight of 0.061 as the criteria with the lowest weight.

#### 4.2. Depot-level Maintenance Priority Analysis

Decision-making involves certain criteria in determining the maintenance of the KRI Depot level, there is no systematic way of making

decisions, causing the consideration of each of the existing criteria to be unclear so that it can result in wrong decisions. TOPSIS method is proposed as an alternative method of decision making that is multi-criteria. Clear decision-making criteria are needed in this method.

In this case, the determination of the maintenance level of the KRI Depot for the Parchim class was carried out by surveying the relevant stakeholders at random. From the survey results, it was found that eight criteria were taken into consideration in determining the maintenance of the KRI Depot level, which would later be calculated using the TOPSIS method.

The steps for calculating TOPSIS in this study are as follows:

a. Build a decision matrix.

**Table 6.** Paired Decision Matrix.

CRITERIA	C1	C2	C3	C4	C5	C6	C7	C8
PTX	4.6	4.2	4.2	2.6	4.1	4.4	5.0	2.9
CNX	4.4	4.2	4.2	2.7	4.1	4.9	5.0	3.0
STX	4.3	4.1	4.2	2.1	4.0	4.1	4.4	2.7
STX	4.5	4.5	4.6	2.5	4.0	4.4	4.5	2.4
SSX	4.6	4.3	4.5	2.4	4.0	4.7	4.8	2.7
WIX	4.7	4.1	3.9	3.1	3.9	4.6	4.8	3.3
TUX	4.3	4.0	4.0	2.6	3.5	4.7	4.6	3.1
TPX	4.7	4.1	4.2	2.9	4.2	4.6	4.8	3.7
IBX	4.3	3.6	3.8	1.9	4.0	4.4	4.7	2.8
SRX	4.4	4.2	4.3	3.2	3.4	4.6	5.0	3.4

In the decision matrix, the matrix column states the attributes, namely the existing criteria, while the matrix rows represent the alternative, namely school data. The decision

matrix refers to m alternatives that will be evaluated based on n criteria. The design of the decision matrix can be seen in Table 6.

**Table 7.** Criteria preference weight.

	C1	C2	C3	C4	C5	C6	C7	C8
Divide	9.842	9.093	9.266	5.684	8.785	10.035	10.791	6.641

The next step is to determine the preference weight of each of the criteria used in the TOPSIS method. The weight of preference is obtained from the results of the analysis of

how important these criteria affect the results. The bigger the effect, the bigger it is or vice versa, the smaller the value, the smaller the value.

b. Normalized matrix calculation.

**Table 8.** Normalized decision matrix calculation.

	C1	C2	C3	C4	C5	C6	C7	C8
PTX	0.467	0.462	0.453	0.457	0.467	0.438	0.463	0.437
CNX	0.447	0.462	0.453	0.475	0.467	0.488	0.463	0.452
STX	0.437	0.451	0.453	0.369	0.455	0.409	0.408	0.407
STX	0.457	0.495	0.496	0.440	0.455	0.438	0.417	0.361

	C1	C2	C3	C4	C5	C6	C7	C8
SSX	0.467	0.473	0.486	0.422	0.455	0.468	0.445	0.407
WIX	0.478	0.451	0.421	0.545	0.444	0.458	0.445	0.497
TUX	0.437	0.440	0.432	0.457	0.398	0.468	0.426	0.467
TPX	0.478	0.451	0.453	0.510	0.478	0.458	0.445	0.557
IBX	0.437	0.396	0.410	0.334	0.455	0.438	0.436	0.557
SRX	0.447	0.462	0.464	0.563	0.387	0.458	0.463	0.422

The calculation results are based on Table 7, then used to obtain the results of normalization of the decision matrix by calculating the performance rating of each alternative  $A_i$  on each  $C_i$  criteria. The results of normalization (R) can be seen in Table 8. Normalization Matrix, which has been calculated according to the normalized performance of each alternative on the criteria.

c. Weighted normalized matrix calculation.

After getting the data for calculating the normalized decision

matrix, the next step is to start making a weighted normalized decision matrix (y) whose elements are determined. This step is done by multiplying each row of the matrix from each coordinate matrix by the weight of the importance of each selection criteria or determining the level of improvement of the KRI. The result of the multiplication will be the weighted normalized decision matrix value in Table 9.

**Table 9.** Calculation of the weighted normalized decision matrix.

	C1	C2	C3	C4	C5	C6	C7	C8
PTX	0.058	0.051	0.072	0.083	0.029	0.057	0.056	0.050
CNX	0.056	0.051	0.072	0.086	0.029	0.064	0.056	0.051
STX	0.054	0.050	0.072	0.067	0.028	0.053	0.049	0.046
STX	0.057	0.055	0.078	0.080	0.028	0.057	0.050	0.041
SSX	0.058	0.052	0.077	0.076	0.028	0.061	0.053	0.046
WIX	0.059	0.050	0.066	0.099	0.027	0.060	0.053	0.057
TUX	0.054	0.049	0.068	0.086	0.029	0.064	0.056	0.053
TPX	0.059	0.050	0.072	0.067	0.028	0.053	0.049	0.064
IBX	0.054	0.044	0.065	0.060	0.028	0.057	0.052	0.064
SRX	0.056	0.051	0.073	0.102	0.024	0.060	0.056	0.048

- d. Determining the Matrix of Positive Ideal Solution (A+) and Negative Ideal Solution (A-).

**Table 10.** Distance between the positive and negative ideal solutions.

	C1	C2	C3	C4	C5	C6	C7	C8
A+	0.054	0.055	0.065	0.060	0.024	0.053	0.049	0.041
A-	0.059	0.044	0.078	0.102	0.029	0.064	0.056	0.064

The positive ideal solution (A+) and the negative ideal solution (A-) can be determined based on the normalized weight rating. The positive ideal solution (A+) can be calculated as follows. This step is done by finding the smallest and

largest values of each matrix column in Table 10.

- e. Calculating the Distance of Positive Ideal Solution (D+) and Negative Ideal Solution (D-).

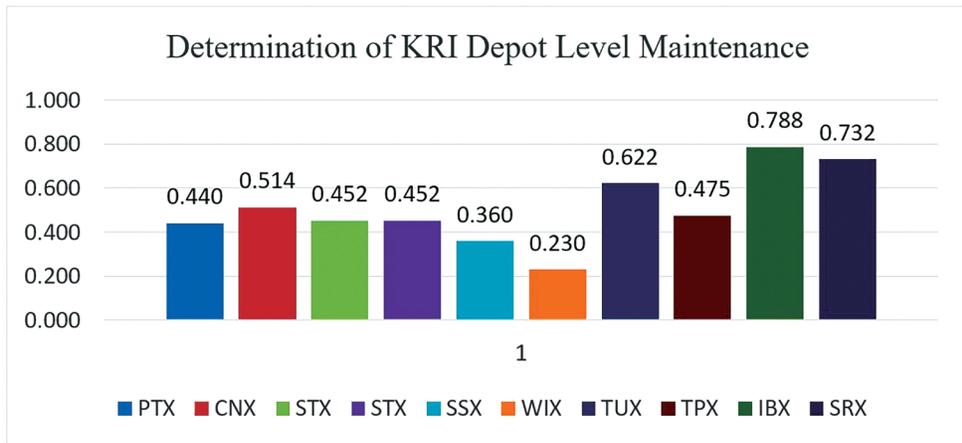
**Table 11.** The preference weight of each alternative.

NO	D+	D-
1	0.027	0.026
2	0.032	0.023
3	0.012	0.042
4	0.024	0.035
5	0.023	0.032
6	0.043	0.016
7	0.032	0.023
8	0.026	0.038
9	0.026	0.044
10	0.044	0.019

f. Weighting and ranking. is to rank the alternatives that have been calculated. As Table 12 below:  
 After getting the results of the relative proximity value, the last step

**Table 12.** Alternate ranking and maintenance strategy determination.

NO	TYPE OF WARSHIP	WEIGHT	RANK	EXPLANATION
1	PTX	0.587	4	
2	CNX	0.580	5	
3	STX	0.495	6	
4	STX	0.418	7	
5	SSX	0.274	10	
6	WIX	0.305	9	
7	TUX	0.772	1	PRIORITY
8	TPX	0.415	8	
9	IBX	0.633	2	PRIORITY
10	SRX	0.600	3	



**Fig. 5.** Histogram Determination of depot level maintenance on KRI.

Based on Table 12 and Figure 5, it can be concluded that the results of calculations using the Technique for Order Performance by Similarity to Ideal Solution (TOPSIS) method can be concluded that the first rank comes from TUX with a weight of 0.772. IBX as the second alternative with a weight of 0.633. SRX as the third alternative with a weight of 0.600. PTX as the fourth alternative with a weight of 0.587. While SSX with a weight of 0.274 as the last alternative because currently (2021) is carrying out maintenance at the depot level.

## 5. DISCUSSIONS

Based on Table 5 and Figure 4, in the process of weighting the criteria from the results of the study, it was found that the weight range of several criteria did not have a wide range. The highest score is the Security Level Criteria (C4) with a weight of 0.31. While the criterion with the lowest weight is the Operational Time Criterion (C5) with a weight of 0.061. This condition indicates that from the eight there is no significant difference. These criteria have their respective effects on determining alternative maintenance strategies for KRI.

Based on Table 12 and Figure 5, it can be concluded that the results of calculations using the Technique for Order Performance by Similarity to Ideal Solution (TOPSIS) method can be concluded that the first rank

comes from TUX so that KRI needs to be maintained at the Depot level. As for the second priority for depot level maintenance, namely IBX.

Compared to determining the maintenance of KRI at the depot level in several previous studies, this study provides several advantages, namely providing the determination of the criteria first and giving weight to the criteria for maintaining depots so that it can be seen which criteria have the highest influence value in determining depot level maintenance. Second, in this study it is provided as objective value as possible in determining alternative KRIs that will carry out depot level maintenance activities through the TOPSIS method by asking questionnaires from several related personnel. Third, this depot level maintenance selection model can be tested on other ships in the amphibious ship unit or in the patrol boat unit with notes on similar ships and re-identified for adjustment of the criteria.

## 6. CONCLUSIONS

Based on the results and discussion in the previous chapter on the analysis of determining the maintenance of the Depot level at KRI using the Analytical Hierarchy Process (AHP) and TOPSIS methods. In the assessment and determination model of the KRI Depot level Maintenance, the first stage is weighting to determine

the value of each criteria. The identification stage of the criteria that will be used to determine the KRI depot level maintenance is the result of an agreement with several experts with an initial proposal from the researcher which obtained 8 (eight) criteria. Based on the results of the study, the Criteria for selecting the Security Level showed that these criteria had the highest weight of 0.181 with a consistency ratio (CR) of 0.093. Then the Criteria for the Use of Technology has a weight of 0.158 as the second criteria. Criteria Cost as the third criteria with a weight of 0.131. While the Operational Time Criteria has a weight of 0.061 as the criteria with the lowest weight.

Decision-making involves certain criteria in determining the maintenance of the KRI Depot level, which is carried out by surveying stakeholders. Based on the results of research using the Technique for Order Performance by Similarity to Ideal Solution (TOPSIS) method, it can be concluded that the first rank comes from TUX with a weight of 0.772. IBX as the second alternative with a weight of 0.633. KRI SRE as the third alternative with a weight of 0.600. PTX as the fourth alternative with a weight of 0.587. While SSX with a weight of 0.274 as the last alternative because currently (2021) is carrying out maintenance at the depot level

## **Future Work**

This study provides several advantages, namely providing the determination of the criteria first and giving weight to the criteria for maintaining depots so that it can be seen which criteria have the highest influence value in determining depot level maintenance. In future research, this model can be used for determining the mid-level maintenance strategy. Second, in this study it is provided as objective value as possible in determining alternative KRIs that will carry out depot level maintenance activities through the TOPSIS method by asking questionnaires from several related personnel. Third, this depot level maintenance selection model can be tested on other ships in the amphibious ship unit or in the patrol boat unit with notes on similar ships and re-identified for adjustment of the criteria.

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# STRATEGIC AUTONOMY IN THE CONTEXT OF MULTILATERALISM

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*The Covid-19 Pandemic has reignited the idea of Strategic Autonomy in the UE. While Brussels has insisted over the last 5 years that Europe should become a major player in defense issues, one has to wonder if the relations with NATO and EU will not change under these circumstances. With the Biden Administration willing to build some bridges with EU it will be interesting to analyze the way the European Union will be able to manage both the development of strategic autonomy while also keeping its multilateral agreements with traditional partners.*

*It is the aim of this paper to analyze the post-pandemic global context into which the UE finds itself and to study the impact that strategic autonomy may have on the member states of the EU, taking into consideration not just defense and security policies, but also economic policies, healthcare issues, the energetic system and the geographical impact that differs for each member state. By doing so we hope to determine what are some way ahead for the EU in its pursue of an increased global player, while becoming a regional leader in the European-Asian and Transatlantic landscape.*

**Key words:** *strategic autonomy, deterrence, security policy, multilateralism, common defense.*

## 1. INTRODUCTION

The concept of strategic autonomy has been developed after France President Macron first spoke of it in 2018. First introduced in 2013, as an idea for the EU to have a bigger role in defense policy, strategic autonomy has become a key principle for the development of the Common Security and Defense Policy at

European level. Furthermore, Strategic Autonomy is now part of the European Union Global Strategy. In this matter Strategic Autonomy will become part of the doctrine to enhance defense capabilities at an EU level.

The results of this doctrine is supposed to materialize into the now broad European Defense

Fund, a common funding policy that would see member states of the EU contribute in order to develop security and defense capabilities that should answer to risk and threats that are particular for the European Continent and neighbor areas. It is the specific desire of the European Commission that the EU develop a Strategic Autonomy and its inception be in the area of defense.

During the Trump administration and the America First policy that the American president enabled the need to further develop strategic autonomy has been considered a priority for European leaders. The fact that the US through NATO has insisted on the need for increased defense expenditures from member states in Europe, that would see up to a 2% of the GDP spent on the military budget didn't help the transatlantic relations between EU and NATO and has determined the European Commission to further look on ways and means to develop its own strategic defense assets. For this reason the EU first developed the Common Security and Defense Policy and by doing so managed to introduce the concept of a Europe that should be strategically independent or at least autonomous in order for the EU to fully shift from a regional power and player to that of a major global player, not just in terms of politics and economy but also in matter of security and defense. Although the concept was original

initiated by France it has been since then expanded at the entire level of the EU.

With the beginning of the Biden Administration a question was addressed on whether strategic autonomy should still be required or whether multilateral relations between the US and the UE would be sufficient in order to let all defense issues and challenges on NATO's defense planning process.

The COVID-19 pandemic that has emerged beginning with 2020 has demonstrated that the need for strategic autonomy expands beyond defense policies. Healthcare issues, energetic and economic challenges, social and political aspects should also generate the need for the EU to develop its own strategic autonomy.

In 2020, the concept of strategic autonomy, become one of the major governing principles in Brussels. UE officials have started to stress more and more often the necessity of introducing strategies and measures in order to stimulate autonomy or even sovereignty at strategic level. The fields on which this can be made, far exceed that of defense and can include all area from digitalization, green energy, and pharmaceuticals and so on.

In the following chapters we are going to analyze the areas where the EU tends to develop this concept and the pros and cons for the direction that the EU has taken into

this strategic concept. The reason for this approach is that the European Union's strategy concerning some of the major challenges observed in the last 5 years have been controversial. Whether or not strategic autonomy is possible, is a good idea, it creates frictions with other states or partnerships is to be debated and discussed.

## **2. STRATEGIC AUTONOMY IN DEFENSE**

Strategic autonomy in the area of security and defense policies has been the major desired concept that the EU considered a key element in its enhanced role as a global power.

One issue of concern is that of the relation between NATO and EU. For over 60 years, defense policies in the European Union have been managed and monitored by NATO.

A shift in paradigm in this area would represent a new starting point for the EU that would find itself in the situation of redefining its role from an economic and political organization to one that would generate capabilities and missions with defense purpose.

In this aspect, it has to be noted that the EU is far from realizing strategic autonomy in defense. With a major member state like Germany underfunding defense, with the UK leaving the EU following the Brexit, and with countries like France, Spain or Italy in a geographical position that would make it difficult for them

to send rapid deployment forces to European borders in the north and east, such a strategic autonomy cannot be achieved. On the other side with strategically placed bases both in Central Europe and in the Eastern Flank, NATO is the only well suited alliance to cope with defense issues on European ground.

Another aspect worth mentioning is that of the energy crisis that has appeared in 2021 at European Level. The increased policies for a green deal and the development of Nord Stream 2 create a series of vulnerabilities for European countries in front of potential Russian actions.

First, having the energy flow controlled by just one source country creates potential uncertainties and makes European countries dependent of one supplier. Monopoly situations like these are problematic for security reasons as a shortage of energy could create massive damage.

Second, experts consider that through the Nord Stream 2, Russia can also place different technologies that can be used for intelligence purpose. Thus an economical factor that is supposed to increased EU's role as a major player will actually affect Europe's so called strategic autonomy in the field of defense.

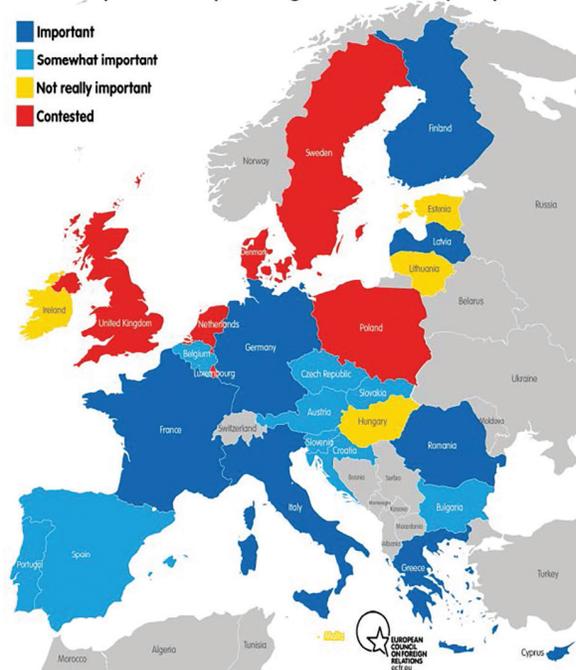
Another key element that needs to be addressed is that of the different status that EU countries have. With a large difference in wages and the possibility of social dumping for states in Central and

Eastern Europe, strategic autonomy should be implemented only if the differences between these states were to be reduced. For European countries that are emerging economies it would otherwise be very difficult to understand the need for a strategic autonomy, while they are left without their classic partnerships, partnerships that has over the last 20 years increased their economic output. In order to fully create a European space that would be willing to understand the need for a unique autonomous body at European level, that could emerge as a global leader, first, all European member states

should find themselves in a situation where the gaps between the West and the East, or the North and the South should at least be decreased.

The reason for which we address this issues is that with different objective for different states, we can see from the specialized literature that depending on what group of countries they are part of, European member states address the topic of strategic autonomy very differently. This example can be seen in Fig 1 that comes from a study on European member states. (Franke, Varma, 2019).

**How important is the goal of European strategic autonomy to your country's foreign and defence policy?**

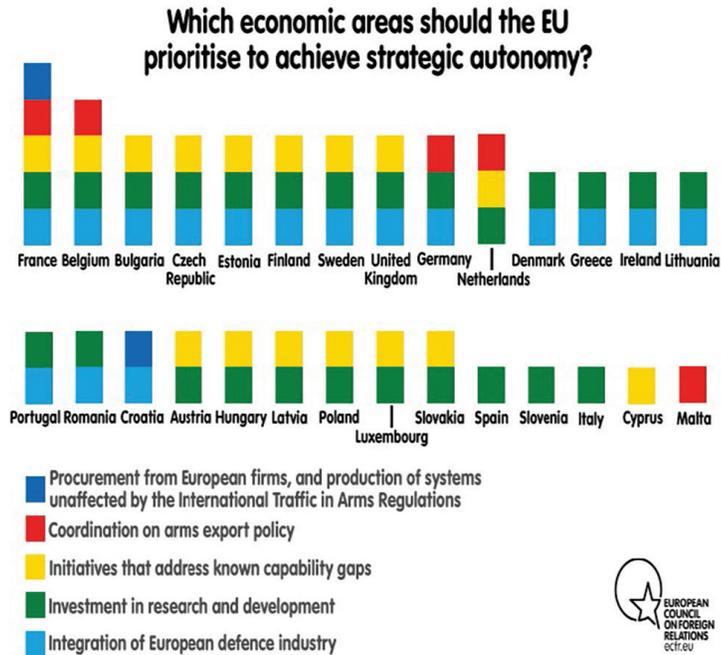


**Fig. 1.** How important is the goal of European strategic autonomy for member states.

The picture above shows that for different groups of countries, the importance of developing a strategic autonomy is more or less important. While for France and Germany it is a relevant factor, we can see that for countries like UK who has left the EU, since the study was conducted or for countries like Poland and Hungary that are part of the Visegrad group, this concept does not matter or even worse is a reason for further fragmentation inside the EU. For many Central European countries it is a somehow but not decisive factor of importance. Having such diverse opinions on this subject for European member states is important because it brings into discussion the risk of further increasing euro-skepticism inside the European Union. This can create even more issues for security and defense objectives, as a fragmented Europe is in the end, the opposite of developing a cohesive structure that can act as a unit at an international level. In simpler words, the desired effects of what strategic autonomy could mean for Europe might just have the opposite outcomes.

Strategic autonomy should be a top priority for all member states if it were to work. The fact that is not means there are reasons for which countries inside the EU react to it differently. This once again shows that there is a lack of unity inside the EU, and that unity should be further developed upon, until such strong concept like strategic autonomy were to be implemented.

The same study (Franke, Varma, 2019) addresses whether the economic side to defense, rather than the tactical one is the reason for developing this concept for some countries. Following the year 2014, when at the NATO Summit of Wales many European countries like Romania, Poland, Lithuania, Estonia, Latvia agreed to increase their budget on defense to 2% of the GDP, experts have considered that countries like France that have an important defense industry would want the EU to develop security and defense policies in order to help integrate their defense industries better. Because of this reason the conclusion from Figure 2 are worth observing and analyzing:



**Fig. 2.** Which economic areas should the EU prioritize to achieve strategic autonomy?

While for most European member states investing in R&D and integrating the European defence industry seems to be the major role that a strategic autonomous concept could bring inside the EU doctrine, for countries like France, Belgium or Germany, coordination in arms export, developing capabilities and especially procuring military equipment from European producers (in the case of France) becomes a major factor, which again shows that are differences in perception between

different groups of countries. The lack of cohesion for EU member states in terms of what autonomy in defense could actually mean will be problematic in the cohesion process that should enable the European Union to have a major role at global level in challenges that are concerned with security and defense.

If the reasons that have been presented so far induce the idea that strategic autonomy has a series of flows for which it might be difficult to implement at European level,

there should be listed a number of advantages that enables EU to make this concept part of its Global Strategy.

In the area of nuclear weapons, such a concept represents the only option for the EU that comprises both nuclear and non-nuclear member states to have a unique voice and a unified role when communicating with other nuclear powers.

Another aspect that needs to be taken into consideration is that of digitalization. Modern and innovative technology is one of the key tools that major powers have in order to progress and develop both their defense structures and their economic assets. Studies show that while EU member states were competing with the US in terms of emerging technologies in the 90's, by 2030, China will be the number one political power in the field of digitalization, bypassing US, while the UE, might fall behind China, US, Russia and potentially other emerging economies as well.

Only by developing strategic autonomy can the EU reduce the gap it has in terms of digitalization compared to other major global players. The effects of lagging behind in this field can be observed both in defense risks and in social and welfare shortfalls as well.

To better understand the importance of digitalization, security threats and overall advantages and disadvantages that the concept of strategic autonomy brings inside the EU, we have chosen to present the effects that the Covid-19 pandemic has had on the previously mentioned issues at hand in the following chapter.

### **3. STRATEGIC AUTONOMY IN THE CONTEXT OF THE COVID-19 PANDEMIC**

The Covid-19 Pandemic has started in the early first trimester of 2020 and has expanded throughout 2021, with visible results in the decrease of the pandemic being observed starting with mid-2021 after vaccination against the virus became available worldwide.

The pandemic allowed the understanding of how two major fields of development for the EU, pharmaceutical and digitalization could be enhanced in crisis situation, that required innovative and fast solution, as the life of EU citizens was at stake. Some states have used their military capabilities including human resource from defense staff (Portugal, Romania) to try and manage the pandemic.

Interconnectivity between countries inside the EU had its share

of shortfalls as the pandemic spread fast inside the European Territory. For this reason, the European Commission understood that the strategic autonomy concept should be expanded from the defense field to that of economy and technology. Under this line of thinking in September 2020, the EU Council created an economic recovery packaged as a major step into achieving the desired strategic autonomy. This was seen as the only possible solution for countries facing economic struggles after dealing with the pandemic. In the same year, the European Union Commission developed an initiative on raw materials, specifically on those critical raw materials that were missing during the pandemic. The initiative was created to assure that EU member states would decrease their dependency on imports for a number of resources that are considered crucial in the area of pharmaceuticals, digitalization and green energy. (Binnendijk et al., 2021)

With a large amount of activities being moved in an online environment (education being such example), the role of digitalization and its enhanced role in all life activities become a new desired outcome for Brussels in terms of strategic autonomy. As such technology is now part of the concept and the digital

world is already considered a field by which the EU can drive its own global standards through regulations. As such, starting with 2020, the EU is doing efforts into obtaining data sovereignty, by developing its own data strategy as part of the European Union Global Strategy. One of the desired outcomes is the creation of a European Cloud, while defense challenges will also be taken care off by means of developing better prevention against cyberattacks.

The Covid-19 Pandemic can therefore be considered a factor that has enhanced the political will inside the EU to further develop and promote strategic autonomy. It is a shared opinion inside the EU that the moment for organization to become a global power is now. With China's increase as a global power, with higher competitiveness between major player in field of economy, technology and defense, EU tries to catch up and the pandemic has shown different directions in which this can happen.

Those who oppose this direction, highlight China's interest in making the EU less dependent on the US, by observing China's open support of the European Union's strategic autonomy development. China hopes to increase its cooperation in trade and economic relationships with the EU, while

isolating the US from transatlantic cooperation. These efforts should be countered, if not in the economic field, at least in those of defense, and guarantees have been presented by Defense Ministers throughout Europe, Germany includes, that the US remains Europe's most important ally, and all actions undertaken by the EU in matters of defense will strengthen the European pillar inside of NATO. (European Student Think Thank, 2021). Furthermore, the Biden administration has attempted to reconcile with the EU, develop security cooperation between the two transatlantic partners, while building a common stance against China. These attempts have somehow been affected by the AUKUS Agreement in which the US has decided to cooperate closely with Australia and UK and by doing so assuring defense equipment trades between the three countries. This has left France out of its current agreements with Australia and therefore tensions between partners increased even more. The recent G20 Summit in Rome has shown that there are ways by which France and USA can work through these tensions.

In a post pandemic world, where resilience is one of the major subject at hand, Europe will search further on to develop its strategic autonomy, now extended on more

field then before the pandemic struck. Following current events, and due to the developed relation with the Biden administration the EU states that is trying to integrate its strategic autonomy with a strong transatlantic cooperation with USA.

The pandemic has shown interesting facts about the EU's dependency on the US, which has decreased over the last decade, but on the other hand, EU has shown an unfortunate enormous dependency on China. Therefore future efforts inside the EU should be developed not necessarily in increasing EU's strategic autonomy towards the US, but towards China as well. Speaking about the multilateral relations the EU has had for several decades with the US and how these relations could evolve in future, the following chapter will address the relationship between EU's strategic Autonomy and The United States of America as well as NATO.

#### **4. STRATEGIC AUTONOMY IN RELATIONS TO THE US**

Ever since the idea of strategic autonomy appeared inside the EU, the question has been how this concept would affect the relationship with the US. In terms of the political context, during the Trump administration, Brussels

has pushed to increase autonomy, because of the America First Policy implemented in the US. (Pike, 2021), While opinions suggested that the multilateral partnership would be once again reignited under the Biden administration, one factor that has increased the desire to increase European strategic autonomy has been the US Afghanistan pullout, where the difference between USA and the EU in terms of capabilities capable of actually pulling out troops and refugees has been visible. EU's intervention capabilities need to be improves and for this reason both France and Germany have decided to initiate the creation a so called initial entry force, that would include up to 5000 troops supporter by aircraft capacity and forces from the navy, especially different types of vessels and ships. Under the doctrine of increased global development expenditures, the creation of such rapid-reaction force would enhance EU's defense capacity and provide the necessary aid for struggling democracies that require assistance, in the vicinity of the European Union. (European Union External Action Service, 2021).

After decades of being a soft power, through the development of strategic autonomy, the EU has managed to become a hard power as

well. The formal intent is to however develop a hard power role as a NATO partner, while also taking a stance as more important and reliable international actor.

When the EU wants a major global role, it does so looking at current global leaders such as USA, Russia and China and the economic relations it can build with three countries. Furthermore the EU needs to analyze the trilateral relations that China Russia and USA develop between themselves, and by doing so understanding its own role in the transatlantic alliance on short, medium and long term. (Howorth, 2018).

One of the major issues where USA and EU contradict is on threat perceptions. While the US has been worried in recent years much more on the Far East, China Sea and Taiwan, for EU, the Eastern Flank and Russia's role in the Baltics, Black Sea and the East of Ukraine remains a major concern. However, if there is a divergence of opinions on these risk, the Middle East remains a converging point for EU-US cooperation.

The recent Afghan withdrawal from US troops has left a gap in the region, one that China and Russia can explore, as the Taliban seem willing to negotiate with both

countries, as well as other neighbors like Turkey and Pakistan. Therefore, it is up to the EU and NATO to once again collaborate as there is a sense of urgency, with potentially millions of refugees and immigrants coming from Afghanistan flooding the borders on Europe’s Eastern Flank. Collaboration between the two institutions is therefore a must, and

the relevancy of the Eastern Flank can be seen better in Figure 3, when we see a very diverging response when European member states answer the question of *whether Europe needs greater solidarity on defense and security by moving towards strategic autonomy?* (Franke, Varma, 2019).

Figure 3 brings in a major observation. For almost all Eastern



**Fig. 3.** How EU countries perceive solidarity on defense bases on strategic autonomy.

Flank countries, as well as for the UK, defense in Europe should not move towards strategic autonomy, as NATO's Article 5 is sufficient. However, we can see that for most western states, such a desire represents a goal. Therefore we see a big gap in perspective between the East and the West of the EU on this matter. Countries being part of the Eastern Flank seem more aware of Russian risks and threats and therefore rely more on NATO, than on potential European Defense Capabilities developed with the Strategic Autonomy concept.

Because of their understanding of risks and threats on the Eastern Flank these countries have organized themselves into The Three Sea Initiative, a flexible and informal platform that groups around 12 member states of the EU, situated between the Adriatic, Baltic and Black Seas (Austria, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia). All of these countries look to further strengthen their collaboration with the US. Another objective is the increased convergence and cohesion between member states of the organization, in parallel with reducing the gap in terms of economic development between different regions within the EU. Just

like with EU's strategic autonomy, the three sea initiative seeks to increase interconnectivity in the region in the areas of energy, transportation and digitalization. The Three Sea initiative has too objective similar to that of EU's strategic autonomy such as promoting economic growth and increasing European cohesion, but also presents a third objective, which is perhaps different, that of consolidating transatlantic networking with the United States of America (#3SeasInitiative, 2019).

The answers from Figure 3 and the creation of Three Sea Initiative should trigger an alarm for the EU leaders in Brussels. The development of Strategic Autonomy based on a Europe independent of the US, can create inside the EU a similar concept, where countries on the Eastern Flank who deal with risk and threats much different than those from Western Europe will react and create even more enhanced connections with the US on their own, while isolating themselves from initiatives that come from Brussels and western member states of the EU.

In order for the strategic autonomy concept to therefore work, the EU should better understand all its member states needs and try to first integrate their goals into the EU Global Strategy, while also reducing the gap

that exists between different groups of states. The mindset of Eastern European Countries demonstrates that a European Union that doesn't collaborate with US is unimaginable for them and pushing for such an agenda could further increase the potential fragmentation of the EU.

## **5. CONCLUSIONS & ACKNOWLEDGMENT**

In trying to draw some conclusion from the previous chapters, it is clear that EU will not take a step back in developing its own defense capabilities. This will be the road for the future for the EU, a road that started in 2018, with The Capability Development Plan, a road that has taken further development, following the Covid-19 economic disruption. The Capability Development Plan promotes capability cohesion with NATO and that should remain a goal for the EU, as risks and threats coming from China, Russia and the Middle East make it as viable as ever for the two organizations to work together.

While the EU is right in trying to become a major role player at global level, the path to assure this draws some questions. Strategic Autonomy for the EU has started in the field of defense, a field where the EU is less than prepared to manage

on itself. This perception is visible inside Europe, where countries on the Eastern Flank are willing to only rely on NATO for military support and the development of defense capabilities. In the area of energy power, the EU has put itself in a position where it cannot obtain strategic autonomy, because on the one hand Germany and many other member states have based their reliance on one major supplier, which is the Russian Federation. On the other hand, France continues to invest in its nuclear energy sector, while countries from the East like Poland and Romania are forced to give up their coal industry. These actions create tensions inside the EU, and increases the risk of Euroscepticism and further fragmentation of the European Union.

Strategic autonomy can still be obtained and the Covid-19 Pandemic has been an example of good collaboration of EU's institutions with member states, vaccines being available in high amounts for all countries inside the European Union. The economic aid that the EU has given for member states following the pandemic is also an example on how autonomy in this field should work. Digitalization and the development of innovative technology is another field where enhanced strategic autonomy could produce the desired effects.

One must consider however, that this autonomy should not be obtained against the US, but rather focus more on China and its policy of take and replicate technology that is produced by foreign investors including those from Europe on its territory.

Taking all of these variables into the equation, the role of a global power for the EU is to be taken. While still in a initial phase, the concept of strategic autonomy remains one of the European's Union desired long term goals.

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# MILITARY-GROWTH CORRELATION: NEW EVIDENCE FROM DEVELOPING COUNTRIES

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*It is generally believed that high levels of military expenditures hamper economic growth because it crowds out investment. In this study, we investigate how defense spending affects economic growth in the 50 developing countries over the period 2010 to 2016. The results reveal that there is a positive and significant relationship between defense spending and economic growth in the developing countries. It means that, when economic growth, it encourages military sector to spend more, and also population is directly related to economic growth, meaning that when population increase, it rises military expenditure in the developing countries.*

**Key words:** Military expenditure; Economic growth; Developing countries; and Pooled Regression Model.

## 1. INTRODUCTION

Since Benoit's (1973) seminal work, in developing countries, the economic effect of defense spending has been the subject of comprehensive empirical analysis. Theoretically, however, there is no straightforward predictor of the direction of causation between defense spending and economic growth. On the one hand, defense spending may retard growth through what is popularly referred to as a "crowding-out" impact on investment or a displacement of the same amount of civilian resource use. Additionally, defense spending can

also boost growth through aggregate demand effects of Keynesian form. An increase in demand generated by higher defense spending causes increased utilization of capital stock, increased employment and profits, and, therefore, higher investment, that further creates short-run multiplier effects. Moreover, growth can also trigger spin-off effects, such as building socioeconomic structures conducive to growth (Deger, 1986) though military spending can have an effect on growth through these mechanisms, Joerding (1986) contends that economic growth

can be causal before spending on defense. For example, a country with high growth rates might want to reinforce itself against foreign or domestic threats through increased spending on defense. In contrast, it is equally plausible that high-growth countries could divert funds from defense into other productive purposes (Kollias, 1997 and Khalid, M. A., et al. (2015)). It is also possible that defense spending can rise less than proportionally at low GDP rates, then higher than economic growth at moderate per capita income levels and, ultimately, less than proportionally again at very higher growth levels. This would produce a nonlinear response to economic growth and even the existence of a negative relationship over different periods of time between the two variables for certain countries. The above review gives rise to four possible results in relation to the statistical correlation between economic growth and defense spending: Unidirectional causality from defense spending to economic growth or vice versa; two-way causality between the two variables; and, lastly, a lack of any causal relationship. In addition, there are both negative and positive net effects, so that unidirectional causality may emerge from military spending to economic growth, which is either positive or negative. Various policy consequences can be extracted from

an understanding of the direction and degree of causality between military spending and economic growth. The easiest inferences are made when defense expenditures precede growth in the economy. A positive causal relationship implies that the aggregate effects on demand are dominant, while crowding out is the main effect when negative causality occurs. If the direction goes from economic growth in military spending and is positive, countries try to protect growth or are at a stage of development where defense spending is seen as a positive social gain. If this is negative, some economies of scale can exceed. A review of the wide range of empirical evidence indicates little agreement about the existence of a relationship between defense spending and economic growth, or the extent and direction of such a relationship when it occurs. Studies such as Chowdhury, 1991 and Mohammed, N. A. (1993) are examples. Such analyzes, however, ignored the question of spurious regression in the presence of non-stationary variables and the additional insights that come from analyzing the role of co-integration in causality analyses. This paper therefore expands this literature by deliberately taking these problems into account when conducting causality analyses.

Researchers have been working for developed, emerging

and developing countries to explain the contribution of military spending. These studies are more accurate from the start for countries that have gained their autonomy from neighboring countries and countries that have mutual cooperation with other countries (Farzanegan 2014 and Khalid, M. A et al. (2014).). So the aim of this study is to justify the relationship between military expenditure and economic growth for 50 developing countries.

## **2. LITERATURE REVIEW**

Because military spending is an important part of government spending researchers around the world were keen to examine the role of military spending in the economy and this interest will continue. From the beginning to the present time, many researchers have carried out their research and obtained some valuable findings which ultimately enriched the field of the peace economy.

A number of researchers have had a positive correlation between military spending and economic growth. Researcher Asseery (1996) found that Iraq has robust evidence of long-term causality between defense spending and economic growth, and that economic growth is highly dependent on defense spending, he obtained empirical evidence using Cointegration analysis and granger causality testing. In 1973 and 1978

(Benoit 1973, 1978) proved that Defense spending improves literacy, medical facilities and incentives for education, scientific and technological advancement. Atesoglu (2002) also applied a Cointegration analysis for United States and gained quantitative and positive effect on economic growth from defense spending. Following that, (Kollias et al. 2004b) investigated the correlation between military spending and economic growth, using a causality approach and a bi-directional causality between military expenditure and growth from 1964 to 1999. In 2004 (Kollias et al. 2004a) observed the relationship between EU 15 countries' military expenditure and economic growth using the Cointegration model and Causality test for the period of 1961–2000, almost all cases they got positive causality from economic growth to defense spending and not vice-versa. They also concluded that EU countries decide on defense spending in view of their economic status. To justify the relationship of military expenditure and economic growth for 65 countries from 1975 to 2004 (Dicle and Dicle 2010) run the causality approach and finally they got bidirectional positive causality between the variables in 54 of the 65 countries. In 2001 (Dakurah et al. 2001) proved that in 23 countries there is a unidirectional causality from defense expenditure to economic growth or vice versa and bidirectional causality in 7 countries.

Abu-qarn (2010) in 2010 studied the Arab-Israel conflict but he did not find any persistent adverse impact of defense spending on economic growth. Feridun et al. (2011) examined the relationship of the defense spending-growth for the case of North Cyprus from 1977 to 2007. Their analysis obtained a strong positive unidirectional causality that ranged from military spending to economic growth. Yildirim et al. (2005) investigated the impact of military expenditure on economic growth in the Near East and Turkey panel. Their study employed a dynamic panel data (1989–1999) estimation method and found positive growth effects of military spending.

The other research group has found a negative growth impact of military spending across various aspects such as higher budget deficits, higher public debt, higher tax rates, lower private sector capital formation, investment and efficiency, lower savings rate, lower education, health, research and development expenditure. (Ball 1983; Deger 1986; Khalid, M. A et al. (2015)., Faini et al. 1984; Lim 1983; Ram 1995; Dunne and Vougas 1999; Gupta et al. 2001; and Dunne et al. 2002, Khalid, M. A., et al. (2014).) all of the studies obtained the negative growth effect of military expenditure the negative growth impact of military expenditure was observed in all tests.

Moreover, some other research also concluded that there is insufficient correlation between military spending and economic growth; some of them are (Adams et al. 1991; Alexander 1990; Ram 1995; Park 1993 and Khalid, M. A., et al. (2015).). According to them, defense spending has no significant impact on economic growth as the spillover effect underlined by the defense spending advocates is indistinct. In fact, the concern that it would destroy private investment is not evident.

There have been some recent studies in South Asia that have had a positive growth impact. In 2013 (Shahbaz et al. 2013) got unidirectional causality from defense spending to economic growth for Pakistan using the ARDL bounds testing approach to Co-integration. The authors (Khalid and Mustapha 2014) found and obtained a positive relationship for India using ARDL model and ganger causality test, they found that 1% increase in military expenditure increases real GDP by 0.04% in short run but in long run the correlations are inconclusive. Chen (1993) conducted an empirical econometric analysis based on a Barro-style growth model for China; His results underpin the presence of a single long-term balance relationship between variables.

### 3. DATA AND METHODOLOGY

#### 3.1. The Data

In order to examine the military-growth relationship in the 50 developing countries over the period 2010-2016 and a balanced panel of cross section data was constructed. The data set is balanced

and the same time periods are available for all cross section units. The data are taken from the SIPRI Yearbooks for military expenditure (Stockholm International Peace Research Institute, various years) and the data on GDP and population are drawn from the World Development Indicator (WDI).

**Table 1.** Variables descriptions: Annual data: (2010-2016; N=50)

Variable	Description	Source
ME	Military expenditure	SIPRI (2021)
RGDPC	Real Gross domestic product per Capita	WDI (2021)
POP	Population	WDI (2021)

Albania, Algeria, Argentina, Benin, Bolivia, Botswana, Burkina Faso, Cambodia, Cameroon, Central African, Chad, Chile, China, Colombia, Congo, Cuba, Dominican, Ecuador, El Salvador, Guinea, Ethiopia, Fiji, Gabon, Gambia, Guatemala, Haiti, India, Indonesia, Iran, Iraq, Jordan, Kenya, Laos, Lebanon, Madagascar, Malawi, Malaysia, Morocco, Mozambique, Nigeria, Pakistan, Panama, Papua Guinea, Paraguay, Peru, Saudi Arabia, South Africa, Thailand, Tunisia, Viet Nam.

#### 3.2. Econometric methodology

The empirical specification of this study is aimed at explaining the military- growth correlation in

the developing nations. Thus, the empirical model employed in the analysis is as follows:

$$ME_{it} = \alpha_1 + \alpha_2 ME_{it-1} + \alpha_3 RGDPC_{it-1} + \alpha_4 POP_{it-1} + \lambda_i + \varepsilon_{it}, \quad i =$$

Equivalently, Eq. (1) may be written as follows:

$$ME_{it-1} = \alpha_1 + \alpha_2 ME_{it-2} + \alpha_3 RGDPC_{it-1} + \alpha_4 POP_{it-1} + \lambda_i + \varepsilon_{it-1}, \quad i = 1, \dots, N; t = 1, \dots, T \tag{2}$$

Where *ME* is military expenditure, *RGDPC* is real gross domestic product (GDP) per capita, *POP* is population, and the subscripts *i* and *t* index countries and time, respectively. In addition, the specification also contains an

unobservable country-specific effect  $\mu$  and error-term  $\varepsilon$ .

Moreover, in this paper we employ Generalized Method of Moments (GMM) which is a semi-parametrically efficient estimation

model and since Hansen (1982) has established its large sample properties, GMM has gained abundant deal of attention in the field of economics. The GMM methodology begins from a set of over-identified population of moment conditions and seeks to find an estimator that minimizes a quadratic norm of the sample moment vector.

The resulting estimation has been shown to be consistent and asymptotically normal under many circumstances. However, the GMM first difference estimator suffers from a significant weakness. Blundell and Bond (1998) found that when the independent variable is persistent over time, lagged levels of these variables are weak instruments for the regression equation expressed in first differences. Blundell and Bond (1998) also found that the instrument variable used with the first-difference GMM method (i.e. the endogenous variables lagged two or more periods) become less informative in models where the variance of the fixed effects is mainly relative to the variance of the transitory shocks. This is likely to lead to biased coefficients, and the issue is generally intensified in small samples size. To avoid this bias, Blundell and Bond (1998) suggested a system GMM (SGMM) estimator.

This method essentially combines in a system the first-

differenced with the same equation expressed in levels. The instruments for the regression in differences are the same as those labeled above, while the instruments for the equation in levels are lagged differences of the corresponding variables. The main advantage of the SGMM method comprises in the fact that unlike (between or within - first differences) approaches, it does use the estimation in levels for estimation and this exploits not only the variation in data but also between the countries as well. It therefore allows preserving more information to identify the parameters of interest. Arellano and Bond (1991) display on the basis of Monte-Carlo simulation that this additional information results in a considerable gain in the precision of the estimates.

#### 4. THE EMPIRICAL RESULT

Our sample countries include 50 developing nations for which data are available for over period 2010–2016. We report first estimates of Eq. (2) for the whole sample period with the standard panel data estimates, cross section estimates, random effects models REM, between and within the fixed effects models. Moreover, we shall use the systems GMM approach (SGMM) of Blundell and Bond (1998) in

which the specifications in the first-step GMM, second-step GMM with robust SE of the variables are estimated simultaneously. Estimates with these alternative methods are illustrated in Table 2. Two sets of subsample estimates with REM and SGMM are reported in Table 3, Table 4 and Table 5.

In order to specify whether a fixed and random effects model are appropriate for our study we performed the Hausman test which is distributed as  $\chi^2$ , where the degrees of freedom are equal to the number of regressors. The results illustrate that the fixed effects model is rejected, and this finding is consistent with Murdoch et al. (1997) since random effect models are considered more appropriate than fixed effect models. Thus, the fixed effects model is not necessary in our case. Parameter estimates from the random effect and fixed effect are presented in Table II and Table III for the 50 developing countries. The results obtained, similar to Smith and Dunne (2001); who found a positive and significant correlation between economic growth and military spending.

Furthermore, we have employed System GMM analysis based on balanced data-set, to examine the military-growth relationship in the context of different political and welfare developing nations. We have

used an AR (1) and an AR (2) model to capture the persistence in our sample data. Moreover, AR (1) and AR (2) models are desirable based on the Arellano and Bond (1991) test for AR (2).

The system GMM estimation results of this study, presented in Table IV, and it indicates that there is a positive relationship between military expenditure, economic growth and population for the rest of the sample countries, and it's statistically significant, it means that, when economic growth exist, it encourages military sector to spend more on it, and also population is directly related to economic growth, meaning that when population increase, it rises military expenditure in the developing countries. All diagnostics for the models in each table is satisfactory. Generally, GDP and population are positively related with military spending in this study, and all variables are statistically significant at different level such as the 1%, 5% and 10% level. The results illustrate that as economic growth (GDP) and population are increase military expenditures as a percentage of government expenditures are increased as well. Furthermore, this finding suggests that military spending plays a significant role in the developing nations despite of many problems such as civil war,

conflicts and border tensions, and this result supported by earlier works done by Benoit (1973&1978) for 44 developing nations. Moreover, our findings are also confirmed and supported by Ali's (2007) findings in the developing countries. Moreover, these net positive relationships support the belief that military spending and economic growth are related through an expansion of aggregate demand in less developed countries. Moreover, investment in infrastructure and human capital development in LDC economies operating below full employment thus, it has positive Benoit-type

spillover impacts from military expenditures. There is less evidence to suggest that military spending in developing nations negatively related to economic growth. The positive impacts that arise when relationship runs from economic growth to military spending imply that many LDCs are still at a stage where military expenditures are constrained by low income and will grow along with the economy. They are not yet in a position to have defense expenditures grow less than proportionally with economic growth.

**Table 2.** Random Effects Results: Dependent variable is ME.

Variable	Coefficient	T ratio
Constant	-35.2685	0.000*
Ln RGDP	.6600842	0.000*
Ln POP	2.200533	0.000*
Hausman test	0.1139	-
N	450	
Countries	50	
Min obs	7	
Max obs	7	
Av obs	7.0	
Rsquared within	0.6947	
Rsquared between	0.8126	
Rsquared overall	0.6587	

\*, \*\*, \*\*\* denote significance at 10%, 5% and 1%, respectively. Values in parentheses are heteroscedasticity consistent *t*-statistics and values in brackets are *p*-values.

**Table 3.** Fixed Effects Results Dependent variable is ME.

Variable	Coefficient	T ratio
Constant	-35.2685	0.000*
Ln RGDP	.6600842	0.000*
Ln POP	2.200533	0.000*
Hausman test	0.1139	
N	450	-
Countries	50	-
Min obs	7	
Max obs	7	
Av obs	7.0	
Rsquared within	0.6947	
Rsquared between	0.6587	
Rsquared overall	0.6543	

\*denote significance at 1%, level. Values in parentheses are heteroscedasticity consistent *t*-statistics and values in brackets are *p*-values.

**Table 4.** Results of Two Step system GMM estimations

Variable	One-Step System GMM	Two-Step System GMM	Two-Step System GMM with Robust SE
CONSTANT	.6478708* (0.000)	-1.480849 (0.401)	-1.480849 (0.736)
LnMIXit-1	.783148** (0.04)	.6413527* (0.000)	.6413527* (0.002)
Ln	.1112433***	.2016423*	.2016423
RGDPCit-1	(0.070)	(0.000)	(0.326)
Ln POP1t	.3607867* (0.005)	.2861577** (0.021)	.2861577 (0.373)
Sargant Test	84.66462 (0.0000)	22.37417 (0.0498)	-
AR(1)	-	-1.8481 (0.0646)	-1.5967 (0.1103)
AR(2)	-	.56618 (0.5713)	.56044 (0.5752)
N	50		
T	7		

Notes: All models are estimated using the Arellano and Bond dynamic panel GMM estimations (Stata xtabond command). The variables are defined as follows: ME

= Military expenditure; RGDP per capita (in US dollars); POP = Population. Figures in the parentheses are t-statistics. (\*), (\*\*), (\*\*\*) indicate significance at 1%, 5%, 10% respectively. Time dummies were jointly significant and are not reported here to save space.

## 5. CONCLUSIONS

The military-growth nexus was a matter of great concern in the defense economy and a large amount of literature explores the development impact of military spending in developing countries. The current literature does not, however, conclude that the impact of military spending on economic growth is due to the application of different theoretical models, different methodological techniques and different samples. After reviewing some literature on defense growth that incorporates defense variables into the augmented Solow growth model, this paper examines the impact of defense on economic growth in 50 developing countries.

Our panel regressions present reasonable and positive results by applying more recent econometric techniques such as the dynamic panel System GMM estimators. The empirical panel results indicate that defense expenditure has a significant and positive effect on economic growth in 50 developing countries.

The empirical results thus support the positive impact of military spending on economic growth. Moreover, Deger, S., & Smith, R. (1983) found that the single and most important barrier to growth is spending on national defense programs worldwide. However,

the proper regression model and more sophisticated econometric methodologies in this article strengthen the empirical findings that could add to the literature on defense economics correlation.

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# AN ALIEN IN A STRATEGIC THINKING WORLD

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*Strategic thinking unleashes the power of leaders on all levels to reach goals, overcome challenges and creatively change the situation from where it is to the desired end-state. All leaders have resources (time, talent and capital) to varying degrees within their organizations. So, technically, all leaders are strategists. The reality, however, is that not all leaders are good strategists. A good leader can evolve in a good strategist by learning how to develop a strategic thinking mindset. Hence, the focus of the current article is on the main ingredients that contribute to the development of strategic thinking.*

**Key words:** *strategic thinking, effectiveness, efficiency, strategy challenges.*

## 1. INTRODUCTION

*„Strategy without tactics is the slowest route to victory. Tactics without strategy is the noise before defeat.”*  
- Sun Tzu

The term strategy comes from the Greek word *strategos* (meaning military general) – so it was strongly related to the armed domain from the very beginning.

Strategy, in that sense, has an obvious military character. However, since the Second World War civil institutions businesses, corporations, non-military government departments, even universities – have started to develop strategies,

by which they usually mean policy planning of any kind. Thus, the term strategy is no longer the exclusive field of the military. As war and society have become more complicated, its definition has been broadened to include consideration of non-military factors – economic, political, psychological, moral, legal and technological. In its fuller meaning, strategy is the art of mobilizing and directing the total resources of a nation or community of nations, including the armed forces, to safeguard and promote its interests against its enemies, actual or potential.

In this broader sense, strategy is also called „grand strategy”. In the

military context, „strategy” means policy or planning that involves the actual use or the threat of use of force; the application of force as an instrument of national policy. In other words, strategy includes the development, intellectual mastery and utilization of all of the state’s resources for the purpose of implementing its policy in war. „In recent times a more useful distinction has been made between the strategic, operational and tactical levels of warfare. The strategic level is concerned with the employment of a nation’s entire armed forces in the larger totality of the nation’s security; the operational with the employment of forces in a military campaign or operation; and the tactical with forces actually in contact with the opponent” [1].

Strategic thinking unleashes the power of leaders on all levels to reach goals, overcome challenges and creatively change the situation from where it is to the desired end-state. All leaders have resources (time, talent and capital) to varying degrees within their organizations. So, technically, all leaders are strategists. The reality, however, is that not all leaders are good strategists. A good leader can evolve in a good strategist by learning how to develop a strategic thinking mindset.

And not only the leaders should benefit from that kind of education. One of the concepts developed in the modern warfare is „Mission Command” – meaning essentially that all levels of military management are encouraged to shape its strategic direction. In other words, a military force „equipped” with strategic thinking will always be superior.

Strategic thinking requires agility and decisiveness in choosing a plan and sticking with it. However, you have to be always aware of new, more promising opportunities. It is a balancing act between consistency and flexibility.

## 2. STRATEGIC-FOCUSED CULTURE

*Planning is expensive, but not planning is far more expensive.*

I allow myself to make the above statement considering the experience earned at IDMC (International Defense Management Course) which I had the occasion to graduate in a prestigious US institution. Therefore, I proceeded to „The New World” armed with the aspiration to comprehend what tells apart the US citizens from us, excepting the obvious financial potency. I tried to grasp – in what they say and in what they don’t say – the essence of what they have and we

do not have, in the military, but also in the other domains.

The organizing institution, DRMI (Defense Resources Management Institute) is directly subordinated to the United States Secretary of Defense and located in the city of Monterey, California. IDMC was designed for US partner nation military officers, rank O-3 through O-6 and equivalent civilian officials (my colleagues were 36 students from 22 different countries). The Course structure included modules of Defense Resources Management, Information Resources Management, Decision Making Theory, Design Theory, Human Resources Management, Logistics Management and other lectures from renowned experts. The cornerstone which provided the coherence to the overall study resources was the logical structure of the curriculum, each component being perfectly integrated to the Course's main architecture. All the lectures started by explaining the connections with what was previously taught and finished with a short introduction in the next topic. The main teaching method was the collaborative discussion. Consequently, thanks to the flexible program, many of the theoretic lectures were accelerated, in order to gain time for the debating sessions, with all the students together

or in small groups – very interesting occasions of understanding the problem-solving approaches in different countries.

Although it was not stated neither in the description of IDMC, nor on the website of the institution, I appreciate that all the pedagogical approaches from the Course converged towards founding, developing and consolidating the strategic level thinking. The target was for all the participants to be able to build a strategic model, constantly following the relationship and the correct sequence of steps in any endeavor: identifying the threat/ the purpose generating any kind of project → formulating the strategy/ objectives necessary in order to fulfill the purpose → defining the forces/ capabilities able to apply the strategy → using the existing resources to generate those forces/ capabilities. Even if the aforementioned model was studied in order to be applied at national defense, the connection with the concept of strategic thinking is obvious, making it relevant at every institutional level and on every kind of project, be it related to a profession or personal life.

TARGET → OBJECTIVES/  
STRATEGY → FORCES →  
BUDGET

I confess that I was shocked upon grasping the meaning of this

lesson, understanding how often I had to suffer in my country due to poor planning, where the main mistake is to think in the opposite direction of the described process. How many times have you heard of „strategies” that place the cart before the oxen, starting the process with what should be the last question: how much money/ people do we have? We must always start with – and never lose sight of – what we want to achieve, which is the final goal. Eventually, if the budget is insufficient, we can rethink the strategy by redistributing resources over a longer period or by setting intermediate goals that will gradually lead us to the desired end-state.

The other struggle that led me to strategic thinking concept, was to figure out the difference between two terms used frequently during the IDMC: effectiveness and efficiency. In terms of understanding and even putting into practice the idea of efficiency, we Romanians are doing well. Our education and our mindset before 1989 heavily relied on ideas such as: maximizing productivity or increasing work efficiency. There is a legendary example of the nail factory, which was given the task by the Communist Party to double its annual production and resorted to a creative solution: taking advantage of the fact that production was reported

in kilograms, the factory doubled the size of every nail. The final products, of course, proved to be almost useless. After 1989, efficiency really became one of our national values, the Romanian is proud to be able to manage any situation, anywhere and anytime, with what he has at hand. We got to the point where the expression „to make a whip from a certain resource” also entered folklore.

The problems arose, for some students (especially from Eastern-Europe and from Latin countries), in understanding the second term. After I began to understand the notion, for a long time I was convinced that in the Romanian language there is no word that would fully capture its meaning. As you know, in the Inuit language (the language spoken by the Eskimo people) there are about 50 words for snow and not even one for war, or so it was before the Eskimos were „civilized”. From here we can draw some conclusions about the way of the Eskimos relate to conflicts and similarly about the strategic thinking of Romanians. However, after searching the dictionary, I found the term „eficacitate”. Although the term exists, imported in Romanian from French, the explanation in DEX is „the quality to produce the (positive) expected effect; efficiency”. As you can see, our definition also includes

the concept of efficiency, partially overlapping the two notions.

I will try a schematic explanation of the two notions, highlighting the fundamental difference between them:

efficiency = outputs / resources;

effectiveness = outcomes / outputs.

Thus, we define efficiency by measuring the outputs of an action or a project, considering the amount of resources used. Similarly, effectiveness is expressed by the proportion that the expected, desired results represent from the total outputs.

One example would be the decision we all make every year, where to spend New Year's Eve. Judged strictly in terms of efficiency, the decision to attend a party organized at a cheap restaurant seems very good: with few financial resources we provide food, music and party. But if the expected results – in this case our preferences – do not include beans and sausages, dubious wine, manes and questionable entourage, the lack of effectiveness will lead us to a different decision.

Another example: in communication, efficiency means investing resources in learning new languages and developing interpersonal skills to get along better with strangers. But effectiveness – and that is the US people way of

thinking – means investing most of your resources to be among the people you have something in common with, whom you want to communicate with, and only then focus on how you get along with them.

English allows the understanding and remembering of the concepts through an ingenious wordplay:

efficiency = doing the things right;

effectiveness = doing the right things.

From here we can conclude the risks related to the lack of one of the two qualities in decision-making. If a decreased efficiency will lead to the risk of give an incorrect or incomplete solution to a problem, then the lack of effectiveness will induce a very good solution but to a different problem. Ultimately, inefficient means reaching the target, but through many detours, while ineffective means partially or even completely failing to achieve it.

Examples of inefficiency are abundant in Romania: from the trivial daily shopping session – in which too few of us use to seriously plan in advance what we will buy, and even fewer are respecting the initial poor planning – to public investments that bring us roads with monthly changed curbs stones, but with potholes in the roadway. Let me give one more example of

strategic thinking, perhaps the most important. We all know that the basic purpose of democratic elections is to invest the most capable of us with the power to make decisions on our behalf, so they will provide efficient leadership. But is of the utmost importance not to stop here with the intellectual approach, forgetting what is much more important: striving to be effectively led, meaning in the desired direction.

Read the next wonderful piece of strategic advice: „Strategic thinking is all about thinking ahead, anticipating what your competition is going to do, and then taking risks in order to succeed. You’re thinking big, you’re thinking deep, and you’re thinking across time. You want to envision all of the possible problems, solutions and outcomes to a given problem, challenge or opportunity.”[2] Any military organization may learn from this quote. You will never guess where I have found it. On the „Wisconsin State Farmer” website. In US, strategic thinking is used even in running a farm! And many others don’t use this essential tool for get on tracks our lives, our businesses, our career or – let’s think of a useful example - our country!

### 3. STRATEGIC THINKING IN EDUCATION

On a personal, individual level, the increase of EFFICIENCY has a

great importance at the beginning of life, when we have to walk, to talk, to learn better and better. The focus is on HOW we do things. And EFFICIENCY is the measure of this HOW. Later, as the challenges in our lives become more complex, EFFECTIVENESS increases in importance (which high school/college should I attend? which city/country should I live in? who should I marry? etc.) Therefore, increasing the importance of EFFECTIVENESS in making personal decisions is related to the development process of the individual.

I had the opportunity to test the theory that the average „American” is obese, superficial, arrogant, and uninformed about the geography or history of the world. I appreciate that the template image is correct, but before being the first to throw the stone, we must be very careful if today’s image and especially tomorrow’s image of the typical Romanian does not become dangerously similar. What I did not expect, however, was to see the advanced level of knowledge in two directions. First, almost anyone in the United States can describe their national tax system and know what loans are they able to access, in what types of funds and with what interest rate will invest the money they do have now or will have in

the future. Secondly, and we touch again the issue of strategic thinking, there everyone has a plan. Children and then young people learn from home and from the school/ college/ university to strategically approach any endeavor: to plan, to accomplish complex tasks using intermediate objectives and – the most important – to fulfill every ongoing project.

Similarly, in Israel, almost all children, starting right from pre-school level, are attending shooting lessons (with a bow or a pneumatic

capacity, nor the development of individual or competitive skills. The lesson is much deeper: the future citizen learns that all movements and gestures, all steps performed during a project, must be subordinated to a final purpose. In the end, you have to achieve a goal. Once they have learned this way of thinking, no matter what goals the children will set for themselves later, they will never forget that everything they do on all phases of a project is vital and also, that more than everything, is

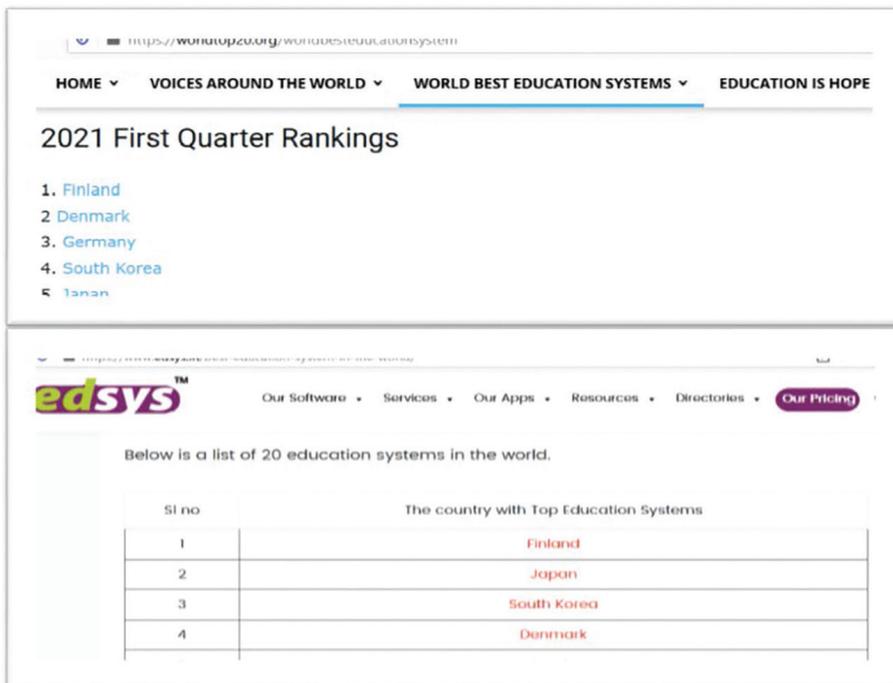


Fig. 1. Education systems

weapon, depending on their age). The main objective of the activity is not the increase of the country’s fighting

paramount not to get their eyes off the target.

I had the pleasure of attending

a meeting, in 2017, at a school in Bucharest, with a Finnish teacher, Krista Lahtien, principal of a school in Turku. Among the suggestions for improving our children's education, both at school and at home, she described succinctly – but proudly – what everybody in Finland knows: „The Government's key project is the complete reform of the school between 2015 and 2019. The aim is simple: to make Finland education system the most competent in the world by 2020". In the above figure, I present excerpts from the first 2 pages delivered by Google when searching for „world top education systems" [3,4].

We understand from these examples that strategic thinking is no longer the exclusive prerogative of military art and does not even have to be necessarily associated with adulthood. It is about learning from the right age how to make a decision and how to carry it out. If this seems something obvious, which does not require theorizing and learning, then ask a sports instructor how complex it is to learn how to perform correctly an elementary task as throwing a punch or even running.

#### 4. STRATEGIC THINKING IN THE MILITARY

Five levels of military strategy have been developed for understanding the aspects of warfare that need to be addressed by a

commander and his forces. The five levels are:

1. Technical: weapon interaction
2. Tactical: forces directly opposed fight one another; nature of terrain is pivotal
3. Operational: struggle of minds; combat encounters
4. Theater: relates military strength to territorial space; the satellite view
5. Grand: confluence of interactions that flow up and down the levels of strategy to determine outcomes.

These five levels give military personnel a common framework of understanding in discussing their goals, objectives, and means of attainment. While it's important to develop plans to be effective at each level, the awareness that successful military strategy depends on the combining of thought and activity at each level is the true key to military victory.

There are very few areas where the use of paradox is as valuable as it is in military strategy. A bad road is good. A rocky shore is a safe place to land. A nighttime attack presents the best opportunity for victory. Paradoxes abound in the realm of military strategy. Very often, the much sought-after element of surprise is shrouded in paradox. A bad road that is difficult to traverse may be the best choice because the enemy least

expects an attack from that avenue. A rocky shore is a safe place to land troops because the enemy will have the fewest number of troops available to defend it. A nighttime attack may be the riskiest for the attacker but the cover of darkness allows the enemy to be taken by surprise.

The development of strategy requires the courage to accept uncertainty. As the French have said, strategy is the art of conducting war by means of coup d'oeil (glance or look) from behind a horse's ears, not in an office on a map. Strategists must accept that they will not have all of the information and not see the spectrum of events, yet be committed to creating and implementing the strategy. In business, a lack of data is often the culprit for not developing or committing to a new strategy. Moving forward with determination, or using the „educated guess” method, will not fill the gap left by a lack of data but it's preferred to the remaining option of doing nothing when the enemies are maneuvering.

Many of those who worked in the ROU military near the turn of the millennium probably remember the ironies addressed to the newly graduated officers of the Air and Land Force Academies, whose license degree was in „Organizations Management”. I belong to one of the first batches of „manager officers”,

who obviously could not compensate, in the initial months of career, the lack of experience and unfamiliarity with the specific customs of the units where we were first appointed, by the knowledge learned on the school seats. But were so many moments in my later career when it was painfully clear that for some colleagues would have been extraordinarily valuable, if not a full resources management course, but at least a 3-4 hours long learning segment.

In addition, it would be a great idea for all the military leaders – to have on their offices or in their pockets – a handbook describing the basics of the management. The science of management does not deny the existence of possible innate qualities or skills that favor some people in the act of command. But the advantage of studying the art of leadership is undeniable, at least in order not to repeat the mistakes made by others in hundreds of years of organizations history.

Regarding the military decision-making, we can say that at the tactical and operational levels, efficiency is more important, and at the strategic and policy levels, the approach must be predominantly oriented towards effectiveness. Therefore, we can look at the of duality efficiency - effectiveness and implicitly the predominance of

strategic thinking, depending on the level of structures in the Romanian military, as defined by current legislation: when moving higher from level 1 to level 4 structures, the balance leans towards the second factor, characteristic of strategic thinking. In fact, in the mentioned IDMC course, the expression used in describing a decision or action was always „effective and efficient”, hence placing effectiveness on the first place.

US NDU (National Defense University) mission, as defined in their Strategy for the future (May 2019) [5], is to „educate joint warfighters in critical thinking and the creative application of military power to inform national strategy and globally integrated operations, under the condition of disruptive change, in order to conduct war”. Moreover, one of NDU’s main desired outcomes, is to produce „strategically minded warfighters with strategic thinking skills, emotional intelligence, and excellent communication skills”.

An excellent article about strategic thinking (and the lack of it) in Australian Defence Force [6], dated 2018, states: „Strategy is popular. And for good reason. There is no subject more essential in the preparation of national security professionals and military leaders than the teaching of strategy. Equally, strategic thinking

is often cited as being one of the most important abilities to foster within organisations. It is regarded as one of the core requirements of senior civil service employees and the mastery of strategic thinking is one of the pillars of future competitive advantage. However, despite the touted importance of both strategy and strategic thinking, the majority of CEOs cited the «lack of strategic thinking as the main problem in their organisations». In fact, the UK Chief of Defence Staff, Sir Jock Stirrup, proclaimed that the UK had «lost an institutionalised capacity for, and culture of, strategic thought».

Speaking about the need to learn and apply strategic thinking, the same article cites: „The outcomes of poor strategic thinking capabilities are evident in recent conflicts. As reported by RAND and observed by Maher (2016, pp. 82-3): «Army often learns tactical and operational lessons from the wars it fights, it often struggles to incorporate these wars broader strategic lessons». Several operational reports from the Middle Eastern deployments demonstrated that the Australian Defence Force also lacked strategic thinking. For example, an operational report from 2012 stated that «...the Australian Defence Force (ADF) needs to identify and develop Commanders that think at the strategic (macro) level in order

to design and implement effective campaign plans» – while another in 2011 said «...there is plenty of room to improve education of military planners and...personnel to think in terms of effects». It is likely that this widespread deficiency is a result of a gap in the Joint Professional Military Education (JPME) continuum. That is, militaries rely on the ad hoc identification of good strategic thinkers on an as needs basis rather than deliberately curating the officer corps to ensure there is a ready supply of strategic thinkers.”

I will add that, in ROU, the study of strategic thinking, which provides decision-making support from the platoon level to the pinpointing of MoND major programs, should not be absent from the basics of military education. I believe that it is too late to start forming strategic thinking during the career courses necessary to advance to the ranks of colonel or general, without relying on a steady structure, built from the beginning of the individual’s military career and subsequently based on a solid foundation formed in early school, family and society. Except for a short component entitled „Projects Management”, which I attended during my academical years (in Air Force Academy), I must confess that I did not encounter, in all forms of military education that I graduated

(Military High School, Academy, Basic Course, Advanced Course, Staff Course), any discipline that came near the concept of strategic thinking. Of course, there are the Resources Management Courses in DRESMARA, but too few officers are attending and, more important, those education forms are placed way too late in an officer’s career.

## **5. TOP STRATEGY CHALLENGES IN ROMANIAN MILITARY**

For many managers and leaders, the very word „strategy” conjures up thoughts of endless PowerPoint presentations, binders collecting dust and general confusion. A survey by Roger Martin of the Rotman School of Management found that 67 percent of managers believe their organization is bad at developing strategy. Harvard Business School professor David Collis is even more direct: „It’s a dirty little secret: Most executives cannot articulate the objective, scope and advantage of their business in a simple statement. If they can’t, neither can anyone else.” [7]

What seems to be the cause of this lack of performance when it comes to strategy? I identified the top challenges in improving strategic thinking in ROU military system:

**a. Time**

The most common strategy challenge is time. With more responsibilities and fewer people to handle them, many commanders are overwhelmed with activities. While distributing tasks off a to-do list every day, may grant themselves a sense of accomplishment, the mentioned activity doesn't always equal achievement. If the individual tasks aren't strongly supporting the strategy, then we may fall into the trap of activity for activity's sake. When there are lots of things to do, commanders feel guilty stopping to take time to think strategically about their organization's missions. After all, military personnel evaluation sheets do not include a big box for „Thinks strategically for one hour a day”. When there is a lot to get done, time to think is often the first thing to go.

**b. Organizational inertia**

Numerous studies in the social sciences have shown that people prefer the status quo to change. When leaders change strategy, inevitably they are changing the allocation of resources, using differently the time, people, and budgets. Since strategy involves trade-offs, certain people will be gaining resources and others losing resources. Obviously, those

scheduled to lose resources are going to prefer to keep things unchanged. Another factor in the preference of the status quo is the „if it ain't broke, don't fix it” mentality. For microstructures that have experienced success in the past, the idea of making changes to the strategy is opposite to common sense, so their question is: „Why change what made us successful?”. What they may not realize is that changes in the unit mission may be making the current strategy obsolete.

**c. Lack of alignment**

Getting people on the same page is difficult when it comes to strategy. The challenge lies in the fact that different groups within the military organization have their own goals and strategies. Sometimes they align with others, but often times they don't. When there is misalignment, power struggles erupt and instead of working with one another, leaders from different areas work against each other to ensure their priorities take precedence.

**d. Not understanding what strategy is**

Even at the highest levels of military organizations, confusion abounds as to what exactly is a strategy. Perhaps due to its abstract nature, strategy tends to mean different things to different people. It's often confused with mission, vision,

goals, objectives, and even tactics. Failure to provide commanders with a universal definition of strategy and clear examples to refer to, leaves the term open to interpretation, creating ineffective planning and inefficient communication. Too many organizational leaders say they have a strategy when they do not. A long list of things to do is often mislabeled as strategies or objectives. A helpful tool to improve the understanding of those notions is GOST (Goals, Objective, Strategy, Tactic):

A lack of priorities is a red flag that the difficult work of making trade-offs – choosing some things and not others – was not accomplished in setting the strategy. Good strategy requires trade-offs, which in turn help establish priorities by filtering out or postponing activities that don't contribute to the achievement of goals.

**f. Lack of training/tools for thinking strategically**

Many managers aren't considered strategic simply because

**Table 1. GOST**

Goal	Objective	Strategy	Tactic
What	What	How	How
General	Specific	General	Specific

**e. Lack of priorities**

A great cause of frustration among managers is the overall lack of priorities at the command level. Not everything is equally important. If priorities are not clearly established, then it becomes difficult for people to determine what they should be working on and why. This lack of priorities prevents people from better organizing their work, resulting in the frustration of feeling torn apart between too many initiatives.

they've never been educated on what it means to think and act strategically. The disconnect on proficiency in strategic thinking may occur between any two levels of subordination. The chief perspective and the perspective of his direct subordinate may differ. There simply is no one perfect strategy fit for all situations or that will last for all time. There are multiple ways to complete a mission. That's why building up

strategic thinking capability within any organization is so vital.

### **g. Firefighting**

A firefighting mentality starts from top-down within the organization. If subordinates see their commanders constantly reacting to every issue that comes across their desk, they too will adopt this behavior. Firefighting then becomes embedded in the culture and those that are seen as the most reactive, oddly enough, get the greatest recognition. Managers who thoughtfully consider each issue before responding don't seem to be doing as much as the firefighters, when in reality, they're exponentially more productive. „Let's think about that” is a simple but powerful phrase that can eliminate reactivity inside your microstructure. The next time you receive an e-mail marked urgent or an alarmed phone call, or even someone comes charging into your office with a „burning” problem, reply with „Let's think about that”. Then stop and consider how this helps you achieve your goals and supports your strategic focus. Impose that method to your subordinates, teach it to your colleagues and kindly inform your superiors about it.

### **h. Commitment**

Gaining commitment from subordinates to support and execute the strategy annoys many managers. If the people expected to execute the strategy aren't aware of it, or don't understand it, then commitment level will be low to inexistent. A shocking percent of the military personnel are either unaware of or don't understand their unit's strategies. This percent may be reduced by some leaders, using Mission Command. Another reason for low commitment is that many people don't understand the reasons behind the strategy and how it will help them achieve their goals. If leaders fail to share what are the strategies and why the strategies are in place, and don't translate them to people's respective work, the level of commitment will be minimal. Acting by the rule: „Think one level up, act at your level and control on level down” would substantially improve the commitment level.

How many of these challenges does your team face? More important, what are you doing to overcome them? The inability to effectively navigate strategy challenges can have devastating long-term effects on an organization.

To more effectively develop and execute strategy, it stands to reason that we need to better understand it. In order to better understand it, we need to be skilled at thinking about it. And therefore, strategic thinking is one of the most valued skill in leaders.

## 6. CONCLUSIONS

A perfect illustration of the applied strategic thinking was the response of an American lecturer to my question: „- It seems easy to talk about the judicious management of defense resources when you have a budget of \$640 billion. But what would you do if you had to limit yourself to just 10 billion next year?” (I intentionally failed to specify that the last amount I referred to would be expressed – in the case of the ROU MoND budget – in lei). The speaker’s approach was as follows: „- I can’t say now how I would distribute the 10 billion, but I would definitely start by spending the first billion on a good planning process, so I can be sure that the other 9 really get where they are really needed.”

The only criticize I can formulate to the IDMC was that many lessons were a little bit too much business oriented. Of course,

during peace time, the corporate warfare is the closest possible thing to an actual military conflict, therefore it’s natural that strategic thinking will also develop in that field. Rich Horwath, CEO of Strategic Thinking Institute said that “... when you think about the pace of change in most industries and the increasing level of competition due to digital factors and changing business models, strategic thinking is no longer a nice to have, it’s a must-have” [7]. However, I feel that I would have valued more a stronger military flavor through the IDMC, especially in the applied debates and practical examples.

As a final thought, I cannot stop thinking, as in the classical dilemma with the egg and the chicken: are the US a strategic thinking culture because it is such a rich country, or does it have so many resources because of their strategic oriented mindset?

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# LEADERSHIP CHALLENGES - THE GOOD, THE BAD AND THE HUBRIS

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*In leadership, the practical application of the concepts, principles and best practices is still subject to the particularities of the human nature, with its good and bad sides. The aim of this article is to outline a few of the best (and worst) features a manager/ boss/ supervisor/ commander may exhibit, in the attempt to provide an answer to the difficult question of what means a good leader, by exploring the various facets of the difference between the leader, boss, manager and supervisor and what are some of the negative implications on leadership of personality traits such as ego. The methodology used is based on interviews and a questionnaire applied to officers and civilians working in defense and national security area.*

**Key words:** leadership; pitfalls; leader; boss; manager; effectiveness.

## 1. INTRODUCTION

The subject of leadership is a core topic in human capital management, supported by a significant number of theoretical and empirical studies. At the same time, the practical application of the leadership concepts, principles and best practices is still subject to the particularities of the human nature, with its good and bad sides. The aim of this article is to outline a few of the best (and worst) features a manager/ boss/ supervisor/ commander may exhibit, in the attempt to provide an answer to the difficult question of what means a good leader.

The literature offers many definitions of leadership. The process of leadership involves a specific type of responsibility, geared towards the achievement of particular ends, by using the available resources (human and material) and ensuring a cohesive and coherent organization in the process [1]. Other authors [2] [3] define leadership as a process through which a person influences a group of people to achieve a common goal.

An important issue related to the expression “good leader” derives from the ambiguity and subjectivity of the term “good”. From the point

of view of the team members, a good leader is a leader who is accepted, respected, followed and even loved by his team. From the point of view of the hierarchical superiors, a “good” leader may be the equivalent of an “effective” leader – that is the person that “gets things done”, the one who achieves the short term mission and the objectives, even at great costs in terms of human capital (burn-out, toxic workplace relations, high turnover, low morale). From a systemic point of view, a good leader may be the one focused on the achievement of both short term and long term missions and objectives, ensuring the survival and development of the organization, through a wise and humane use of the organization’s resources, especially of the human capital.

This complexity derives from the complex nature of leadership:

- a process that should be driven by the needs of the organization (the achievement of the organizational goals and objectives, with an effective use of resources);

- at the same time, leadership is an inter-personal process, a relationship between the leader and the members of the team, influenced by the personality traits and of the leader and the team members, the leadership skills of the leader (expressed as behaviors and decisions) and the nature of the activity.

The purpose of this paper is to explore the various facets of what makes a good versus a bad leader, the difference between the leader, boss, manager and supervisor and what are some of the negative implications on leadership of personality traits such as ego.

The methodology used is based on interviews and a questionnaire applied to officers and civilians working in defense and national security area.

## 2. LEADERSHIP CHALLENGES – THE GOOD AND THE BAD

The starting point of leadership derives from the following question: what is the reason, the final objective of the leaders’ actions? The most obvious answer would be that a leader aims to achieve the mission/ the organizational objectives by enabling, encouraging and coordinating his/her team on that path.

The principles of leadership are well known and identified throughout the literature. The ones highlighted below, although by no means exhaustive, present the view of the United States Army [4], which identifies eleven basic principles of leadership:

- A leader should be technically proficient
- Should develop a sense of responsibility in his/her team

- Communication is crucial to ensuring that tasks are understood, supervised, and accomplished.

- Empathy and interest in the people's well being

- Continuous self-improvement

- The importance of seeking responsibility and taking responsibility for own actions.

- Setting the example

The purpose for highlighting just a few of the many leadership principles identified in the literature is to provide a starting point for the main findings of this article, in relation to some of the leadership challenges.

Setting a personal example is a key leadership principle, in both civilian and military organizations. A good leader shares the hardships with his team, regardless of the nature of the hardships. The keyword is "team", as depending on the personality of the leader, sometimes there is the tendency to assume that the leader should have a special status (leaving earlier although the team is required to work long hours, getting special privileges – anything from coffee up to central parking space or special tableware). The main task of an effective leader (that is one that inspires the team to follow him/her to reach the organization objectives) is to function as an enabler of the talents, skills, abilities, knowledge and energy of the team members to be harnessed towards the common goal.

In here lies the crucial difference between leader, manager, supervisor and boss.

A *boss* can be defined as "an individual who is in charge of people inside an organization, exercising control over employees, who gives orders, assigns tasks and duties to them, and is entitled to make decisions on some matters"[5]. The boss is either the owner of company/organization or the person assigned by the major shareholders/top management/command to be the person in charge of the respective organizational component, and he/she may be a commanding officer/NCO, manager, supervisor, director, chief.

The *leader* can be defined as "an individual who possesses the ability to influence and inspire others towards the accomplishment of goals. He/she is someone who holds a dominant position and leads others by example. He/she has a vision, stays committed to their goals and strives continuously towards achieving it. He/she sets an example in such a way that people get motivated and want to follow in his/her footsteps or directions".[6]

A *manager* usually focuses on more significant issues and decisions, related to the purpose, goals, functions and roles of the organization, providing the link between the organization and its external environment (larger

organization, other institutions, stakeholders etc). A *supervisor's* role is more limited to the boundaries of the organization, with the focus of ensuring the implementation of the manager's decisions through the activities of the employees.

In the issue of leadership challenges, especially in the military organizations, understanding these differences becomes crucial for the effective performance of the tasks and missions.

When the commanding officer or NCO is perceived as the "boss", this is a sign of how the team members view their job, the respective commanding officer/NCO and their place in the organization. Even though the military is a strict hierarchical organization, the subordinated personnel should not feel as they work principally for the boss – perceived as the person which pays their salaries and has a discretionary power over their career, revenues and even personal lives. There is a huge difference of perspective between considering the personnel as "employees" (disposable, interchangeable, that have to be controlled and used) compared to "followers" (team members with unique abilities, that have to be inspired, attracted, motivated and whose respect and trust has to be gained by actions and behavior, not through authority and fear).

Promoting an organizational culture in which the personnel feels as they are mere subordinates to a boss can have serious negative impact on the efficiency and effectiveness of the organization. A major issue is that it reduces the vision regarding the goals and objectives to be achieved to "pleasing" the boss or avoiding his/her displeasure. The organizational goals and objectives will take second place and even in the cases where the boss sincerely wishes to achieve the organization's objectives, the employees are likely to lose touch with the "bigger picture".

The distinction between boss and leader is of great importance for the effectiveness of an organization, as the reality shows that "competent leaders make up only a minority of people in positions of authority who can engage and develop followers, build teams, and achieve results that improve organizations, societies, or countries" [7].

The distinction made above between manager and supervisor does not mean they cannot be leaders, regardless of the level of decision and power they are at in the organization. The challenge derives from the fact that being a competent leader is a lot more difficult than being a boss, as it requires more than being assigned to a position and given the formal authority and instruments of power. Being a good leader requires a complex mix of intrinsic qualities,

education, practical experience and a lot of work of improvement and self-discovery. It is easier for those in authority to remain “boss”.

Another challenge for an effective leader is to understand the importance of the organization memory and knowledge, the need to preserve and draw upon it, to make the difference between useful organizational memory and useless “tradition”. The organizational memory is an “explicit, immaterial and persistent representation of knowledge and information within the organization”[8], that provides the framework for “the keeping of reasoning, behaviors and knowledge, even contradictory and in all their diversity” [9]. The organizational memory is comprised of formal documents, regulations, instructions, processes, but also the informal connections with other persons / organizations, the organizational culture, the knowledge about the organizational customs, courtesies, group values, spirit, intent, the past events, the lessons identified and the lessons learned. It can be found in written documents, but also in the memory of the organization’s members. Ignoring the organizational memory leads to the need to rediscover problems and solutions that were already tackled before, the loss of support from internal and external stakeholders. It is like

suffering of amnesia for a person, which has to learn to walk, talk, and write – in a word function, over and over again.

By contrast, the organization’s “tradition” provides little value to the organization, as it does not contribute to the achievement of the purpose. The “tradition” of constantly making belittling comments about women at informal events, of “hazing” the newcomers or at least discriminating them, of having oversized yearly anniversaries of the institution that consume more time and resources than activities directly linked with the organization’s purpose, with the sole purpose of promoting the personality of the boss, are classic examples. But useless or outdated organizational traditions that can negatively impact efficiency derive also from the appearance within the organization of competing informal groups, of avoiding the identification and recording of lessons learned in a written process. Another example of harmful tradition is allowing the concentration of knowledge and information about specific activities only in one person (usually a person that has been with the organization for a long time) and keeping everybody else (especially junior members or newcomers) in the dark, with the consequence that when that person leaves the organization, all that knowledge will be lost.

### 3. LEADERSHIP CHALLENGES – THE HUBRIS

Since leaders are human beings, sometimes the answer to the question in the previous section (what is the reason, final objective of the leaders' actions?) is not as easy and straightforward, as personal considerations (expressed here for the purpose of brevity as hubris) may take precedence over the organizational considerations.

The authority and position of power conferred to a manager/commander, combined with specific personality traits and a lack of organizational checks and balances can provide the breeding ground for a “boss” whose behaviors, actions and decisions will be led mainly by his hubris (extreme or excessive pride or dangerous overconfidence, often in combination with arrogance [10]) and not by fulfilling the organizational missions and goals.

The danger of developing the so called “God syndrome” (the tendency to view oneself as irreplaceable, of always being right, of overstating one's abilities, knowledge and importance in the organization, of being automatically worthy of respect and obedience) is quite high in this circumstances.

One of the pitfalls of letting the hubris lead is related to the tendency of a specific type of “boss” to confuse authority with expertise, in the sense

that “the boss knows best”. Greater executive decision making authority should make the person in charge more receptive to the subject matter expertise, not less. A good leader is realistic enough that he/she cannot possibly know everything, and nor should he/she be the smartest, more knowledgeable or more educated person in the organization. This is why subject matter experts, advisors and personnel with experience in various areas should exist in an organization. The job of an effective leader is to ask for the right information to be provided, to prioritize and create a cohesive whole out of the information, not to provide the information itself. A “boss” who insists on contradicting the experts, disregarding their advice and taking decisions independently is likely to have a negative impact on the functioning of the organization. A good leader starts from identifying what he/she doesn't know, as making decisions without knowledge and information, or even worse, against knowledge, by ignoring evidence, facts, expert advice, lessons learned can become a huge drawback for the organization. The sense of “irreplaceability”, if not held under control by strict organizational checks and balances, can lead to impulsive and harmful decisions, but also to the tendency of treating the organization as a personal turf. When

the boss's positions seems threatened (by decisions from superiors or by external factors outside his/her control) the boss's hubris may lead to an attitude of "after me, the deluge", with behaviors ranging from intentional inaction and lack of or delaying important decisions, up to malevolent actions and sabotage against the organization.

Another reason for avoiding hiring or promoting people that are perceived to be more intelligent, more knowledgeable or more professional than the "boss" is the fear of competition and replacement. The "boss's" hubris does not exclude the subconscious feeling of insecurity and inadequacy, making him/she more prone to surround himself/herself with people perceived to be inferior or weaker, who may have the added "advantage" of stimulating the good self-image of the person in charge through flattery and sycophancy. While this situation may be advantageous for the boss, it is extremely disadvantageous for the organization, as it leads to loss of talent (the professional personnel will have the tendency to leave the organization), but also through the breaching of one of the main principles of effective leadership, the need for mentoring and training a suitable replacement. In this case, the disappearance of the "boss"

(regardless of the cause - promotion, resignation, natural causes) may have serious short term consequences on the organization, which do not end with the appointment of a new person in charge. The latter will face the difficult task of managing/commanding the organization without the support of professional personnel, without the connections built overtime, without relevant information regarding many of the processes in the organization that were strictly controlled by the previous boss.

The aspect of training/mentoring a successor is also closely related to the issue of delegation. Delegation of authority and responsibility can be highly beneficial for the effectiveness of the organization, as leaders are made (identified, educated, trained, exposed to learning situations). At the same time, delegation of authority is beneficial for development of the personnel, as it exposes them to the challenges of leadership gradually, in a controlled environment, allowing them to gain crucial experience and confidence about their abilities, while at the same time relieving the leader of some of the less essential tasks.

An open communication (within the boundaries of the organization's rules about classified information and need to know) is

another hallmark of an effective leader as opposed to a boss, as it impacts not only the present (by allowing people to do a better job when knowing the relevant information and context), but also the future. Providing the relevant personnel details on how and why things are done is a good way to train the people who might one day be in a leader's position and who should understand why things work/don't work, are done/aren't done.

The "boss" will have the tendency to micromanage, accumulate all authority and decision making power, sometimes delegating tasks and responsibilities, but never the authority. Assigning responsibility without authority is not the best way of promoting organizational effectiveness, as it creates the conditions for failure, assigning blame and encouraging lack of initiative and confidence in the personnel. An additional negative side effect of over-controlling and not delegating authority is the creation of unnecessary tensions between the various members of the organization, as fulfilling the assigned task will be exclusively the personal responsibility of that person, depending on his personal relations with the colleagues, who have the possibility to choose if they may or may not support him/her in

the fulfillment of the assigned task. The employee can only "ask nicely", not knowing if they can depend or not on the proper organizational processes, information and channels.

This is another crucial difference between a boss and a leader: a boss will always be self-oriented and profit oriented, while the leader is people oriented, which does not necessarily exclude mission oriented or the self-interest. A leader can be very effective in achieving his/her mission, in fulfilling the organizational objectives, while at the same time considering his/her present and future interest and career. The main difference between an effective leader and a boss is that for the leader, one of the motivating factors is that he/she considers the personnel under his/her authority as team members, that have to be motivated to follow him/her. The leader is aware that the welfare of the personnel is crucial for the effective functioning of the team, the achievement of the mission/objectives and eventually for the development of the leader's career. A leader does not consider empathy and kindness weaknesses, while at the same time encouraging professional behavior and proficiency, by not tolerating toxic behaviors, lack of implication and slacking. A leader is motivated by gaining the trust and respect of the personnel, while

the boss considers the personnel as “subordinates”, mere “human resources” or “tools” to be used (and sometimes abused) for his personal interest and promotion.

In the attempt to exercise his/her control over the organization, “the boss” often uses tactics such as “divide and conquer”, by emphasizing and actively encouraging the divisions within the organization. For the boss to exercise control, a very effective tool is to create “the bad other”, by encouraging the common prejudices (such as racism, sexism or ageism), but also organizational specific differences of any kind (civilians vs military, operations versus administration, officers vs NCO’s, active versus retired, blue collar vs white collar). Any pretext is good for creating divisions, distrust, for identifying “the other” as the culprit, in order to enhance the level of control from the boss and to avoid unconformable questions regarding the actual effectiveness of the activity, but also for the benefit of his/her hubris, as the puppet master that controls everybody’s behavior, doling out rewards and benefits.

#### **4. CONCLUSIONS**

One question that arises from this paper is the following: can “being a boss” really be considered

as a leadership style, or is it that an unfortunate combination of personality traits and organization-specific conditions allow its appearance. Some bosses genuinely do not realize their destructive impact on the morale of the team, while others may even be very effective in achieving the organizational objectives, but usually only on short term, as on medium and long term the destructive effects of their approach to leading will significantly impact the human capital. Authority structures (formal and/or informal) play an important role in any organization, the more so in the military organization. Still, the most effective leaders realize that leadership is a privilege, not a reward, a due nor a destination on the career path.

The person in charge is given the formal authority over a group of people and has the power to significantly impact their professional and even personal development and lives. As such, leadership comes with huge human responsibilities, not only with institutional responsibility. Consequently, a good leader is one who is constantly working on improving his/her leadership, professional and personal skills, but also his/her character. The purpose should be to improve the effectiveness of his/her activity and to further the interests and values of

the organization, but also in order to set a good example for the people he/she is leading, who will be more invested in improving themselves and furthering the group goals if they see equal effort from the top. The phrase “do as I say, not as I do” should have no place in leadership.

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# IMPLEMENTATION OF CHANGE MANAGEMENT IN ORGANIZATIONS DOMINATED BY MECHANICAL BUREAUCRACY

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*Almost two years after the outbreak of the COVID-19 pandemic, the Romanian institutions in the fields of public health and national security have gone through and continue to go through processes of organizational change, with a major impact in terms of national security. Change management in these organizations of military origin is based mainly on coercion, being dependent on the political factor and the mechanistic bureaucracy, the resistance encountered being likely to affect national policies to combat the perpetuation of the pandemic and its effects.*

**Key words:** national security, public health, change management, mechanical bureaucracy.

## 1. INTRODUCTION

In the last two years, Romania has been affected by the global crisis generated by the COVID-19 pandemic, its effects being felt both at individual and organizational level, including at the level of institutions in the field of national security and public health. Various internal and external factors intervene in the change processes in these institutions, often due to the mechanistic bureaucracy, specific to militarized organizations.

Change management in public health institutions has a special role in the functioning of these

organizations and so far has not been addressed in terms of authoritarian management. In order to successfully go through the processes of change, each organization will have to design its own strategy and aim for new, effective practices through which to innovate and innovate, so that clearly designed image strategies allow them a better relationship with taxpayers.

## 2. CHANGE, A SAFE SOLUTION

In the current pandemic context, it is absolutely necessary and possible to have change management in the public institution in the field

of public health because the public environment is hyper-formalized. All bureaucratic rules are only stable for a while, so we need change management. Now come the problem as such, the hallmark of this change management.

Institutions in the field of national security must respond operationally to the challenges posed by the changes needed to operate at the international level, amid international influences and the promotion of adaptation strategies in line with security strategies. Thus, the management of these institutions must constantly face minor changes, some imperceptible, both in an international and national context, which are the basis for decision-making. Simon (1977, p. 23) considers that the elaboration of the decision is synonymous with the whole managerial process, the management functions actually representing a series of chained decisions.

Taking into account the country's macroeconomic situation and medium- and long-term development prospects, in the context of its integration into the European Union (EU) and the North Atlantic Treaty Organization (NATO), the topicality of the research topic is in line with both finding solutions to eliminate the effects of the pandemic crisis, especially in the area of efforts to identify managerial solutions to

eliminate the elements that slow down the processes necessary to align organizational structures and managerial policies to those imposed by strategic partners (Barcan, 2013).

### **2.1. Change, a permanent necessity**

This paper aims to critically analyze the influence of change factors at the organizational and individual level in organizations in the field of health and national security. The theoretical and methodological basis used is focused on bibliographic research and scientific research conducted at the level of public health organizations that have an impact on national security.

The scientific novelty is given by the study of some phenomena that transcend the social life and the practical value of this thesis is given by the identification of useful methods and strategies in the processes of change of the targeted institutions.

From a theoretical point of view, change management is considered to be an accumulation of disciplines, techniques and skills through which specialization and complexity are metamorphosed into actions and results, with the help of organization. At the same time, change management can be defined as a set of processes that act in the sense of planning, organizing,

coordinating, training and controlling measures aimed at actions aimed at replacing, modifying, transforming or transforming the organization, in form and content, in with a view to increasing its efficiency and competitiveness.

Change management in institutions in the field of national security has a special role in the functioning of these organizations, being so far approached through the prism of authoritarian management and coercive strategy of change, because the mechanistic bureaucracy governs these institutions.

Public organizations are constituted in very specialized systems, there being different criteria for their classification. Thus, some work in public health, others in the field of administration and others in the field of national security. On the other hand, some are profit-oriented, some are non-profit, some are in the public sector and some are active in the private sector. In conclusion, no two organizations are identical, each having its own particularities.

The transfer of techniques from the private to the public sphere means a change in existing structures and methods and the implementation of changes must be in line with the coordinates of the EU integration process, i.e. the achievement of operating standards characteristic of the Member States. For these reasons, public organizations must be able to

meet the challenges, because rigid administrations, constrained by rules and regulations, but also by their own resources, cannot provide a prompt response to the needs of society, constituting a barrier (Agapie, 2008).

## **2.2. Mechanistic bureaucracy, a changing brake?**

The activity of public organizations is inextricably linked to the government sector and the management of the public sector controls the activity of other organizations, taking into account economic and social policies. The efficiency of public institutions depends on the way in which governments use effective control mechanisms, supported by motivation, without resorting to the adoption and application of rigid procedures. The transformation of institutions can change things for the better, especially against the background of the economic-financial crisis affecting the Romanian state.

The mechanistic bureaucracy limits the employees to a narrow specialization, being characterized by rigidity. The obsessive preoccupation of this kind of organization for the observance of the rules makes it an inappropriate structure for conditions of uncertainty and risk, reason for which the respondents consider that the mechanistic bureaucracy represents one of the main elements of braking in the process of change.

Given that the institutions concerned are dominated by a mechanistic bureaucracy, a strategy that can be used in case of a change is the coercive one, but with short or very short results, the organization and functioning regulations allowing maintaining order and discipline even especially in crisis conditions.

This strategy can be complemented by indoctrination and rewarding those who support change, without hesitation in eliminating staff who do not act operatively to overcome resistance to change.

Today, importance is given to management to the detriment of the administration and more attention to results than means, but in crisis situations there is the possibility that personal authority may take the place of rules and civil servants may be forced to submit to power factors. Crises can be useful for the system of bureaucratic organization, which consists of routine procedures but also of periods of crisis which then ensure periods of stability.

From the point of view of the elements that slow down the change, the mechanistic bureaucracy represents a symbol of resistance to change, the interviewed persons not having the possibility to effectively participate in the change process, in the current conditions the militarized hierarchy innovative, possibly useful to the entire organization.

Mental blockages and disinterest are also, in the opinion of the respondents, elements of slowdown in the process of change, narrow personal interests or limiting thinking on the background of excessive indoctrination sometimes leading to the employee's refusal to give up routine tasks specific to mechanistic bureaucracy. The routine of the daily activity represents an obstacle in the way of change, the employee being convenient to keep in a circuit of tasks or operations with which he became familiar and which he executes rhythmically, almost automatically, with a minimum effort of thinking in the adaptation process.

Against the background of transformation, change and modernization processes the risk of adopting erroneous decisions or with adverse consequences in the current or future activity of national security institutions is all the greater as the complexity of the international environment is joined by the volatility of domestic and international legislation. In this sense, in order to reduce the risks associated with the decisions, the management must act for the improvement of the technology of information collection and processing, but also for the continuous monitoring of the environment and the immediate identification of the changes occurred.

Effective means in preventing the occurrence of risk situations are both continuous adaptation to changes in the environment and organizational learning. Continuous adaptation to changes in the environment has positive effects in terms of competitive advantage. The organization may use third-party intermediaries in volatile environments and direct efforts towards a stable and low-risk environment, with negative consequences for competitive advantage.

### **3. IMPLEMENTING CHANGE MANAGEMENT**

The change can cause another change or a chain of changes, with employees being affected by it and reacting differently, amid emotional reactions. Their consequences can be accepted, ignored or even rejected. As such, these reactions to change depend mainly on the ambiguity of the role and control exercised by the individual, the change can be perceived as an opportunity but also as a threat.

The techniques and methods by which change management materializes are adopted in an extensive decision-making process, directly determined by the professionalism and experience of the participants and managers. Because of this, this process is difficult to implement, but necessary

and mandatory, being required by the need to overcome the barriers caused by resistance to change.

From a conceptual point of view, organizational change in the international environment is characterized by volatility, high degree of complexity, continuous change and risk influenced by the national environment of organizations (Doval, 2005, p. 19). In reality, the national environment takes over the changes from the international environment, which automatically induces changes within the organization.

#### **3.1. The need to implement change management**

The variety and continuity of change to which modern public organizations are subjected has given rise to multiple approaches to organizational change management. At the same time, all approaches propose general directions to lead the change process without defining the formalities that allow the representation of the change process, the vision of change, the impact on the organization and / or the possible results of the change process.

Governments often provide facilities to disadvantaged groups, but these facilities initially require high-value investments, which in turn attract monopolistic tendencies and practices, so that, by their nature, they can generate a political impact

(Marinescu, 2001, p. 8). The control that is supported by legislative regulations fully ensures the coordination of public institutions, but there is a risk that, for reasons of financial nature or poor management of resources, the budgets of these organizations will be adversely affected (Mitrache and Budica, 2006).

Public organizations are in a volatile environment in direct competition with private equity firms, so that in order to support and promote the rules of the market economy, ie fair competition and to maintain proper control over economic branches considered strategic, governments they maintain direct control over these companies.

Governments have the authority to get actively involved in the economy, including by setting up their own companies. The administration has traditionally operated under the formal control of the political elite, but the evolution of society has imposed several types of administrative systems.

In this context, there are two conceptions about the state and about the beneficial or paradoxical effects of welfare policies (Preduț Radu, 2008b). The emergence of the first governments was possible due to the aggregation of human communities at the level of national systems, so that administrative structures emerged, which allowed citizens

access to government based on their own values, recognized locally or by laws and procedures imposed by the central level.

Changes in public organizations require redefining customer relations, reorganizing work, acquiring cutting-edge technologies, using quality management, but also investing in information campaigns.

The metaphor of the “flat earth” was launched by Friedman (2007, pp.26-27), suggesting the evidence and strength of globalizing processes. According to him, the flat world platform is the result of the convergence between the personal computer with the fiber optic cable and the development of software to automate business procedures, it was prevalent around the beginning of the XXI century, when people around the world began to realize that they had more than ever to develop globally as individuals.

The research conducted by Pripoae-Șerbănescu (2012) leads to the idea that new paradigms, such as network-based operations or effects-based operations, urgently require managers to acquire new comprehensive skills and superior decision-making skills, adapted to new managerial approaches. Thus, research on problem solving that is poorly structured and occurs under uncertainty has shown that applying a single decision model is both inappropriate and counterproductive

as decision makers naturally use intuitive methods. Through these, managers value both experience and previous methods of thinking, avoiding to follow the steps of a standardized algorithm.

For these reasons, at the level of organizations with responsibilities in the field of national security, as a response to the use of the classical decision-making method, Military Decision Making Process (MDMP), the alternative of practical thinking was proposed by specialists. This comes and is derived from the theory of naturalistic psychology, in its case being taken into account both the cognitive limitations and those pitfalls that the decision-making process can, inherently, induce.

Practical thinking proposes, from a managerial point of view, a style of thinking that is interrogative, reflective and integrative. Through this style of thinking, the manager has the opportunity to define and redefine, continuously, those problems that arise along the way, in order to identify and evaluate the solutions that have been adopted and the effects produced, by creating its own system for evaluation activities and control.

The change of the management model of the public organizations is inevitable and will produce effects both on the individuals and on the private sector, the public organizations not being guaranteed the

functioning or the level of financing. They will need to understand the dynamics of changing technologies, so that each public institution will need to have its own strategic design and consider new, effective practices, to innovate and innovate.

### **3.2. Trends in public organization**

The problem of change, ie the stage reached from the current stage and the structured and organized process that allows the transition from one stage to another, is permanently at the center of change management, and may be higher or lower, in terms of final purpose or implications. Change management can be oriented towards individuals or groups of individuals belonging to different directions or departments, on the whole organization or only on certain components of the environment in which the organization operates (Preduț Radu, 2008a).

In Romania, the most significant difference between social and public policies is that, while social policies designate government intervention to address social problems, public policies can be proactive, such as sustainable development, and responsible government agencies can hire an institution. specialized for the elaboration of an alternative variant of intervention, respectively the implementation of the policy or its evaluation (Chiciudean, 2007, p. 12).

Increasing the speed of information processing and the rapid transfer of innovation to a global market are external pressures underlying organizational change. At the same time, change is caused by forces within the organization, such as absenteeism, fluctuation and insufficient or non-existent motivation of staff or low level of productivity. For these reasons, managers working in public sector organizations need to invest more and more time and energy in planning organizational change management.

Organizational change planning is due both to the complexity of the challenges posed by competitive and turbulent environments and to the demands of those beneficiaries and decision makers who orchestrate change. Within the planned change programs, it is necessary to involve employees from all organizational levels, these programs providing for actions carried out at individual and organizational level.

Digital e-Government, ie that government based on new technologies, is a set of systems and resources that are specific to public management, which, through the appropriate use of information and communication technology, aims to optimize the administrative act (Becheanu and Floricel, 2011, pp. 25). From the experience of other public organizations, most change planning and management efforts have failed

when they set out to provide viable solutions to organizational problems, finding that organizational change projects are very expensive and costly and energy consuming. whereas a large proportion of managers and consultants make erroneous decisions when based on summary diagnoses and prompt interventions.

The public management system focuses on the services provided to citizens and presupposes the coexistence and coherent interaction of the public administration, the economic sector and the civil society (UCRAP, 2006, p. 10). The classical administration is governed by a package of dedicated normative acts, no longer adequate today. For this reason, public organizations have taken over both the techniques and management practices that are used in private equity organizations.

In the planned change, it is necessary, in several stages, to go through a complex process that requires a diagnostic analysis, the elaboration of an action plan aimed at the implementation of the change project and the evaluation of the obtained results.

At the conceptual level, the problem refers to the transition from one stage to another, the transition being fulfilled as a result of setting and achieving three types of objectives (transformation, reduction and application). If the transformation objectives focus on identifying the

differences between the two stages, the reduction objectives focus on determining ways to eliminate these differences and the implementation objectives focus on implementing measures that have the effect of eliminating those differences.

In general, and especially in the field of national security, there is no single strategy for change, so the adoption of a general strategy requires the application of a combination of strategies, which depends on a certain type of factors. An important factor is the degree of resistance. A strong resistance implies a combination of coercive strategies, adapted to the environment and a weak resistance implies a combination of empirical-rational and normative-educational strategies.

Another important factor is the target population. It has been observed that a large population requires a combination of strategies, one for each. High stakes involve a mixture of strategies and short-term temporary staff involve a strategy to exercise power, a situation different from long-term temporary staff, which involve a mixture of empirical-rational, normative-educational and environmentally friendly strategies.

A combination of strategies is needed for adequate change expertise. In situations where expertise is lacking, a coercive strategy can be adopted as a last resort. However, if the organization subject to change is

dependent on people, the ability of management to command or demand is limited.

Addiction is a double-edged sword. If people are dependent on the organization, their ability to oppose or resist is limited. In essence, mutual dependence almost always requires a certain level of negotiation, based on the expertise and experience of the staff, as well as on the possibilities of employee loyalty, the type of training and the characteristics of the job. It generates both a dominant position for the right person in the right place but also a decrease in the chances of getting a job elsewhere.

#### **4. CONCLUSIONS & ACKNOWLEDGMENT**

In terms of national security, change management has been, in our opinion, permanently connected to the influence of external factors, especially legislative, legal entities of the nature of institutions with responsibilities in the field of national security being the first to be transformed when politically significant mutations. Considering the concept of hierarchy of needs, developed by Abraham Maslow, immediately after the elementary physiological needs, the needs of security and safety are felt.

In order to meet these needs, a continuous adaptation is needed, the institutions in the field of national security having, in our opinion, the permanent obligation to prevent and

counteract the occurrence of risks, vulnerabilities and threats to national security, public health being often affected by the manifestation of factors that impede the processes of change or that disturb their effects.

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# THE EFFECTS OF LIMITING NEGATIVE UPWARD FEEDBACK UPON ORGANIZATIONAL PERFORMANCE

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*Communication is a complex process aiming beside the transfer of information, to the creation of meaning and understanding. Meaning and understanding will never be truly attained and developed without feedback. Feedback, be it positive or negative, is the element that completes communication. In this paper we shall try to discuss upward negative feedback and what it entails, what happens when it exists and is used within an organization and what the consequences are when it is absent or disregarded. Upward negative feedback is the most delicate type of feedback since it is provided by subordinates to superiors. Upward feedback is valuable and necessary in the decision making and problem solving processes unfortunately, information is frequently distorted due to the intricate manner it reaches top levels, especially in the organizational cultures which are very hierarchical and centralized and the impact alters..*

**Key words:** *communication, feedback, negative feedback, performance.*

## 1. INTRODUCTION

Organizational communication is a sub-domain of the communication field which deals with the interaction from inside and outside the organization. It aims to providing understanding, facilitating organizational activities and support for the achievement of organizational goals.

Organizational communication is a complex process aiming beside the transfer of information, to the creation of meaning and understanding within the organization. In his book *The management profession*, Allen (1964) states that communication is the sum of all the things one person does when they want to create understanding in the mind of another [1]. It is a bridge of meaning. It involves a systematic

and continuous process of telling, listening and understanding in order to achieve goals and tasks. However, this process is not only about accomplishing tasks and reaching organizational objectives, it also supports relationship development among the individuals composing the organization, their attitudes, morale and organizational climate.

Meaning and understanding will never be truly attained and developed without feedback. Feedback, be it positive or negative, is the element that completes communication. In this paper we shall try to analyze upward negative feedback and what it entails, what happens when it exists and is used within an organization and what the consequences are when it is absent or disregarded. Upward negative feedback is the most delicate type of feedback since it is provided by subordinates to superiors.

Most of the time, organizational communication is considered, due to a limited interpretation, as being synonymous to what is called *business communication*. Business communication includes official messages, business letters, reports, advertising, planned work meetings etc. However, organizational communication has a broader

spectrum which encompasses business communication, as well as leadership activities like supervision, guidance, conflict management, team building activities and informal and daily interaction among organizational members, all of the above being part of the communication process developed within an organization. Informal communication includes stories, grapevine talk, rumors and socializing that represent a significant exchange of information (Ibarra & Andrews, 1993), especially when informal or casual talk combines with discussions about work tasks.

Organizational communication, as a study domain, developed during the beginning of the 20th century, at the same time with the development of management theories. Frederik Taylor, who is a management pioneer and a leader of the Efficiency Movement, in his book *The principles of Scientific Management*, presents the employee only as a task achiever therefore, he sees organizational communication as meant to support employee productivity. Consequently, instructions, orders, recommendations, feedback (downward) were provided strictly with

the aim of facilitating the tasks necessary to attain the established level of productivity. One of his four management principles says that there should be provided “detailed instruction and supervision of each worker in the performance of that worker’s discrete task” (Montgomery, 1997, p.250). This type of communication was mostly unidirectional, the employee feedback was of little or no interest to superiors.

Henry Fayol (1916) has a slightly different approach, seeing the employees as being more than task accomplisners, but individuals who can be motivated in different ways not only financially. Thus, he identified the importance of the relation between the employee’s interests and the organizational objectives. Aligning employees with the organizational objectives and values will result in a better sense of teamwork and higher commitment. Understanding how the achievement of organizational goals will help them reach personal ones will increase their engagement. Therefore, communication must be put to use for the organizational advancement.

Organizational communication gains some importance as can be noted in *General and Industrial Management* where Fayol mentions miscommunication and animosity among members of the same or different departments as sources of a difficult work climate [2]. However, communication was still mainly vertical and bottom-up feedback was not taken into consideration, if existent.

W. Charles Redding, developed organizational communication into a domain of study called at that time *business speech* and *industrial communication*. In his work *Communications within the organization: An interpretive review of theory and research* (Redding, 1972) he discusses about meaning and the fact that we can consider a message as being received only if it is acted upon. He regards communication overload as an interference in the good reception and understanding of messages and discusses feedback, highlighting its importance and impact on the life of an organization. His fifth postulate states that “Feedback is not only essential in the operation of an organization but these messages have both beneficial and harmful consequences.” [7]

## 2. NEGATIVE UPWARD FEEDBACK AND ORGANIZATIONAL HEALTH

Redding analyses feedback from the point of view of *responsiveness* and *receptiveness*: Feedback within an organization is a two-way circuit including both managers and subordinates. Feedback receptiveness refers to how much feedback managers welcome from subordinates while responsiveness refers to how much feedback managers give. Redding stresses another difference between being *receptive* to feedback and being *responsive* to it. When one is *receptive*, they are able and qualified to receive feedback however, they will not take it into consideration and act upon unless it is convenient for them. *Responsive* refers the capacity of an individual to welcome, acknowledge and act upon the information (feedback) provided. Most of the time managers mock acknowledging feedback, especially when it is negative, for various reasons among which we can mention: time pressure, lack of interest, lack of consideration towards the provider of feedback, personal ego etc.

Negative feedback is avoided mostly because of leadership's

reluctance and refusal to accept opinions contrary to theirs. Also, because of the fear of the other members' reaction, the anticipation that discontent will gain more voices and conflict or activity disruptions could appear, upward feedback is not encouraged.

Organizations will always have an element of chaos and conflict within, perfect harmony is just an idealistic, to hope for state. Nevertheless, this is normal, even productive, as long as the leadership is capable of solving the conflict through communication and understanding of what has provoked it.

Alexander R. Heron's (1942) book, *Sharing Information with Employees* [8] looks at manager-employee communication from the point of view of the informational content that is shared and the channel used. It is stated here that the simple act of giving orders or an impersonal transfer of information is not enough for the task to be accomplished successfully, unless the receiver understands the larger context which includes the reasons for doing the specific task. Managers need to share enough information so

that the employee should be able to create meaning of their role and responsibilities and they should also check understanding through feedback.

Kassing (1998) says that organizational health and harmony are not similar. Healthy, from an organizational point of view, signifies an organization that develops and improves, adapts to challenges and searches for new opportunities and this endeavour can be a smoother or a rougher process. Having open lines of communication, accepting comments that are not aligned with the official trend, is part of a healthy organization's core processes. For such reasons, two way feedback, top-down and bottom-up, is necessary provided it is honest and unaligned.

Apart from the organizational structure and leadership style, organizational trust is another very important organizational variable that impacts how the employees feel and act towards providing feedback. Reina and Reina (2006) formulate that trust is the basis for effective organizational communication, and that its absence generates "...decreased risk-taking and collaboration, breakdowns in information sharing, decreased

performance..." (Reina and Reina p. 34).

Upward feedback is valuable and necessary in the decision making and problem solving processes. Unfortunately, information is frequently distorted due to the intricate manner it reaches top levels, especially in the organizations which are very hierarchical and centralized and where feedback coming from lower organizational levels is not taken into consideration. Lacking or distorted negative upward feedback will impact negatively the decision making process due to the incomplete and doubtful quality information used for it. Therefore, the decision might not address or might not be appropriate for solving the actual problems.

Redding (1972) discusses participative management and presents communication as an important characteristic of participation. He differentiates between real participation and pseudo participation [12]. Pseudo participation is a façade for authoritarian management, a pretense of decision-making process where subordinates have a say in. There is no real power shared and no open communication, the

information discussed will not be taken into account and subordinates are reluctant to speak.

*Locus of Control* is another variable that influences negative feedback. Employees are mostly reluctant to speak their mind because of the consequences they envisage when disagreeing or presenting information about organizational inadvertences. Locus of Control, or more formally, "Internal versus external control of reinforcement... refers to the degree to which persons expect that a reinforcement or an outcome of their behavior is contingent on their own behavior or personal characteristics versus the degree to which persons expect that the reinforcement or outcome is a function of chance, luck, or fate, is under the control of powerful others, or is simply unpredictable." (Rotter, 1990, p. 489). The higher the external locus of control is for one person, the least they will be prone to speaking the truth. When one feels that their rewarding depends on the receiver of their feedback, they will try to avoid creating any discontent. People having a stronger feeling of internal control of reinforcement will be more likely to provide real feedback, even if it is negative feedback.

### 3. CONCLUSIONS

Upward negative feedback plays an important role in the workplace, it is an indicator of the level of health present in the organization, it can shed a different light upon many of the situations existing there and help in the decision making process. Negative feedback can be provided in a non-aggressive manner and it is not a source of conflict. Divergent opinions can offer a new perspective when they are analyzed and not disregarded for the basic reason that they were provided by subordinates.

Negative upward feedback can be meaningful and it can improve organizational performance as long as it is real. Effective communication entails listening to others and considering the information provided. Absence of negative upward feedback is a sign of unhealthy organizational climate causing low employee engagement and in the long run it will hinder the achievement of organizational objectives.

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# PROFESSIONALISM IN MILITARY: THEORETICAL AND PRACTICAL APPROACHES

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*Military sociology being a special discipline has resulted in establishment of a permanent study group with contributors in shape of academic scholars and military officers. Based on the works of military profession theorists, modern militaries have adopted a more flexible and technologically advanced outlook with emphasis on professionalism through training, education, mentoring and ethics in order to address and live upto the challenges of 21<sup>st</sup> century. In these changing and testing times one resounding constant has emerged in the shape of human being and his will to fight as a single most determining factor between winning and losing.*

**Key words:** *Military Sociology, Military Profession, Techmology, Professionalism, Ethics, Education, Mentoring, Will to fight, Determining factor*

## 1. INTRODUCTION

Professionalism in military traces its roots to the works of Samuel Huntington. In his work the most fundamental thesis is that modern officer corps is a professional body and the modern military officer is a professional man. Professionalism, however, is characteristic of the modern officer in the same sense in which it is characteristic of the physician or lawyer. Professionalism distinguishes the military officer of today from the warriors of previous ages. The existence of the officer corps as a professional body gives a unique cast to the modern problem in

civil military relations. Huntington highlights that distinguishing characteristics of a profession are its expertise, responsibility and corporateness. He focuses on management of violence as main military expertise. Janowitz extended the notion of military professional to encompass experts in logistics, support services and acquisition processes that were equally necessary for success in war. Based on the works of these illustrious intellectuals, researchers, have made considerable advancements in domains of military professionalism. They have explored multiple areas of professionalism, the list is non-

exhaustive. Contemporary armed forces of the world are faced with challenges which in the past were even difficult to imagine. Geopolitical scenarios are experiencing transition at a phenomenal pace. Technological break troughs have quite considerably condensed the life span of new innovations. The rate of obsolescence has increased manifold, while on the other hand technology is getting more and more accessible.

In these testing times it is very important to understand that armed forces do not exist in isolation the economic and cultural changes inadvertently have an impact on military personnel and they cannot remain aloof from the society they live in. Military of country is a quintessential element of its national policy owing to rapid global volatilities, the importance of a professional military cannot be overemphasized. Professional armies all across the globe have invested heavily to bolster and further enhance their war fighting capabilities at strategic and tactical level both in theory and practice. The endeavor however is perpetual. Technological advancements have changed the dynamics of conflicts. A lot of ground has been covered in this realm. Extensive employment of technologies had enabled militaries to achieve high value objectives with minimum effort.

In above highlighted scenarios a likelihood of undermining the human element exists, which may have devastating results, because at the end of the day it is the human resource present at the helm of affairs and therefore, ethics, professionalism and will to fight will prove to be difference between winning and losing a conflict. The paper is an effort in this very direction.

## **2. CONTRIBUTORS OF PROFESSIONALISM IN MILITARY**

### **2.1. Military sociology**

Sociology is the academic domain employed to investigate military world and its relations and interactions with other special groups. The real contributions of sociological investigation on the military appeared in the frame work of widely varying disciplines. But the rise of a special sociology dedicated to the military, dedicated by second world war, did not follow any academic planning, but displayed a development that was fully marked by autonomy, diversity, and, at times, also by contradiction, often as a result of concrete, pressing requirements. Military sociology thus falls within the special sociologies and, consistently, within the International Sociological Association there is a permanent study group that deals

with this discipline, the Research Committee on Armed Forces and Conflict Resolution's. For centuries, the military world and the military mind-set have constituted a quite different, quite separate environment from the other institutions, groups, and aggregates of civil society. The contributors are split in to two major groups the academic scholars working in universities, national research centers and the military itself mostly as officers on active duty or leave.

## **2.2. Theorists of military profession**

Huntington, Janowitz and Hackett are three essential theorists of military profession. Huntington stretched his definition of professionalism across a three side frame work of expertise, responsibility and corporateness. Janowitz presumed that the militaries of western democratic states were professional and predicted their necessity to become smaller, more technologically focused, and more politically attuned. Hackett enshrined the concept of unlimited liability in professionalism, meaning thereby that demands of military profession are more encompassing than any other. A foundational balance is struck between these three theorists of military profession. Huntington planted firmly in historical context, Hackett describing the realistic,

even functional, role sacrifice and loyalty play in the profession, and Janowitz looking forward, predicting a continued revolution in military affairs and a changing context of military engagements. Much has changed since these works were presented more than half a century ago, and the question of professionalism is perhaps more complicated than it was a that time.

## **3. CHALLENGES OF 21ST CENTURY**

### **3.1. Flexible forces**

The central theme of most western states in post-cold war security landscape is to build a flexible military. The term flexible forces, entails such forces which are equipped with the appropriate hardware, force structures and people politics that will enable states to respond swiftly, in collaboration with allies and/or friends bounded in "coalitions of the willing", to a wide variety of crises whose precise nature it is quite difficult to predict in advance. These are some of the military consequences of living in a more uncertain world, at least when compared with what may now be regarded as the relative certainties or even relative security of the bipolar Cold war era. Development and maintenance of flexible forces entails serious tensions between two different kinds of flexibility, first is

the ability to maintain full range of military capabilities that might be required to meet any conceivable crises and second a more specific capability to provide rapid and appropriate military responses to a faraway crises which may have eminent repercussions close to home. In building agile and responsive forces the demand for quality of human resource is likely to increase. An important feature of the flexible forces, capable of being agile and responsive in a variety of military operation is the suppleness of their command and control systems. They must have the capability to manage political imperatives (the effects of military operations on the media and public opinion) on one hand and military imperative on the other. It will also be important for the armed services to compare their own people policies with those competitors in the private sector in terms of what will be required to recruit and retain the best and the brightest among the youth population for it is these young people who will be needed to make sure that such flexible forces will produce successful results in future military operations.

### **3.2. Impact of technology**

Maintaining military critical capabilities requires advance technology. The digital divide is not to be taken lightly because in military institutions, ranks sustains historical working patterns, it resists

the adoption of new technologies, and maintains obsolete procedures. Major technological changes have reshaped strategic priorities in defense. Cyber security, whose function is to protect systems, networks and programs for digital attacks, has become a cornerstone of military activity. Cyber-attacks usually aimed at accessing, changing, or destroying sensitive information are now targeting civilian public infrastructures. Technology has the power to reshape institutional functioning, and a change of such magnitude will necessarily marshal a vast quantity of additional means and resources as well as new skills leading to new capabilities. The introduction of AI (Artificial Intelligence) also entails that lifelong learning will become an essential component of a military career. Military education will be impacted too, and many courses, such as human resource management, aeronautical engineering, ethics and legal knowledge, and economics of innovation to mention just a few examples will need updating. In Huntington's view for an officer to understand his trade properly he should be able to develop his relation with other fields and the ways in which these other areas of knowledge may contribute to his own purposes. In addition, he cannot really develop his analytical skill, insight, imagination and judgment if he is trained simply in vocational duties. The abilities and habits of mind which he requires

within his professional field can in large part be acquired only through the broader avenues of learning outside his profession.

#### **4. DEVELOPMENT OF PROFESSIONALISM**

##### **4.1. Training and education**

Extensive and quality training is imperative for any military. It forms the basis of armed forces, the members of a force must be reformed to ensure uniformity, skill development and aligning the attitudes in commensuration with the predefined standards. The imparted training ensures desired results at every tier of military, may it be at junior level or at different levels of command and staff. Professional militaries invest in programs of personal development way beyond basic training requirements. It endeavors to instill knowledge, enhancement of intellectual skills and most importantly creation of awareness in the members to envision their place in military and the direction in which the world is heading, in a logical manner. This desirable state of personal development falls in the realm of education. Education entails knowledge and knowledge expands understanding and it must be augmented with ethical education. This enables the professional to determine, what differentiates him in the society and what he owes to the society he is living in. Education

therefore enables the individual to continually comprehend improve impart, preserve the professional knowledge so that the forth coming generations can gain some benefit out of it. In today's world the concept of professionalism has permeated all rank and files with varying degrees depending upon the structure and hierarchy of the military. Military history is a very important component of military education which enables its students to develop understanding of past events, and to draw crucial lessons from them. History also provides guidelines for what professional militaries might be doing now. History does not repeat itself, but it does occasionally rhyme. Study of history creates humility a very important attribute of a professional. History sends an important message to its reader that he is not the first one. There were others prior to his existence who overcame daunting challenges. Furthermore the emphases while going through the annals of history should be on defeats and important lessons drawn thereof. The officers new in the system should be compulsorily acquainted with the history of their outfits it will create a sense of belonging. It will remind them that they are part of something bigger and older and the standards of conduct and behavior set for them must be adhered. Another very important aspect of professional development is conduct of operational exercises having different scenarios. The exercises

would involve all tiers, ranks and files. The process will ensure a practical feel and an opportunity to have a practical insight. It will give an exact overview and will answer the important question of where the organization stands professionally and what has been achieved and which areas need improvement. A system which ensures an intellectual growth as the officer's rise in rank and file is very important for the organization. The senior officers will operate in an environment which entails thorough understanding of what's going around, basically. They need to get a grip on geopolitical affairs, functioning of other diverse organizations and develop an ability to understand their perspective. This, primarily ensures, harmony, efficient and effective conduct of affairs.

#### 4.2. Mentoring

The process of mentoring plays a crucial role in formulation of a professional identity. It surely promotes talent, to start with, it is an integral part of some service cultures. Mentoring is a relationship between a less experienced individual and a more experienced person. Mentoring is further divided in to formal mentoring and informal mentoring while the latter is established based on a relationship, in formal mentoring, the match is created by the organization. The impacts mentoring create are a much better understanding of the functions of an organization. The

individual acquires ways and means to execute critical assignments it also develops a sense of competence and identity. The most important impact is the role modeling, wherein the mentor deliberately sets an example for an individual which is incorporated in the professional identity. A successful mentor possess a desire to serve and benefit others, similarly the potential candidate for mentoring is the one who has a strong desire to learn and has a high level emotional stability. Mentoring in an organization depends upon organization culture and how the organization views this activity. Success and satisfaction in a working environment is a benefit also attributable to mentoring beside other factors. Military is primarily a combination of individual capabilities and cohesive organizations. The leader endeavors to strike a balance between the two. The structured composition of military hinders all those present in the chain of command to become mentors and the members need somebody to lead them, so that they can make sense of their potential roles in the larger whole.

Mentoring also leads towards creation of professional identity. In this form of learning process individuals seek assistance of others to define their identities through engagement and imagination as a part of social learning process. According to recent studies there exists a strong link between professional identity formation and mentoring. Experimental learning

activity form the basis of mentoring. It entails ongoing activity between the mentor and the individual and both of them are exposed to new ideas and new experiences. These ideas and experiences culminate into reflection and the desire to answer new questions. Mentoring is based on inside out learning which is a reflective process of learning and the second form is the outside in learning wherein the external forces exert their influence on learners and open new avenues of learning. Closely associated with experimental learning is storified learning in which inspiration is drawn, wisdom is achieved and opportunities for reflection are created. Story basically allows the listener to live an idea. Benefits of storytelling are huge. Storytelling is a tool in mentoring which is extensively employed. Solid foundations of mentoring relationship hinges upon authentic two way storytelling process, as fraudulent narratives soon get exposed.

Third, component of informal learning is, understanding of mentoring as a source for professional identity formation known as cognitive apprenticeship. The learner through collective problem solving assignments is put in multiple roles, experiencing ineffective strategies and misconceptions as they refine their individual and collaborative work skills. This draws on students own life experiences to build new learning construct, that

ease transition into the profession. Mentoring is not merely a transfer of knowledge but on the contrary it is based on exchange of ideas and insights. The learning process is mutual. Military organizations can best promote mentoring by creating mentoring spaces rather than matching mentoring faces. In this bid tactical level units can provide the best forum along with the cognizance of individuals developmental needs.

### **4.3. Ethics**

Military professional have fundamental commitments they owe to the service, their subordinates and the public they serve. These commitments in the turn hold ethical significance. Professions exist in a relationship with a specific client, same holds good in a case of military profession. There are ethical requirements of the profession for instance, expertise, rules and values. Thereafter comes the ethical requirements of a professional, encompassing skill, leadership and character. In the end comes the ethical requirements of the clients comprising of guidance, support and value they need to enable the profession and its professionals to set and uphold those standards. There is a requirement to view the profession and the professional distinctly. Profession influences behavior in a manner its individual numbers cannot. Individual numbers are responsible to maintain the health

and strength of the profession. The individuals however do not possess this ability. In the same manner it's imperative to distinguish between the two while examining ethical responsibility. It is also important to examine ethical requirements of the client. The client's obligations to the profession and its members at times get overlooked. There exist ethical burdens on those who receive the profession service. The elements of professional relationship that is the profession, professional and client must honor their responsibilities this will in turn flourish the professional relationship.

The ethical obligation of military is disciplined use of violence for a political end. Society expects from military to advise its leaders thoughtfully on feasibility of violence to reach desired political results, and to then execute society decisions effectively. In order to achieve a political end through disciplined use of violence, the society trusts military to define the standards of expertise and subsequently holds military accountable for the consequences for falling to demonstrate it. The profession being answerable to client endeavors to perpetually polish the abilities of its constituent elements so that the profession can deliver in the hour of need. If the members of profession stop serving the client and start serving themselves they would cease to be a profession or professional.

The ethical requirement of professional is that he must fulfill certain responsibilities to maintain standards of the profession. The professional owes ethical responsibilities to its institution and the client he serves. The individual undergoes a process of transition from minimum standards of tactical proficiency to a professional excellence in a complex rapidly changing environment with a simultaneous growth of intellectual abilities. Development of juniors also comes under the ambit of ethical responsibilities of a professional. The phenomenon however gets overlooked as the burden of executing operational exigencies increases. Leaders have the responsibility to allow subordinates to practice, fail, and grow without fear of negative consequences.

The responsibility of the client is to enable the profession and professional to fulfill their responsibilities. The profession requires clients trust, it also requires material support. The client spells out political guidance to direct and constrain the disciplined application of violence for a political end. The client identifies the political end communicated through the country's political leaders and communicates its expectations concerning what constitutes the disciplined application of violence.

## **5. WILL TO FIGHT**

### **5.1. Importance**

The phenomenon of will to fight is the single most important factor in war. It is also the firm stance of military strategies and historians. The American armed forces believe this to be the most important factor in war. The failure of will, results in ending of every military conflict in world history. Will to fight is composed of intricate human aspects of warfare and many more. It is tested in the tense days, hours and minutes between instances of combat. It expresses dedication towards an armed conflict, in the matter of life and death the will is most clearly tested and revealed, everything is focused on the physical capability. This position to fight is complex it is the result of individualized factors like physiological characteristics, motivation and expectations for support. It is the human agency which activates the disposition to fight, to avoid fighting or to flee. The will to fight is tested in ceaseless barrages of enemy artillery, lack of sleep, extreme weather, and constant fear of death. Will to fight cannot be quantified as human agency defy meaningful quantification, it is simply cannot be measured.

### **5.2. Morale**

The will to war is directly proportional to good discipline and strong morale among troops.

Morale relates to training, ideology and esprit de corps. An excellently trained individual possessing strong ideological beliefs that align with military mission and a powerful connection to an elite unit is more likely to have high morale at any given point in time. Lower will to fight factors make individuals more vulnerable to low morale. Surface indicators of morale are extraordinarily difficult to determine the will to fight, it cannot be deduced from the face value. Neither job satisfaction nor martinet obedience is consistent indicator of high morale or will to fight. There are therefore, strong chances of misinterpreting the enemy morale will to fight.

### **5.3. Motivation**

Motivations are obtained through cultural interactions with family members, friends and groups from formal and informal learning at home and in school and from social and material needs including desire to succeed and the need to survive. Motivations weigh heavily on the decision to fight but they do not stand alone. It is an interconnected network of unit and individuals will to fight. Desperation is another form of motivation, it is the combatants will to survive. Revenge fueled, will to fight, can also be an immediate motivator or it can reflect deeper danger. Oppression of minorities over time can generate a deep desire for revenge motivation through

organizational or state information campaigns. Ideology is another manifestation of motivation, it is a commitment to a cause or belief system. It can encompass patriotism, religious commitment or explicitly political ideologies such as strong belief in communism or Nazism, or abstract concepts like peace or freedom. Identity is the most weird and most complex motivation and is multifaceted. Soldiers among other identities have social and ethnic identities. Will to fight of all soldiers will be influenced by various identities from within and outside the military organization. Identity is both culturally obtained and unique within the individual. Each soldier form a unique perspective on various influencing identities and in doing so creates a separate unique identity that influences will to fight. These motivators contribute towards a soldier's will to fight.

#### **5.4. Individual capabilities**

Individual capabilities fall under two categories the first is soldier quality and second is the competence. Quality consists of education, social skills, fitness, physiological traits, adaptability and resilience. Quality is the soldier's ability to understand the often complex reasons that fighting is required to remain stable and avoid succumbing to panic. Higher quality soldiers have more disposition to fight. Lower quality soldiers have fewer dispositions to fight. Next in line is the competence comprising

of skills and capabilities developed as an individual or as part of unit, including fighting, basic soldering, specialty, leadership and fitness. Skills and capabilities can, preexist training, but they are strongly influenced by military training and combat experience.

#### **5.5. Expectation**

It is an important will to fight factor. A soldier's expectations are numerous. They expect their leader to be competent, to take good care of them and they will risk lives only when necessary. They expect from other units to keep their flanks secure. They also expect from higher formations to provide reinforcements and medical support. At the higher levels they expect state leaders to remain committed to their mission to provide them with clear objectives and to rally public or moral support. Sustained expectations correlate with sustained disposition to fight. Broken expectations can weaken and even shatter soldiers will to fight. If soldier's in a unit do not expect much from their leaders, organization, or each other they will be less enthusiastic about fighting.

### **6. CONCLUSION**

The paper is developed to gain an insight into military professionalism starting with the works of twenty century intellectuals, form where the foundations of military professionalism were laid.

Ever since the ground breaking works in this field, various factors have brought about a change in the ground realities. These changes are in the form of geo political situation, technological innovations and formation of coalition alliances. The dynamics of warfare have experienced a considerable advancement in requirements of the militaries, forcing them to restructure with greater flexibility and emphasis on being lean efficient and technologically advanced. The only constant in this process of evolution is human being. In contemporary world professionalism and will to fight are the areas of utmost importance. Last two chapters of paper have explored these dimensions for the reader.

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# CONTEMPORARY TRENDS IN HUMAN RESOURCE MANAGEMENT AND THEIR RELEVANCE FOR THE TUNISIAN ARMED FORCES

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*In line with the changes taking place in the private sector, most armies in the world have been working to develop ways to manage their resources in order to achieve more performance and governance, knowing that they live in a changing and highly competitive world. In this context, the Tunisian army in general, and the air force in particular, have engaged in this new trend. In terms of provision of financial resources and to achieve these noble goals, we speak today of budgeting by objectives, which are now in its early stages. As part of the “Vision 2030”, the Air Force has undergone major changes in the way human resources are arranged, sending in 2018 a new structure that has a strategic role in the management of these resources in terms of planning, monitoring and development, especially in light of recent trends in this area. This is what we will address closely in this research. In the first part, we will discuss the current situation of human resources management in the Air Force, and then in the second part, we will explain the importance of applying modern trends in this field which goal is to increase performance and governance in Human Resources Management (HRM).*

**Key words:** *Vision 2030, human resource management, performance, governance.*

## 1. INTRODUCTION

In line with the changes taking place in the private sector, most armies in the world have been working to develop ways to manage their resources in order to achieve more performance and governance, knowing that they live in a changing and highly competitive world.

In this context, the Tunisian army in general, and the air force

in particular, have engaged in this new trend. In terms of provision of financial resources and to achieve these noble goals, we speak today of budgeting by objectives, which are now in its early stages.

As part of the “Vision 2030”, the Air Force has undergone major changes in the way human resources are arranged, sending in 2018 a new structure that has a strategic role in

the management of these resources in terms of planning, monitoring and development, especially in light of recent trends in this area.

This is what we will address closely in this research. In the first part, we will discuss the current situation of human resources management in the Air Force, and then in the second part, we will explain the importance of applying modern trends in this field which goal is to increase performance and governance in Human Resources Management (HRM).

## **2. THE ACTORS OF THE HRM FUNCTION, THEIR MISSIONS AND THE LIMITS OF THE PRACTICE**

### **The actors of the HRM function and their missions**

To meet the organizational and planning needs of the Air Force, there are a number of stakeholders serving the Air Staff such as: the Office of Human Resources, the Air Military Zones and the Human Resources and Financial Affairs Division.

These actors are responsible for managing the personal interests of the Air Force in collaboration with other agencies.

Therefore, it would be wise to specify the role and tasks of each agency in order to understand how the system works.

### **The Office of Human Resources**

The Office of Human Resources is in charge of assessing personnel requirements, in peace and wartime, establishing general administration rules concerning the units and military and civilian personnel of the Air Force, establishing rules relating to the dress of personnel, acting as an administrative advisor within the Air Force, giving an opinion on common texts which are of interest to the Air Force. It is also responsible for advising on the application of laws and regulations concerning the general organization of the air force, military justice and all matters relating to the status of military and civilian personnel.

The Office of Human Resources is also in charge of the follow-up and coordination of all social action issues.

### **Air Military Zones**

After the last reform, and within the framework of decentralization, two military air zones were created: one in the north and the other in the south. Within each zone, there is an office in charge of the management of the personnel attached to it, i.e., each zone has the role of manager at the level of its geographical perimeter, especially with regard to the mobility of its subordinates.

Each commander of a zone has the full authority to move his individuals between the organizations present on his territory. This action, for example, was the responsibility of the Air Force Office of Human Resources. It can be concluded that this office has the same role as the Office of Human Resources but in a regional level, which reduces the burden of the office mentioned first, and regarding the matters requiring a decision of the General Staff, the two offices of these zones serve to collect and centralize the elements requested from the command, make proposals and forward them to the Office of Human Resources for decision.

### **Human Resources and Financial Affairs Division**

The main mission of this division is to know all the data related to the human resources management in order to help the command or the leaders to take the decision related to the identification of the needs concerning the recruitment, the training, the designation of the personnel.

The main tasks of this division are to establish statistics and future scenarios to meet the needs of the Air Force in terms of human resources according to the objectives set and according to the structural pyramid.

This division consists of two offices that oversee human resources management:

- Office of Studies, Planning and Prospecting.

This office is responsible for studying the needs of the different formations of the Air Force from the human resources at the level of number and jurisdiction, determining the needs of the Air Force at the level of human resources in the medium and long term and providing the staff with proposals and arrangements in accordance with its objectives and future programs, preparing a program of assignment in order to meet the future needs of the different specialties, Conducting the necessary studies in the field of human resources management to ensure the recruitment of people according to the specialization and needs of the units and air bases and schools, scheduling and implementing periodic awareness forums for the administrative staff, this office is also responsible for preparing reports and studies according to the topics determined by the Office of Human Resources of the Air Force.

- Office of Human Resources

The Office of Human Resources is responsible for the development of an annual social work program for the Air Force in collaboration with the relevant structures, for its

approval by the General Staff and for its implementation, as well as for the improvement of individual skills through the creation of training programs in the administrative field. It establishes mechanisms to evaluate and encourage performance in the case of recruitment in order to guarantee the appropriate quality and the required empowerment of the recruits in collaboration with the schools and training centers of the Air Force. It is responsible for monitoring the execution of the Air Force training programs to develop individual skills and to follow the knowledge control procedures to ensure the proper performance. Finally, this office verifies the correct application of the instructions issued by the General Staff in the field of Human Resources.

### **The limitations of HRM**

Certainly, the adopted system of human resources management has some weaknesses or limitations. The most restrictive limitation is the lack of an efficient information system for human resources management, the lack of a career path for the air force specialties - which is also the case for other armies - the lack of organization and equipment charts for each organization, and finally the fact that in some cases the air force is not able to retain its personnel and

that they leave for other professional fields

### **Limitations in HRM functions**

- In terms of recruitment:

As the number of annual departures remains high, the Air Force is obliged to ensure an increasing number of recruitments each year. The success of recruitment campaigns is therefore a major concern for the HRM function. In addition, the sudden increase in recruitment volumes has temporarily dried up the recruitment pools.

In addition, the competitive examination is the preferred method for the majority of recruitments that are carried out. One year in advance, the Air Force defines its needs according to the different categories of personnel and according to the allocated budget. The duration of the recruitment process is very long.

Finally, the Air Force is unable to implement operational action plans based on their strategic objectives due to their cumbersome bureaucratic structures. For example, there are significant discrepancies between the number of recruitments planned and those actually carried out.

- At the training level:

For the Air Force an annual training plan is prepared each year in consultation with the heads of

the various departments. However, training plans are rarely carried out in full due to the heavy workload, the resistance of certain managers or external factors such as what happened in 2020 (coronavirus). In addition, there is no continuous training for the various military personnel.

- On the evaluation level:

Air Force personnel are subject to evaluation, most often by means of a form that groups together a set of criteria. Periodically, usually once a year, a grade is given to subordinates by their immediate superior. Theoretically, this mark is used essentially to award a performance bonus, the amount of which depends on the mark obtained. In practice, however, all subordinates, with rare exceptions, obtain excellent marks and thus benefit from the maximum amount of the bonus. This state of affairs makes the evaluation process “a mere administrative formality”, “more paperwork”.

### **Non-efficient human capital maintenance**

This conclusion is drawn through an observation of the lack of motivation among some soldiers, translated in cases by an increase in the number of resignations among the military or by the appearance of the phenomenon “burn out” which

presents a professional exhaustion resulting from a stress at work that has not been properly managed and which has a negative effect on the professional efficiency, this phenomenon can lead to the departure following health reasons.

Moreover, the appointment in the different functions is done according to the grade without taking into consideration the competences of the person appointed.

Moreover, even if the Human Resources(HR) strategy development aspect is present in the Air Force, it does not come from the awareness that placing the individual at the center of the organization allows it to be more efficient but from a budgetary necessity.

For this reason, the implementation of a personnel condition policy, contributing to the morale and cohesion of airmen, is also an essential determinant of HR policy.

### **Lack of organization and equipment charts and non-existent career paths**

Human resource needs were often identified by the lack of a specific position. Consequently, the need for numbers or specialties is an immediate response to an urgent situation. The use of an in-depth study or a schedule of organization

and preparation ((Forward-looking management of jobs, staff and skills (FMJSK)), is not put in place despite the important role it plays in determining the number of personnel as well as their career path.

The Ministry of National Defense clearly does not have a Cartesian roadmap that serves to specifically identify future recruitment needs, despite various attempts in this area.

In this context, given the remarkable evolution of its needs, the Air Force is facing a complexity which is spread over several points such as the insufficiency of a provisional management of jobs and skills and the absence of a clear process in the management of professional careers, in addition, there is no framework that defines the different stages covered by a military officer throughout his career.

### **Lack of an efficient information system**

Since its creation on June 15, 1965, the Air Force has undergone several organizational and structural evolutions. While the constituents, human resources remain confused due to the difficulties and limitations they present during the application.

These limitations are mainly reflected in the absence of a database and a clear process, reliable and

capable of managing in a dynamic and interactive way the relations between the offices and the different departments and groups.

The Air Force, like other armies, has adapted to a constantly changing societal and economic environment in order to meet the challenges posed by their increased power. It now intends to meet these challenges by implementing both traditional and innovative solutions.

### **3. NEW TRENDS IN HRM AS AN OPPORTUNITY FOR THE AIR FORCE**

The objective of the “HR maneuver” is to ensure that the armed forces have sufficient numbers and quality of personnel. To achieve this in the years to come, faced with a changing pool of talent and in-depth changes in the operational environment, tomorrow’s recruiters and managers will first have to develop the HR process throughout the career. But they will also have to influence the human environment of the soldier to help him or her better live the job and fully develop. Finally, HR departments will have to increasingly consider the impact of new technologies, both on the resource itself and the needs of the armed forces, but also in the management of career development.

### **Acting on processes**

In order to support a sustainable and qualified HR policy, it is crucial for the Air Force to act directly on the processes. To do so, it is necessary to improve management, to adapt recruitment to the evolution of supply and demand on the job market, to improve retention and to ensure a good reconversion.

### **Improving management**

This requires, first of all, measures of a general nature applicable to the entire Ministry of Defense. On the budgetary level, the Air Force must plan to finance measures aimed at improving living conditions and better reconciliation of personal and professional life.

In addition, the Air Force's priority is to transform the way of working and the internal organization to make it more flexible and dynamic, leaving behind the hierarchical structures of the past and being able to respond quickly to changes.

In terms of management, the individualization of career paths meets a strong expectation of the military. Everyone wants to be accompanied and advised at each milestone in their career. The corollary of this individualization is the development of a complete career path in all specialties, in order to offer good visibility in the development of one's career.

The New Military Pay Policy project is intended to simplify a pay system that has become so complex that it is difficult to understand. While the aim is to increase and harmonize pay, it will be necessary to ensure that the armed forces are given a certain amount of freedom in awarding bonuses, so that they retain this essential HR policy lever.

### **Adapting recruitment to technological change and the requirements of new generations**

Recruiting is a strategic function for the military. To meet the Authorized Manpower Cap, they must meet their initial recruiting goals.

To recruit well, the Air Force must take into account the characteristics of the population entering the workforce. This generation is accustomed to the personalization of data and the immediacy of digital technology and would have difficulty tolerating long recruitment times. It must therefore adapt its recruitment strategy by better targeting individuals, modifying their process and playing on training. But before taking targeted measures, it is necessary to monitor the health of the recruitment pool, which is tending to deteriorate.

One of the obstacles to recruitment is the fear of immediately

taking up a position too far from home. This is why the Air Force must increasingly develop local recruitment.

The best way to reach Generation Z is naturally through digital tools. Each army must have its own website dedicated to recruitment. These tools are also used for individual follow-up of candidates.

In addition, the Air Force needs to review their recruitment process by improving the training of recruiters, especially their knowledge of the job offers through on-base immersion courses and improving their mastery of language elements as well as sales techniques.

In addition, reducing the length of the recruitment process also helps to address candidate impatience. Being more reactive in defining needs and updating files in real time are ways of reducing waiting times, as is the simplification of recruitment procedures.

Finally, for recruitment, it would be a matter of using artificial intelligence for low value-added tasks to let recruiters focus on activities where human intelligence is still necessary. It's not about replacing humans, but rather augmenting them by using artificial intelligence to pre-select the most relevant profiles. In sourcing, artificial intelligence

can help in sorting and prioritizing applications according to the characteristics of the positions to be filled.

It is also possible to create an "intelligent" algorithm fed by the data of potential candidates in order to broadcast job offers within digital advertising spaces. The profiles of the candidates are compared to the missions proposed by the recruiter so that the targeting solution generates job offers adapted to the candidates' profile. The tool also allows to measure the performance of recruitment campaigns. This could be used by the military. The chat-bot, already successfully used for recruitment, could be used for individual management. Thus, a direct and regular dialogue, although virtual, could take place between the soldier and his manager.

### **Recruit and retain talent**

In an economy based on knowledge and human capital, the acquisition of talent is vital for the success of the army. Hence, finding the right people who are complementary, flexible with their environment, aware of what they bring, mobilized on what they can bring in turn and who never forget that they need others to produce this result, represents a major challenge for managers.

To recruit (and then keep) the best professionals, human resources managers should use social networks, new cognitive technologies and Big Data.

In a flow management, recruitments must compensate for departures, or be superior to them in a period of increase of the workforce. While “natural” departures are inevitable, spontaneous departures can be limited or even avoided by good retention.

Attractiveness is based on the combination of an assumed military identity and the guarantee of a decent professional and personal life. This implies a fair remuneration, a reduction of the constraints linked to the profession, signs of consideration and targeted category measures. Hence, human resources managers in the Air Force must improve the motivation and commitment of their soldiers, offer them better training opportunities and, above all, pay special attention to the new requirements of Generation Y.

While pay is one of the main levers for retaining soldiers, the armed forces are also seeking to reduce the constraints associated with the profession and thus make it more attractive and bearable. In this respect, one promising avenue is to limit the frequency of transfers. The same is true for housing policy,

which strives to offer a wider range of accommodation to transferred soldiers.

Recognition is also a lever for retention. Although it is less tangible than an increase in pay, it contributes to the feeling of usefulness and service that characterizes the military. Military personnel need consideration, commensurate with their commitment and sacrifice. Recognition is also expressed through the quality of command. A close command, in which the leader is close to his men and shows that he is interested in them, is a factor of loyalty. The trend today is towards younger and more diverse leaders, capable of leading digital technologies.

### **Ongoing staff training**

A soldier’s professional career typically lasts 30 to 40 years. Given the rapid pace of technological change, and to prepare for the challenges of the next few decades, the solution is continuous learning. We can no longer simply go to college and build our professional future on what we learned in those years; *today, our professional career has become a continuous learning experience.*

In order to provide their soldiers with the necessary skills and knowledge, training and development

managers should develop less rigid and more personalized teaching models that can be used anywhere and anytime by introducing new technologies. For example: the disruptions to Air Force training imposed on us by the coronavirus pandemic since 2020 could have been avoided if training had been adopted remotely.

### **Outcome or goal-oriented evaluation**

The way to move up in the organization or get a pay raise is changing. Years of experience and degrees are no longer the primary form of evaluation; now the Air Force must move to a faster, more flexible model. Human resources departments must look for new evaluation models based on well-defined objectives and continuous feedback.

### **Competency-Based Appointment**

The Air Force should apply a managerial approach that allows the value and recognition of the skills held by its soldiers. Moreover, it allows the latter to become aware of their current situation and the skills to be acquired. Both of these facts will motivate a soldier to progress professionally, if the follow-up is done correctly. It also gives the

employee an idea of his or her capabilities. Personnel who know their limits and possibilities will be all the more efficient and professional in their duties.

This management tool allows managers to better understand the capabilities and shortcomings of their subordinates. With this information, the possibility of delegating responsibilities or new tasks is facilitated and improved, because the manager will be able to designate in the different processes he manages the most appropriate people to do so. This way, the Human Resources Department (HRD) will be able to work on performance and optimization of the organization with a set of concrete and available information.

### **Acting on the environment**

Process improvement measures are primarily aimed at individual members. They are often targeted and technical. But the military member does not work alone. They serve in society and have a family. Acting on this environment is also a way for the military to meet HR challenges.

### **Make a better living from your job**

A soldier who makes a good living from his profession is fulfilled and entirely focused on accomplishing his mission. Beyond

the mere increase of pay, a policy of action on the environment implies an improvement of the household income in general, by ensuring the good employability of the spouses through a support during transfers.

Nowadays, there are applications that regularly invite employees to answer surveys in order to detect the weak and strong points of the company in real time. The objective is to improve their working conditions, as well as their productivity. Each week, employees receive reduced questionnaires created by work psychologists. The machine then takes care of making the figures speak and identifying their needs to transmit them to the managers. The latter can then implement actions to strengthen internal dialogue. This application could be adapted to armies to support their human relations centers.

### **Development in the service of operational efficiency**

The accumulation of burdens on the military due to a lack of manpower sometimes makes it difficult to perform the job. The use of subcontracting or the reduction of certain burdens is a solution envisaged by the armed forces.

To do one's job well, one must have operational equipment. This is obviously vital in operations, but

also during training and exercises.

Improving living conditions on the premises is also a guarantee of security for the personnel. But without forgetting the role of the command, which must be "at the level of the man" and care for each individual. It must also be experienced and in sufficient numbers, hence the need to limit quota measures and to leave it to the armed forces to set up the staffing levels that suit them. It is also important to develop esprit de corps, which is a powerful cohesive factor. This sense of belonging is not innate, it is acquired by learning the history and traditions of the arms and units.

### **Towards computerization and digitalization of human resources**

The Air Force should provide its human resources with a reliable information system and make them more digital.

### **The implementation of a reliable human resources information system**

The Air Force must overcome the limitations of their existing information systems.

Hence the implementation of reliable information systems will lead to profound changes in the HR function, their impact can be summarized through three

main dimensions: decentralization, personalization and communication.

- Personalization

The personalization of the HR function has resulted from the fact that the organization's personnel can, thanks to the multiple Human Resources Information System (HRIS) tools (intranet, company portal, self-service, etc.), manage a large part of their activities remotely.

The various HRIS software and programs have turned users into customers whose requests must be satisfied as best as possible (consulting schedules and dashboards, reporting, managing absences and working hours, updating individual data, etc.).

The personalization of the HR function represents a major asset for the Air Force. It simplifies processes, reduces the risk of errors (data entry at the source) and saves considerable time. HR managers can offload administrative tasks and focus on higher value-added activities such as management, reporting and decision making.

- Decentralization

The decentralization of the HR function is manifested by the transfer and delegation of authority within the function and has as a direct consequence the change of organizational structures. Indeed, the category of middle managers

has appeared whose role is to liaise between the personnel and the HRD. They collect information from the base, ensure the operational management of the personnel, thus allowing the HRD to focus on strategic activities in relation to the global objectives of the organization (training plans, recruitment plan).

- Communication

The HR function is driven by an internal communication network that ensures the maintenance of relations between the hierarchical levels. HRIS tools are used to disseminate HR information between the various players.

HR software has become a vector for rapid and unhindered communication. They contribute to the circulation of different types of information: various schedules, work instructions, leave requests, pay slips, internal regulations, organization charts, personal information, etc., and to feedback between the various management levels.

Nowadays, human resources management is faced with many challenges: to take care of classic administrative functions (payroll management, time management, employee file management...), while contributing to the achievement of management's objectives and thus ensuring a strategic function of the organization. Being both

an administrative expert and a strategic partner is a contemporary issue facing the HR department. The implementation of an adequate Human Resources Information System (HRIS) seems to be the appropriate solution to this problem.

Finally, a security policy must also be put in place to guarantee the confidentiality of information and its integrity.

### **Towards a digitalization of HR**

Modern armies are at the cutting edge of technology. They must keep up with this evolution and apply all the resulting transformations to their field, otherwise they will be downgraded. HR must therefore adapt to these changes by recruiting and training personnel capable of operating in this new environment. A soldier must now be able to implement complex information systems, which require new technical skills and cognitive abilities to master. Even though the generations entering the workforce are very comfortable with digital technologies, the Air Force should adapt its recruiting and training tools to these new requirements while maintaining the core skills necessary for resilience.

While digital technologies allow for rapid data acquisition and flow, they generate a large and continuous stream that must be

analyzed, evaluated and processed. Whether in the command posts or in the machines, this flow can quickly overwhelm the capabilities of the human brain. Hence the use of artificial intelligence is increasingly becoming the key tool to process the flow of information arriving on the terminals in real time. This implies the adoption of new processes in headquarters and of course the recruitment of developers and data scientists capable of providing the keys to reading these processing algorithms and identifying any bias.

While these new technologies support human resources, they can also replace them in certain tasks, implying a reduction in staffing requirements or at least a transformation of needs. In fact, innovations and technical progress are already having an impact on the workforce of certain units.

In non-military occupations, the development of artificial intelligence may have effects in terms of automation and downsizing. Administrative work in particular could be greatly reduced.

Although many people worry about the negative consequences of this technological revolution, it is actually a great opportunity: this combination of humans and machines (which some define as an “augmented workforce”) can

help create more jobs, increase productivity and allow employees to focus on the more human aspects of the job.

*It is clear that the Air Force should invest more than ever in human resources management by adopting new methods that are beneficial to all levels of management.*

#### 4. CONCLUSIONS

The recent reforms made by the Air Force at the structural level, despite their importance in making human resources management one of its most important priorities and with a strategic dimension far from the bogged down bureaucracy, so much work remains to be done for future challenges in this field.

After the health crisis with the Coronavirus disaster, which, although it paralysed the world, woke it up and pushed it to manage human resources in a different way.

This, together with the emergence of contemporary trends in this field, made it necessary for the Air Force to take these transformations seriously and take advantage of them to achieve greater efficiency and governance in the management and preservation of the resources placed in it and to streamline decision-making at all levels, relying on an efficient and secure information system as well as modern technologies to become more attractive for skills and talents that have become very scarce nowadays.

And this cannot be done without the implementation of a modern, dynamic and networked structure.

Finally, if this change initiative succeeds, the Air Force will become an inspiring example for other armies at the level of the Tunisian Ministry of Defence.

# SOCIOECONOMIC EMPOWERMENT OF WOMEN IN EUROPEAN UNION COUNTRIES

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*One of the main topics of discussion today is women's empowerment. The Human Development Reports of the United Nations Organization analyzes this topic by using three dimensions: reproductive health and family planning, violence against girls and women, and socioeconomic empowerment. In this paper we will talk about the socioeconomic empowerment of women's in EU Countries.*

**Key words:** *women's empowerment, HDR 2020, share of female graduates, HDI rank*

## 1. INTRODUCTION

According to the World Vision Organization, women empowerment can be defined as: promoting women's sense of self-worth, their ability to determine their own choices, and their right to influence social change for themselves and others.

In the Human development Report 2020: The next frontier: Human development and the Anthropocene we can find the data for women's empowerment in Dashboard 3.

The Sustainable Development Goal no 5 (Gender equality) and Sustainable Development Goal no 1 (No poverty) have as one of the components the Socioeconomic empowerment of the women's,

with the following 5 indicators: female share of graduates in science, technology, engineering and mathematics programmes at tertiary level; share of graduates from science, technology, engineering and mathematics programmes in tertiary education who are female; female share of employment in senior and middle management; women with account at financial institution or with mobile money-service provider; and mandatory paid maternity leave. We will present those indicators for the EU member countries.

The Human Development Index for the above mentioned countries, alongside the country codes are presented in Table 1, Table 2 and Table 3.

**Table 1.** HDI for AT-EL

HDI rank	18	14	56	33	27	6	10	29	32
Country	Austria	Belgium	Bulgaria	Cyprus	Czechia	Germany	Denmark	Estonia	Greece
Code	AT	BE	BG	CY	CZ	DE	DK	EE	EL

**Table 2.** HDI for ES-LU

HDI rank	25	11	26	43	40	2	29	34	23
Country	Spain	Finland	France	Croatia	Hungary	Ireland	Italy	Lithuania	Luxembourg
Code	ES	FI	FR	HR	HU	IE	IT	LT	LU

**Table 3.** HDI for LV-SK

HDI rank	37	28	8	35	38	49	7	22	39
Country	Latvia	Malta	Netherlands	Poland	Portugal	Romania	Sweden	Slovenia	Slovakia
Code	LV	MT	NL	PL	PT	RO	SE	SI	SK

## 2. METHODS

### 2.1. The first indicator

For each of the 5 indicators we synthesized the data in intervals in the following tables.

According to the HDR 2020, the share of graduates in science, technology, engineering and mathematics programmes at tertiary level, female is the *share of female tertiary graduates in science, technology, engineering and mathematics programmes among all female tertiary graduates*.

This indicator (Table 4) is less than 10.5% in Belgium (7.5% - minimum value), Netherlands

(8.7%), Cyprus (8.9%), Luxembourg (9.5%), Latvia (10.2%), and Malta (10.3%).

This share is between 10.5% and 15.5% in Slovakia (11.9%), Hungary (12.2%), Lithuania (12.3%), Finland (12.4%), Spain (12.4%), Bulgaria (12.5%), Denmark (12.7%), Czechia (13.9%), Ireland 14.1%), Austria (14.3%), Slovenia (14.5%), France (14.5%), and Poland (15.3%).

The highest shares, between 15.5% and 20.5% are in Sweden (15.7%), Italy (15.7%), Estonia (17.5%), Croatia (17.6%), Portugal (19%), Germany (19.2%), Greece (20.2%), and the maximum value is in Romania (20.3%).

**Table 4.** Female share of graduates in science, technology, engineering and mathematics programmes at tertiary level

Share of graduates in science, technology, engineering and mathematics programmes at tertiary level, female	Countries	No of countries
5.5-10.5	MT,LV,LU,CY,NL,BE	6
10.5-15.5	PL,FR,SI,AT,IE,CZ,DK, BG,ES,FI,LT,HU,SK	13
15.5 – 20.5	RO,EL,DE,PT,HR,EE,IT,SE	8

## 2.2. The second indicator

Concerning the share of graduates from science, technology, engineering and mathematics programmes in tertiary education who are female we have the synthesized data in Table 5.

According to the HDR 2020, this indicator is the *share of female tertiary graduates in science, technology, engineering and mathematics programmes among all female tertiary graduates*.

This share is less than 31.5% in: Belgium (25.8% - minimum value), Austria (25.9%), Finland (27.4%),

Germany (27.6%), Luxembourg (27.6%), Malta (27.8%), Ireland (29%), Netherlands (29.3%), Spain (29.6%), Lithuania (29.6%), and Latvia (31.1%).

The majority of EU countries have this share between 31.5% and 38.5%: Hungary (31.7%), France (31.8%), Slovenia (33.3%), Denmark (34.2%), Slovakia (35.2%), Sweden (35.5%), Czechia (35.6%), Bulgaria (36.9%), Portugal (37.8%), Cyprus (38.3%), and Estonia (38.4%).

The highest shares, between 38.5% and 43.5% are in Croatia (38.9%), Italy (39.5%), Greece (40.1%), Romania (41.2%), and the maximum value in Poland (43.4%).

**Table 5.** Share of graduates from science, technology, engineering and mathematics programmes in tertiary education who are female

Share of graduates from science, technology, engineering and mathematics programmes in tertiary education who are female	Countries	No of countries
25.5-31.5	LV,LT,ES,NL,IE,MT,LU,DE,FI,AT,BE	11
31.5-38.5	EE,CY,PT,BG,CZ,SE,SK,DK,SI,FR,HU	11
38.5-43.5	PL,RO,EL,IT,HR	5

### 2.3. The third indicator

The third indicator is the female share of employment in senior and middle management – *the proportion of women in total employment in senior and middle management*, according to the HDR 2020.

This share (Table 6) is less than 28.5% in: Luxembourg (17.9% - minimum value), Italy (23.3%), Croatia (24.3%), Netherlands (26%), Czechia (26.6%), Denmark (26.65), and Cyprus (27%).

With this share between 28.5% and 35.5% are: Germany (28.6%), Greece (29.8%), Malta (30%), Ireland (31.3%), Belgium (31.9%), Austria (32%), Slovakia (33.3%), Spain (33.7%), Romania (34.2%), France (34.2%), and Estonia (35.1%).

With a share of more than 35.5% are: Hungary (35.9%), Finland (36.8%), Portugal (37%), Lithuania (38.6%), Bulgaria (39.3%), Slovenia (40.5%), Poland (41.2%), Sweden (41.9%), and Latvia (43.5% - maximum value).

**Table 6.** Female share of employment in senior and middle management

Female share of employment in senior and middle management	Countries	No of countries
17.5-28.5	CY,DK,CZ,NL,HR,IT,LU	7
28.5-35.5	EE,FR,RO,ES,SK,AT,BE,IE,MT,EL,DE	11
35.5-45.5	LV,SE,PL,SI,BG,LT,PT,FI,HU	9

## 2.4. The fourth indicator

The fourth indicator is the share of women with account at financial institution or with mobile money-service provider (Table 7) – *the percentage of women ages 15 and older who report having an account alone or jointly with someone else at a bank or other type of financial institution or who report personally using a mobile money service in the past 12 months*, according to the HDR 2020.

This indicator is the lowest in: Romania (53.6% - minimum value), Hungary (72.2%), Bulgaria (73.6%), and Czechia (78.6%).

Between 80% and 90% are: Lithuania (81%), Croatia (82.7%), Slovakia (83.1%), Greece (84.5%), Poland (88%), and Cyprus (90%).

The majority of the EU countries have at this share more than 90%: Portugal (90.6%), France (91.3%), Italy (91.6%), Spain (91.6%), Latvia (92.5%), Ireland (95.3%), Slovenia (96.9%), Malta (97%), Luxembourg (98.2%), Estonia (98.4%), Austria (98.4%), Belgium (98.8%), Germany (99.2%), Finland (99.6%), Netherlands (99.8%), Sweden (100%), and Denmark (100%)

## 2.5. The fifth indicator

The last indicator (Table 8) is mandatory paid maternity leave. According to the HDR 2020, this is *the mandatory minimum number of calendar days that legally must be paid by the government, the employer or both. It refers to leave related to the birth of a child that is available only to the mother; it does not cover parental leave that is available to both parents.*

Less than 110 days have the women from: Germany (98 days), Slovenia and Belgium (105 days).

112 days of mandatory paid maternity leave we have in Netherlands, Latvia, Luxembourg, France, Spain, and Austria and 119 in Greece.

In Romania, Malta, Lithuania, Denmark, and Cyprus we have 126 days of mandatory paid maternity leave. Poland and Estonia have 140

**Table 7.** Women with account at financial institution or with mobile money-service provider

Women with account at financial institution or with mobile money-service provider	Countries	No of countries
50-80	CZ,BG,HU,RO	4
80-90	CY,PL,EL,SK,HR,LT	6
90-100	DK,SE,NL,FI,DE,BE,AT,EE,LU,MT,SI,IE,LV,ES,IT,FR,PT	17

days, and Finland 147 days. More than 150 days are in: Italy, Hungary, Ireland, Czechia, Croatia, Slovakia, and Bulgaria (410 days – maximum value).

tertiary education who are female; the female share of employment in senior and middle management; the women with account at financial institution or with mobile money-

**Table 8.** Mandatory paid maternity leave

Mandatory paid maternity leave	Countries	No of countries
Less than 110	BE,SI,DE	3
110-120	EL,AT,ES,FR,LU,LV,NL	7
120-130	CY,DK,LT,MT,RO	5
130-140	EE,PL	2
140-150	IT,FI	2
More than 150	BG,SK,HR,CZ,IE,HU	8

### 3. CONCLUSIONS

Gender equality is a very sensitive subject of discussion that is why the United Nations has propose it as the Sustainable Development Goal no 5 worldwide. The Socioeconomic empowerment of the women’s is very important not only in the countries with medium and low human development, but also in the ones with high and very high human development.

The female share of graduates in science, technology, engineering and mathematics programmes at tertiary level; the share of graduates from science, technology, engineering and mathematics programmes in

service provider; and the mandatory paid maternity leave are indicators that demonstrate that the womens are having an important role in the society, but the way to obtain the gender equality is very long.

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# TIME MANAGEMENT: THE BASIC CONCERN IN THE ORGANIZATION

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*The concept of time management defines a set of principles, practices, skills, tools and systems that together help a person in an organization to assess what is left at their disposal in order to improve their quality of life. The most important aspect that should be mentioned is that time management does not require a person to learn to do as many things as possible in a short period of time, but it rather ensures that the person does what needs to be done, dealing with the things that really need to be addressed. The ability to manage your time effectively is important. Good time management leads to improved efficiency and productivity, less stress, and more success in life.*

**Key words:** efficiency, productivity, organizational management, organization, time management.

## 1. INTRODUCTION

A person who has good time management techniques manages to accomplish more tasks in less time, while being more relaxed and succeeds to balance his personal and professional lives (Eldeleklioglu, Yilmaz, & Gultekin, 2010). The ability to organize and manage time influence a person’s professional success Time is a resource available to any employee, manager and a resource that should never be overlooked.

There are two ways of approaching time:

- effective, positively manifested by trying to better manage this resource;
- negatively manifested by ignoring or mismanaging the budget.

Every organization wants to hire people who are able to manage their time effectively and to work in a predetermined range, according to the requirements of the job. In the context in which the existence of a business is subject to productivity,

employers and managers must take care for the deadline to be met, and that each team member accomplishes tasks during working hours (Kassel, 2010). [3]

## 2. METHODOLOGY AND RESEARCH QUESTIONS

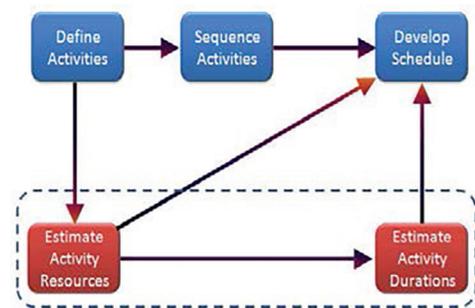
The aim of this research is to identify the impact of efficient time management strategies in an organization and to find the factors that influence the ability to manage time using the method of integrative reviewing. Research was conducted under the following guiding questions: What is time management? Which are the best time management strategies? How important is it to identify the best time management strategies in an organization? Which are the factors that influence an individual's ability to manage time?

Searches were carried out in DOAJ, EBSCO, WILEY, Elsevier and other databases. The sources reviewed include articles from different journals that were published between 2010 and 2014 and books concerning the above-mentioned topic. [8]

## 3. TIME MANAGEMENT STRATEGIES

Because not every person has the ability to manage their time effectively, it is the responsibility of

the leaders to familiarize employees with new habits that they will be able to use in practical ways during the hours spent at work (Grissom, Loeb & Mitani, 2013). In the absence of the implementation of such techniques, situations always arise where, at the end of the day, or before the expiry of a deadline, there are employees who are still struggling to do what they were asked. When large volumes of work and tasks that are not evenly distributed accumulate, there are chances that some will work less and others will receive many tasks and will not be able to complete them (Hashemzadeh, Ranjbar, Moosavi & Eidi, 2011). Therefore, the most efficient strategy in terms of time management would be delegating a number of tasks to each team member, so that they are broken down, as much as possible, in an equal volume and depending on specialization and experience through the time management process (Figure 1). [2]



**Fig. 1.** The time management process  
Source: Personal interpretation  
of the data

Postponing usually continuous tasks derives from the fear of failure or that things might not be done the way they should (Walker, Wysocki & Kepner, 2012). Undecided or less organized employees tend to postpone the fulfilment of tasks and always have a low productivity, wasting a lot of precious time. What we need to say is that if employees today have many problems to solve and they procrastinate, tomorrow they will have even more problems to solve (Seaward, 2011). [5]

Employees must learn to categorize tasks according to the importance and urgency with which they are to be addressed (Figure 2) (Bresciani, Duncan & Cao, 2010). Many people invest a lot of time in tasks with low importance and of a minor emergency, but if the things they have to do were to be prioritized, results would be much better. If employees cannot prioritize tasks themselves, this has to be done by the manager of the team, so they can be given proper meaning. Beyond all these aspects, there are also a few other things that a good leader needs to bear in mind when it comes to efficient time management within the workplace. It would be good to know that the employees know very well how to manage the objectives of certain tasks and understand that as tasks become less pleasant, they still have made no efforts to recover. [7]



**Fig. 2.** The time management prioritization  
Source: Personal interpretation of the data

#### 4. THE IMPORTANCE OF TIME MANAGEMENT

Performance-conscious managers know that time is continuous, measurable and time management is a priority for the success of a business (Hashemzadeh, Ranjbar, Moosavi & Eidi, 2011). Effective decision makers do not start from their duties, from the time that is available to them. The source of the problems regarding time, however, is a complex one. The causes can be grouped into three distinct categories:

- external causes, which are caused by lack of organization: the time that is allocated to activities and scheduled outages is too short (including cell phones) from the members of the organization or from outside it, unforeseen emergencies (if applicable), not preparing the order of meetings or the meetings;

- causes that are related solely to the person's manager, his/her way of being and to behave or the particular situation he/she is facing (fatigue, depression, anxiety, personal issues, financial concerns or family);

- causes pertaining to employees and/or business partners: lack of punctuality thereof, or the fact that they "pull time, extending the talks" or they are involved in a complicated and momentarily intractable issue or, on the contrary, irrelevant or erroneous information, lack of jurisdiction and placing the responsibility on the manager for solving their task.

All of these are the result of the intervention of the so-called "thieves" of time: phones ringing, visit of "uninvited" people, the sparing to work, sitting too long and poorly organized, priorities that were not clearly established or are non-existent for the manager, the lack of delegation of authority and accountability, the postponing of unpleasant or heavy tasks, surfing the web or watching some television shows, the lack of structure, organization, technical problem, the manager's inability to oversee people etc. (Thomack, 2012). [1]

The personality of the manager puts his mark on the company and upon all those who come into contact with it. Time management starts with the management of their own people. The main cause of the

failure, both in business and in life, is the lack of a self-imposed discipline. Knowledge helps us understand the behaviour and attitudes towards certain values and, above all, it lets us create this behaviour in the direction that minimizes faults and wrong attitudes, on the one hand, and enhances efficiency of labour, on the other hand. One of the important dimensions in any decision or action is the time. For this reason, we must see if the manager has a predisposition to use time efficiently or defectively. Whichever attributes or qualities of a successful manager or subordinate staff qualities, a crucial criterion which underlies success lies in the approach towards time. There are important differences between attributes and behavioural styles that leave their personal imprints in this regard:

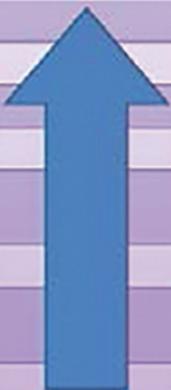
- some people work better at the start of the day, while others in the afternoon;
- some individuals prefer to distribute the effort over a long period of time, while others prefer to focus efforts on short, intensive tasks;
- some individuals may only face a single task at a time, while others may be able to juggle several activities at the same time;
- some people are oriented towards other tasks;
- some prefer to delegate as

much as possible, while others prefer to keep tasks and to undertake alone;

- some individuals are very neat and methodical, others are chaotic and unorganized;
- some people have more skills or are more experienced than others.

One way to track the effectiveness of the use of time is to be aware of the tendencies to use personal time ineffectively. In many instances, these trends represent the answers sought to streamline the use of time. In the case of not taking them into account, they may have negative influences in terms of stress due to time. If, for example, activities carried out before the unscheduled, are scheduled, the major could remain unsolved. Many managers

demonstrate trends to solve problems before emergencies, thus amplifying the feeling of overload. If problems are solved before the difficult ones, time management is used inefficiently because the managers solve problems which should be delegated, while significant issues remain unresolved. The existing techniques for the optimization of the manager’s time cannot be applied all at once (Figure 3). The manager must decide only to a maximum of three techniques to streamline what he considers best suited to his style of organization. The correct application of the techniques leads to getting an average of 30 minutes per day, which can be used to solve other problems. Accumulated over a period of 40 years, those minutes would lead to another year of activity. [9]

Good Time Management Skills Lead To:	Positive	Negative	Poor Time Management Skills Lead To:
Productivity			Productivity
Energy Levels			Energy Levels
Stress Levels			Stress Levels
Organisation			Disorganisation
Accomplished Tasks			Unaccomplished Task
Shorter Task Time			Longer Task Time
Positive Relationship			Negative Relationship
Health			Illness

**Fig. 3.** Time management. Good skills vs bad skills  
 Source: Personal interpretation of the data

## **5. DETERMINING PRIORITIES**

For the determination of priorities, employees have at their disposal a number of useful tools such as:

- Comparative Analysis: used in situations in which the criteria are subjective or will give inconsistency. This analysis consists of an objective comparison between tasks, to determine what is truly important.

- Grid analysis: this type of analysis is used in situations where you have several factors to take into account.

- Matrix priority actions: this is a chart comparing the benefits of writing through, to which a task is approached with energy. It helps to identify the really important activities, which bring great benefits in short time.

- Emergency: this matrix helps to draw a demarcation line between urgent and important tasks, because urgent activities may be important or unimportant, some may have a longer duration of implementation, in order to be fulfilled.

- Boston matrix: used in business to set priorities according to the attractiveness of the market and possible profits obtained from fulfilling this task.

- Ansoff matrix: similar to the previous, Ansoff matrix allows you to evaluate the priority of tasks depending on the risk assumed by them.

- Pareto analysis: its assumption is that 80% of the problems they cause constitute 20% of the causes of all problems (Belal Said, 2014). Employees need to make a list of the issues they encounter and their causes, give notice to each trouble and group them according to common causes. The group with the highest score should have priority in problem-solving.

- Nominal group technique: it is used for team projects and takes into account the opinion of each member. Every issue needs to receive a note from each member. Such priorities shall be established through mutual agreement.

Management means efficient and effective leadership of a task. From this perspective, the manager cannot make a profitable business for the company for which he is responsible if he does not know how to effectively manage resources. And time is a precious economic resource, demanding and irreversible: time is the most rare resource being irreplaceable but at the same time “unlimited”; it is expensive but may not be purchased, stored, replicated and its loss cannot be ensured not even by the largest insurance company in the world, so it cannot be “compensated”; it is very perishable and inelastic. However, time is not anyone’s property, it is impersonal, and is not constrained by physical frontiers. [4]

Performance-conscious managers know that time is continuous and measurable and that time management is a priority for the success of a business. Effective decision makers do not start from their duties, from the time they have available. And many authors believe their orders as “available” in the greatest period of continuity, as a three-step process: recording time, time and time-based consolidation efficiency factor.

Time management is founded on the principles of programming, coordinating and controlling time. The notion of effectiveness requires that, for each individual, the time should be used wisely and productively, in accordance with the pace and with the resources available to each individual, in order to ensure the achievement of precise activities within a given time limit (Figure 4). The management of time depends upon each person to designate periods of time, thoroughly determined, for every action to be performed (programming), to take action in order to follow the plans (coordination) and to regularly evaluate the acquired outcomes (control). [6]

## **6. FACTORS THAT INFLUENCE TIME MANAGEMENT ABILITIES**

The elaboration of the temporal patterns of conduct and their implementation depends on

many individual factors: cultural, organizational, technological or social:

- Cultural factors: the comparison performed on a period of over 30 years between the African, European, North American, Latin American and Eastern populations, outlined changes that culture has exercised over the concept of time. Westerners wonder why Africans and Latin Americans do not understand the need to be punctual or to meet the timelines for the completion of projects. Time has a relative and a cultural explanation. For example, many Africans are hostile to any attempt of the rigid structuring of time; they justify this by the desire to use the time not only for work, as westerners do, but also to live beyond the constraints of the professional life. The oriental gives more importance to the person, the informal context and are more interested in time. Their vision is more spirited and more symbolic than that of westerns concerning time, rather, as a quantitative resource which must be improved, rationalized and controlled. The cultural factor appears to be the most important in explaining the essential shades that appear in the perception of different people with respect to time (Hashemzadeh, Ranjbar, Moosavi & Eidi, 2011). However, no matter how much we attach material or physical sides to time, there will always be

people, due to their traditions, their work and life habits, who will live and consequently will manage their time differently.

- Individual factors: each individual uses time according to his personal beliefs, experience and depending on the context in which he lives, the way in which thinking about those around him. For example, many employees that come from various continents to settle in western countries have great difficulty adapting to the pace imposed here, both at work and in their private lives: the change of some habits, ingrained reflexes, raising concern in order to avoid the wastage of time. However, it is vital not only for the organization but for the man who, by doing so, he becomes more efficient, learns more, is appreciated for his professional competence and human value.

- Organizational factors that affect organizational boundaries exist directly or indirectly to time management. Of these, we remember the definition of the exact time, ignoring what needs to be done. In this situation, the conduct of the duties, the intermediate deadlines; the emergence of tensions or conflicts generated by the way of allocating time cannot be precisely determined. Sometimes, in order to avoid these shortcomings, we can establish certain rules: first come, first served; the granting of specific time periods of working together; the use, in

certain situations of an “emergency code”; burden-sharing according to priority projects.

- Social factors: we are currently witnessing an increase in the influence of social factors on the time management. In lots of prosperous states there is an increased concern on the matter of the spare time of each person, which is why institutions frequently organize animated extraprofessional activities.

- Technology has influenced the conduct of the time required for various activities. Today we have diaries, robots, electronic measurement systems of the time allocated to each client, couriers, computer simulations, etc. (Dodd & Sundheim, 2011). Trying to move an idea from the temporal barrier may bring into question the issue of employees’ performance with lightness (background issue of this theme is the efficiency in the workplace).

Performance at work is the result of an employee’s effort, influenced by its abilities and perceiving (understanding) the tasks incumbent upon them. Therefore, the performance can be seen as being in close relation to effort, skills, the employee’s perception on the place and role in the organization. The effort, which results from motivation, refers to the amount of energy (physical and/or mental) used by an employee for performing a task (Thomack, 2012).

The abilities of the employee's personal characteristics are used for carrying out the tasks. They do not fluctuate too much over a short period of time. Perceiving (understanding) the role of the organization "refers to the direction in which the employee believes should channel his efforts and work". In order to achieve an acceptable level of performance, all the three components described above must not exceed an acceptable level. The personality of their manager puts its mark on the company and upon all those who come into contact with it. Time management starts with the management of their own people. The main cause of the failure, both in business and in life, is the lack of a self-imposed discipline. [10]

## 7. CONCLUSIONS

The time management, a controversy and a solution as well, helps us to not put obstacles in achieving our own goals. We as humans have always depended on the perception of time and the complexity of daily activities, the pace of implementation thereof, the requirements of survival in a fierce competitive environment. Time management brings down essentially to managing specific activities and personal life, in general. When we talk about time management we mean, in fact, planning, carrying out and controlling activities in a time-delimited sphere, so that every moment can be used rationally, efficiently and productively in a company.



**Fig. 4.** The Eisenhower time management plan  
 Source: Personal interpretation of the data

In conclusion, time management is a very important skill to be learned and to be mastered in order to have a better lifestyle.

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# THE PROCESS OF CONTINUOUS TRAINING OF MILITARY PERSONNEL IN THE 21<sup>ST</sup> CENTURY

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*Taking into consideration the implications of Romania’s accession to the North Atlantic Treaty Organization, participation in conflicts and strategic missions alongside the Member States, the need to accelerate the process of adapting the forces to the new strategic, operational and tactical realities can be noticed. Considering the central role of the human component in the defense system, the concerns of the decision-makers nowadays focus on the strategic importance of the process of continuous training of military personnel. Thus, we examine in this work the evolution and relevance of the training process of military personnel, the challenges of the 21<sup>st</sup> century, trends in the field and future implications for military personnel, military education institutions and the army as an organization.*

**Key words:** *continuous training; military personnel, challenges; implications; military education institutions.*

## 1. INTRODUCTION

At global level, countries are facing economic, political, social and health challenges, which are marked by the rapid changes in technology and information that characterize the evolution of the 21<sup>st</sup> century. Naturally, Romania’s accession to the North Atlantic Treaty Organization and integration into the European Union were the starting point of the change process of our country, in order to adapt to the new global realities of the security environment

and to the policies of economic, social and political cohesion adopted at the level of the Community.

Keeping these aspects in mind, as the hybrid war is deeply influenced by the integration of the new technologies, such as drones, cyber means and artificial intelligence – changing the approach to the training of military personnel in the Romanian army is a necessity in the face of the emerging threats. Ultimately, this necessity is related to the fundamental objective of the training process: training the

personnel so that when declaring the state of war or engaging in military operations carried out jointly with strategic allies, the Romanian armed forces will meet their tactical, operational and strategic objectives.

In this respect, the first section of the paper examines the evolution of the training process of military personnel. The second and third sections outline some specific aspects of the continuous training of military personnel and the implications of new approaches to military training institutions and missions of the army as an organization. An analysis and a few thematic assumptions as regards the relevance of the specific challenges of the 21<sup>st</sup> century for the continuous training process are addressed in the conclusions.

## **2. BENCHMARKS ON THE EVOLUTION OF THE CONTINUOUS TRAINING PROCESS**

Taking stock of the main benchmarks on the evolution of the continuous training process of military personnel is relevant to the topic of this paper due to the continuous concerns for the development of education institutions in line with the defining trends of force and becoming an army. In this respect, the military specialist Ovidiu Stănică claims that the training of military personnel has followed the changes and challenges of the present

and even of the future, which he later integrated into explanations and theories concerning its adaptation to the new requirements as regards the organization as a whole. (Stănică: 2017, p. 35)

The training process is currently oriented towards transformation, as it is open to influences from all backgrounds, from the national one to the European and Euro-Atlantic ones, thanks to the reforms it has undergone over time. In accordance with the evolution of Romanian education, the training of military personnel was initially based on acquiring the experience of generations, based on methods such as: imitation and observation in conjunction with the training of practical-applicative skills on individual and collective defense lines, the manufacture of weapons or the building of fortifications. In fact, between 1878 and 1914, the training process was provided by: training schools (Stoina and Racovița: 1997, p. 35), proper military schools (Atanasiu, et al. 1972, 1978, p. 16), schools of further training and the Superior School of War (Oprîta, Atanasiu and Atanasiu 1986, p. 25).

As of the interwar period, military education begins to be modernized in structural and functional terms, comprising educational establishments for each of the stages of training or further training of future military personnel – military high schools, military

schools for officers, special schools and schools for military masters and higher education institutions (Gheorghe: 2009, p.134).

In the following period, a series of normative acts that predominated the structure of education in special schools were adopted, among which the following ones are mentioned: the Law on the Army progresses (1924), the Regulation of this Law (elaborated in 1928) and the Law on determination of Army Personnel and Effectives (1932). According to the norms, the mission of schools of further training/special schools was to provide the officers with the knowledge and skills needed in order to perform the function of a company commander, by broadening the technical and tactical horizons. On this basis, in 1932, their names were changed into schools of application, and their graduates were able to get promoted to the next military grades, including to captain, without further studies. At the same time, the place in the class ranking when graduating from the special school would be permanent for the rest of the officer's career, and this had implications for the promotion to the next military grades.

During the communist regime, the paradigm of military personnel training was marked by the ideological reform based on the Soviet model. The rigorous training process was provided by the military

schools dedicated to active officers, by the Military Academy, where course attendance was compulsory, and by the military schools for reserve officers.

Following the fall of the communist regime, after 1991, the training of the personnel was characterized by the transition process in accordance with Romania's socio-economic and political evolution. This manifests itself in the process of equipping the army, in conjunction with the news in the fight and specialized regulations, with the lessons learned from the training of the troops, the commanders and the military education institutions. Moreover, in terms of education, the accession to NATO complained about the need for concern for continuous improvement of curricula, specialized subjects and their judicious correlation over the years of study.

Thus, the current continuous training process shall be completed with the training of the professionals in the context of military and social needs on the one hand and individual career choices on the other hand.

### **3. PECULIARITIES OF THE PROCESS OF COUNTINUOUS TRAINING OF MILITARY PERSONNEL**

In Romania, the military training process is a strategic dimension in the management

of human resources in the armed forces, which influences the professionalization, performance and reputation of the defense system.

According to the personal understanding of the existing norms concerning the vocational training, this is an instructive and educational process focused on the principle of specialization. According to the United States Army doctrine, training is defined as „continuous training and innovatively applied exercises in order to acquire the knowledge, abilities and attitudes required to perform specific tasks” (Greer: 2018). In the Romanian Army, I believe that training is the process of seeking to change the behavior and attitudes of military personnel in such a way as to increase the opportunities to perform military tasks that are specific to the position they are in or they intend to take. Broadly speaking, the process associated with education also incubates the learning valences. Thus, learning is the systematic assimilation of knowledge and skills, i.e. the skills needed in order to optimally perform the duties of the position specific to the specialization. In a narrow sense, education refers to the expansion of overall knowledge, the ability to make decisions and respond appropriately to various challenges.

Generally, continuous training is two-pronged: individual and collective – the latter is designed to facilitate the integration of soldiers into advanced teams. Consequently, I

believe that the approach to training, from this dual perspective, incubates some defining peculiarities compared to the initial training. Firstly, the requirements for continuous training are determined by the results of organizational assessments which show gaps in training and education on the one hand, and by the geostrategic, informational etc. evolution of the international environment, which reflects the preparation needed in order to deal with changes in the architecture of war, on the other hand. Secondly, the achievement of the objectives of the continuous training process is related to the human, financial, material etc. resources made available to enable its implementation.

As such, continuous training involves the development of new skills by strenghtening and broadening the knowledge horizon, in conjunction with the expansion of the skills needed to fill high-complexity positions and to prepare for future training in order to meet the still-emerging needs of the armed forces.

#### **4. IMPLICATIONS FOR INSTITUTIONS OF CONTINUOUS MILITARY TRAINING**

Undeniably, the defining aim of the continuous training process is to prepare the military to carry out missions of the armed forces at the lowest cost in terms of the

national resources involved. Thus, the analysis of the implications that are specific to the current operational environment becomes particularly relevant for the future approach to the training process in military education institutions. Starting from the idea that the army is the body sanctioned by state with the authority to use lethal force, exercised as such by military-identity personnel, then having the skills and expertise specific to the action in hostile environments is the starting point of carrying out the missions of the armed forces. (Woodward and Jenkins 2011). This paradigm is supported by other specialists as well, who promote the strategic importance of vocational training (Miller: 2013), against the background of the considerations that military personnel are the engine of military missions. (O'Hanlon, 2009).

As a result, developing professional skills and competences is significant to the achievement of individual and organizational objectives in the military field.

In this respect, exploring how military personnel need to train and professionalize is the subject of this section. According to the education expert Richard Paul, the key features of the future: "accelerating change and increasing complexity, must be met with changes in the curriculum design and instructions favoring critical thinking" (Reich: 1991). In the same vein, Wayne E. Whiteman, a career officer in the

US Army, anticipated the impact of the transformations on the methods of designing the training process, saying that it should focus on critical thinking and reasoning, to the detriment of memorizing facts and events through courses, at the end of which diplomas are acquired (Whiteman: 1998).

Indeed, this trend already manifests itself in the architecture of the military education system, in order to meet the technological, informational and virtual reality challenges of the future operational environment. What is the impact of such challenges on the army as an organization? How will the continuous training process and military education institutions be influenced? I will continue to address these operational questions below.

In the context of current and future transformations and challenges, the army continues to be characterized by its bureaucratic profile, uniformity, discipline and leadership based on the hierarchy of grades and functions. However, achieving a balance between these traditional features and the ability to adapt to changes in the operational environment will be essential to meet the challenges of the age of technology and information. For example, the current trends regarding the joint training in an allied context reflect the strategic importance of multinational exercises for the training of individual skills and

cooperation and interoperability capabilities of the forces in the planning, organization and deployment of current military operations. Likewise, increasing the weight of operations under the North Atlantic alliance and missions under the auspices of the United Nations calls for a strategic revolution both in terms of structure and doctrine and in the way military personnel are trained. In particular, I believe that the professional training of military leaders will be marked by changes such as: joint or mixed training, specialized education and the development of linguistic and cultural communication skills. Moreover, with the emergence of new capabilities facilitated by technological developments, the integration of digital tools into the training process is a need already recognized at national level. As an example, I will mention the importance of war games in military training. They have evolved into multi-processor systems that use software-specific tools, thus facilitating shaping and simulating military operations in various scenarios (Smith 2009).

These new requirements reveal a new architecture of the military training dimension, with obvious implications for education institutions, which must develop and implement feasible strategies so as to guarantee flexible graduates that are ready to respond adequately to the requirements of their future functions.

In this regard, I believe that transversal skills acquired from the study of non-conventional sciences are also gaining importance (Curran: 2017), with an impact on the formation of efficient teams where the ability to work together develops with the individual's potential to meet the challenges of the current spaces of action. In addition, expert studies conclude that particular attention needs to be paid to the training of the cognitive skills of military personnel, on which self-effectiveness and performance at work depend (Adler, et al. 2015). Thus, providing military personnel with professional and psychological support is particularly important for their success in carrying out their new job-specific tasks effectively.

Clearly, in order to achieve these objectives, both military training institutions and their students face major challenges. Regarding military training institutions, I will mention the following major challenges: building the necessary infrastructure, maintaining permanent contact with new e-learning technologies, training the teaching staff to be in line with the technology, adjusting the curriculum, changing the teaching and learning policies, methods and techniques, motivating students and engaging them in academia. For students, changing the traditional way in which the training process is carried out entails a number of

implications, such as: familiarity with the computerized tools that are specific to education, lack of face-to-face socialization, self-confidence, development of the role of an autodidact and ownership of planning and carrying out activities planned to achieve the desired learning outcomes.

Overall, knowing the students' profile and their "belonging" needs, anticipating the difficulties that they need to overcome and facilitating their access to individual conversations with their trainers and mentors are aspects that influence the result of the process of continuous training of military personnel (Jane Canty, et al., 2020).

From this point of view, I believe that continuous training should not be just the attribute of the military institutions concerned, but a current responsibility in the workplace of both the individual concerned and his hierarchical superior as a mentor. In the reflexive-theoretical plan, the individual concern of being aware of the news in their own field of activity and mentoring facilitate the valorization of knowledge acquisition, thanks to the spores of the abilities of understanding the changes. In the practical-applicative plan, self-teaching and mentoring activities help military personnel to develop their skills, behaviors and professional expertise faster, as benchmarks of military identity,

thus helping to optimize career progression in line with individual aspirations and organizational needs. Thus, this "bottom-up" approach is significant for continuous training which is supported by conversations, feedback and recognition, is an effective way of developing military personnel.

Therefore, the aim to identify the challenges of the 21<sup>st</sup> century on the process of continuous training and the methods of coping with them, is to create an optimal framework for: characterizing the training process of the army as an organization; the present and future design of training institutions so as to provide training at a level appropriate to the skills required in order to conduct military actions in the context of ongoing changes in the security environment and complex operational requirements for professional development and career progression of staff.

As such, the complex training requirements for military personnel are highlighted by the importance of the correlation between successive changes in the military and the overall continuous training process.

## 5. CONCLUSIONS

Considering the importance of the changes and challenges specific to the 21<sup>st</sup> century, I argue that they will be of particular relevance to the training process of soldiers in

general and future leaders for the army in particular. On the one hand, these challenges are the quintessence of the scientific revolution which includes, among other things, concerns regarding technological development, information management, environmental protection etc. Digital tools allow a new approach to the training process. For example, instead of learning from books and manuals about military operations, military leaders have the opportunity to acquire the necessary knowledge and skills by effectively performing the tasks specific to their functions, using their own reasoning generated by critical thinking, not with the help of memorized information.

On the other hand, the army of the 21<sup>st</sup> century must deal with socio-economic and political issues, with its exponential role of protecting relations of national interest, just as natural resources and the territory have been defended in the past. In this respect, I believe that these new roles will make the traditional elements of the armed power more relevant, with a considerable impact on the training of military leaders and other staff. Leaders' awareness of how the scientific revolution and their social, economic and political evolution influence their methods of preparing themselves, will be the key to a successful career and an army capable of responding to the threats of the international environment.

Similarly, the changes and challenges we have discussed have a fundamental influence on the Romanian army and on the approach to the training process of the leaders and other staff that it entails. The Romanian military education is currently an integral part of the national education system. In particular, it develops instruments compatible with the education systems in the armies of NATO States and its mission is to train, specialize and improve military personnel, as well as other internal or external beneficiaries.

Regarding the continuous training of military personnel, we can say that it seeks to train and continuously prepare commanders, staff officers and military and civilian experts, command officers, military leaders, experts in the organizational management and military actions in times of peace and war, sub-officers and military craftsmen specialized in defense and national security sub-areas, engineering officers, experts in the management of integrated technical systems, in the organization and management of military actions and logistics in times of peace and war, capable of integrating the resources available to carry out missions.

In general, current trends point to the need for three-level training. The first one is embodied by university institutions and application

schools designed for institutionalized training by category of armory. The second stage, which is increasingly present in the training of our soldiers in the country, is operational training, carried out through exercises, in the military units or in the virtual system, with the help of war games. The third stage is self-development, led by each individual according to their own development needs. Although the tools, methods and techniques of training are distinct, the fundamental objective is to acquire the knowledge and skills needed to cover the gaps identified at individual and collective level of training.

From this point of view, I believe that continuous training of military personnel must be an individual and organizational priority. Even if the presence of a soldier in the unit is considered to be particularly important at a given time, the analysis between the implications of a vacant position during its participation in training activities and the disadvantages of working with a less qualified person in the context of increasingly complex situations, it is essential for today's military decision-makers.

As such, it is necessary for decision-makers to understand the challenges faced by leaders and other subordinate staff and to identify early methods of intervening systematically and helping them improve their learning and training experience.

Therefore, the process of continuous training of military personnel is influenced by the impact of the scientific revolution and socio-economic and political issues on the missions of the army as an organization. In this respect, the main concerns of military decision-makers will take into account fundamental concepts, organizational doctrine and future trends which are key points of interest in building a continuous training process based on effective practices and topical strategies.

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# MILITARY LEADERSHIP: A BRIEF OVERVIEW OF THEORY AND PRACTICE

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*A decision-maker who has also assumed the role of leader, in the full sense of the word, understands that an organization is alive, breathing and truly developing because of its primary resource: human resources. An organization does not exist without human resources, it does not function and it does not develop without people, it cannot achieve its goals and mission without people. That way it is essential to manage the human resources from the tactical level as well as the strategic level and to develop leaders in accordance with a strategic outlook*

**Key words:** *decision-maker, leader, human resources management, strategic, defense*

### 1. INTRODUCTION

The definition of an organisation derives from its own internal coherence, from structuring and systematisation, from the integrity of processes and process flows. And the fundamental guarantor of these attributes is none other than the leader of the organisation, the person who holds the position of ship commander and whose deep mission is the success of the organisation he leads, its performance and sustainable development, is safe navigation and the certainty of reaching destination regardless of the size of the waves and the storms encountered in its

path. The ship commander is a decision-maker, is a human who has the right competencies to lead, to manage and to administrate all the resources available in order to achieve the organisation goal.

The goal of defense resources management is to achieve an effective allocation of resources from defense field, in order to achieve the nation's national security objectives. The orientation and the management of all resources available towards the established direction, in order to achieve the assumed objectives is achieved by leaders across the full spectrum of decision-making areas.

## 2. THEORETICAL ASPECTS ABOUT LEADERSHIP

### 2.1. Roles of the military decision-maker

People are those who, based on their roles, interact so that the organisation works. For a pertinent organisation of the organisation/company/ministry, first all should be identified the roles that the people who maintain the organisation must assume. However, there are a series of difficulties in identifying roles, difficulties arising from the theoretical limits of explaining the emergence of roles in organisations, but also from the successive modification of the needs to assume roles; at this stage it is necessary to take into consideration and people's abilities to succeed in assuming the identified roles. When decision-makers have a good interpretation of roles, then their activities can be appropriate to the needs and can be functional for the organisation.

Thus, in the literature several approaches have been developed regarding the roles of the decision-maker and the main two directions are: manager/management and leader/leadership. There are theories that consider that decision-maker has and the role of administering of materials and money. And in the military field is define the commander role.

For instance, John Adair, a British academic, the author of the "first" leadership book, *Training for Leadership* (1968) who is internationally recognised as World's first Professor in Leadership Studies at the University of Surrey offers a different point of view regarding the issue of leaders/leadership and managers/management. After many analysis, he concluded that management and leadership are the 2 faces of a coin: the shape fashioned by the characteristic working situation of the group is the management or the leadership as a **role**; in the same time, leadership has another meaning as **attribute**, which is given by the functional skills.

Also, he consider that the most distinguishing quality of a leader is confidence, "*confidence in one's power, and if that confidence is great enough and strong enough it will inspire others, and they will believe in the leader as firmly as he believes in himself, perhaps more so.*" [1] The 17 qualities identified by J. Adair are: ability to make decisions, sense of duty, energy, calmness in crisis, humour, assurance (confidence), and sense of justice, ability to accept responsibility, determination, human element, example, initiative, physically fit, resolute courage, and pride in command, enthusiasm, and loyalty.

Later, because there are a lot of **qualities** needed, and in

certain situation some of them are not priority, he define courage as a representative quality, and some other generic attributes of leaders, such as: enthusiasm, integrity, toughness or 'demandingness', humanity, confidence, humility, and courage.

Also, J. Adair tried to find out what is the group or functional approach and he succeeded to identify three types of group needs. "They are:

1. *the need to achieve the common task;*
2. *the need to be held together or maintained as a working unity;*
3. *the needs which individuals bring into them by virtue of being embodied persons."* [1]

In order to accomplish the three domains of need, he presented the **functions of leadership**, such as: planning, initiating, controlling, supporting, informing and evaluating. Those functions answer to the questions "what you do", as a complement of the question "what you are" whose answer is given by the qualities. The author mention that "function refers to activity demanded by one's position, profession or the like; the proper or characteristic action of a person in a given role. That doesn't mean to say that the designated leader should perform all these functions himself or herself. Indeed the theory suggests that it is impossible. In groups of more than

*three or four people there are just too many actions classifiable under the functions that are The Group or Functional Approach required to meet the requirements of task, team and individual for any one person to do them. But the leader is accountable for the three circles. Taken together these functions constitute the generic role of leader."* [1]

The most widely accepted **functions of management** are given by Koontz and O'Donnel: Planning, Organising, Staffing, Directing and Controlling. Also, there are theories, which I agree, that consider Evaluating as important functions of management or others which include and Motivating as a management function.

Another point of view, given by John Kotter, a prominent professor and writer in the field of business leadership, finds the separate roles of manager and leader complimentary. While the leader sets the direction, vision, strategy and goals for the organisation, the manager executes a system of planning, budgeting and resource allocation to achieve those goals. "The role of the military staff officer is essentially the same as in business. Commander provides the vision and direction for the unit and the staff establishes a system of plans, allocates resources, and implements. The manager organises people for the task, the leader communicates the requirements and end state to the workforce." [11]

According to Daniel Goleman, an American psychologist who helped to develop emotional intelligence (EQ) concept, considers that EQ is essential for leadership. Emotional intelligence is defined as the ability to understand and manage your own emotions, as well as recognize and influence the emotions of those around you. For leaders, having emotional intelligence is essential for success, because a leader who shouts at his team when he's under stress, has different results by a leader who stays in control, and calmly assesses the situation. *Leadership competencies, from the EQ approach are:*

- *self-awareness: emotional self-knowledge, correct self-assessment, self-confidence;*
- *self-management: self-control, transparency, adaptability, ambition, initiative, optimism;*
- *social awareness: empathy, organisational awareness, solicitude;*
- *relationship management: inspiration, influence, training of others, facilitating change, conflict management, team spirit and collaboration. [4]*

The systems approach, which I presented before, and the processual-organic theory can provide a research framework, which attempts to harmonise or unify knowledge in the field of leadership/management/commanding. Therefore, according

with the processual-organic paradigm "*decision-makers acts under the pressures which come from four types of roles:*

roles of managing the processes in organisations and the processes that regulate the relations between organisations in the social organisations that integrate them;

- *roles of managing people in obtaining the expected results through managerial decisions;*
- *leadership roles by acting in influencing people so as to adopt attitudes that decision makers consider favourable to them or the organisation;*
- *roles of evaluator of the situation in organisation in order to identify the needs for corrective interventions or strategic reconsiderations.[3]*

All these roles can be played by the same person at different times and in different situations at the same job, as a decision-maker, only if that person has **all the competences** necessary for each role.

From my point of view, a decision-maker as a manager must have the following competencies: foresight, planning, organization, coordination, control and evaluation, objective. The competencies of a leader are the competencies mentioned on manager, plus the following: vision, strategic thinking, inspires subordinates, autodidact,

self-critical, efficient communication, empathy, a developed self-control of one's emotions, guide people, delegate tasks in accordance with the skills and resources of those to whom they delegate, supports the development of one's own skills, recruits people of character and with real professional skills, develops an organizational culture based on real human and professional values, integrity, impartial, communicate, do not order, do not shout.

As we can see, the actions that should be performed while playing one role or another are different because they derive from different levels of competencies. So, when there is played the role of manager there are necessary a type of competences, especially oriented on the structural and functional area of the organisation, while the leadership role requires in addition, competences and skills oriented on the human, motivational side, which moves all the resources of the organisation.

In the military field, from my point of view, the role of commander, regardless of the level at which he is, tactically, operationally or strategically, it should include both the competencies specific to the role of manager and the competencies specific to the role of leader.

Therefore, if we want a military man or woman to occupy a leadership position, then that

military man/ woman must have a set of competencies specific to the leadership process; in order to obtain and act on these competencies, he or she needs to go through a continuous training process.

## **2.2. Training for leadership**

J. Adair proved, during the time, that leaders does not born and that leadership qualities can be taught. Therefore, he began to identify the qualities of a leader and after that he studied how these qualities can be developed. How can be developed? Through education and training. He moved forward and he defined seven key principles, such as:

- Training for leadership;
- Selection;
- Line managers as leadership mentors;
- The chance to lead;
- Education for leadership;
- A strategy for leadership development;
- The chief executive.

In the following I will detail only the first principle, because this principle contradicts the older assumptions about the fact that leadership is a native, born skill and cannot be learned.

In my opinion, nowadays, this is considerate an outdated thinking, because during the time, the academics proved that leadership can be learn, and they moved even forward and developed different types

of models of training leadership. One of them is presented by J. Adair as a key principle, training for leadership, which represents one of the basic pillars of a successful organisation.

He considers “wise organisations always saw themselves as a hierarchy of three leadership levels: team, operational and strategic. One level is not superior to another in importance – there is no class system. They are different in levels of responsibility but equal in value. Therefore in principle there is no reason why more money should be spent on one level than upon another. Money should flow to the point where it can be used most effectively.” [1]

Another rule which he mentions as mandatory for the effectiveness of the organisation and which I agree, is that in an organisation should never give to a person a team leadership role or position without training. After many researches he find out that younger persons are more likely to be nearer the team leadership end of the spectrum. The reason is that younger people are more opened to both the generic role of leader and the attributes that naturally associate with it. They are more likely to take their people as individuals, dealing with them face-to-face and getting their support. A special attention was put on individuals using their own initiative and ‘owning’ their own self-development.

J. Adair summarize the benefits of training for leadership, presenting a quote of Sir John Harvey-Jones: “How do you know you have won? When the energy is coming the other way and when your people are visibly growing individually and as a group.”[1]

### 3. AN ANALYSIS OF MILITARY LEADERSHIP AT STRATEGIC LEVEL FROM DIFFERENT COUNTRIES

#### 3.1. Defense White Paper of Australia

In 2016 Defence White Paper from Australia are included follow interesting aspects related to leadership:

- at Chapter One: The Government’s Approach to Defence, in order to manage the strategic risk, it is written “Australia must play a leadership role in our immediate neighbourhood” [5]; therefore, they assumed, as a country the role of regional leader in that part of the world;
- at Chapter Two: Strategic Outlook, when are defined the six key drivers that will shape the development of Australia’s security environment until 2035, it is written: “The world will continue to look to the

*United States for leadership in global security affairs and to lead military coalitions that support international security and the rules-based global order* “ [5]; so, they are already used to make analysis starting from the drivers of the issue, from the leadership point of view, even if, at least in this context, the leadership concept is used with the meaning of power, competition and even intimidation;

- at Chapter Five: Positioning Defence for Tomorrow’s Challenges in order to define the international defence relationships, it is written: *“Australia has a long-standing defence cooperation program with **Thailand** in the fields of counter-terrorism, ..., aviation safety and airworthiness, law and **leadership**, and English language training ... Australia’s engagement with the Armed Forces of the **Philippines** and the Department of National Defense will focus on the fields of maritime security, counter-terrorism, law and **leadership**, airworthiness and logistics ... Australia will continue to contribute to the NATO train, advise and assist Resolute Support Mission in*

*key roles, including **providing training and mentoring to develop the future leadership of the Afghan National Defense and Security Forces at the Afghan National Army Officer Academy in Kabul**” [5];*

- at Chapter Six: People, it is written: *“Increased female participation in the Defence workforce, and in senior leadership, will continue to be a focus in order to broaden Defence’s access to the considerable skills and capabilities within the Australian community ... Defence must ensure that our Defence colleges and educational institutions are best equipped to develop the future leaders of the ADF. Specific priorities for the APS are to professionalise the workforce in roles that are critical to delivering and sustaining Defence’s capabilities, and to build greater **leadership capability** in the executive level workforce. At the same time, Defence must operate to the **highest ethical standards in leadership and management for all people in Defence**. This means acting with fairness and integrity, promoting diversity and*

*inclusion, and maintaining a zero tolerance stance towards unacceptable behaviour. The strength of **Defence's leadership model** and its ability to adapt and embrace a more diverse and inclusive culture will be critical to attracting and retaining the workforce it needs for the future ... Accountability for cultural reform will be required across all levels of **leadership** in Defence... The Government, in partnership with the community, will continue to support the ADF cadet program. This personal development **program for young people builds personal skills including leadership and teamwork**, and promotes Defence as a potential career pathway for its participants” [5]*

- at Chapter seven: Reform of Defence it is written: *“As Defence implements the First Principles Review, it will focus on **developing leadership, accountability and behaviours to drive organisational performance** ... The performance of Defence's senior leaders will be measured not only in terms of outcomes delivered but the **effectiveness of their leadership behaviours and***

***alignment with Defence's values.** A unified leadership team, willing to take individual accountability for improving organisational outcomes will be fundamental to Defence's success.” [1]*

As an intermediate conclusion, I could say that Australia has a leadership culture at strategic level, not only in the defence field which is very well detailed and in accordance with the newest theory about leadership.

### **3.2. Doctrine Smart Book of USA**

The Doctrine Smart Book from June 2020 is a concise collection of Army doctrine summaries that reflects current approved doctrine and is prepared by the Combined Arms Center at Fort Leavenworth, Kansas.

From the beginning it can be observed the significance of leadership for the U.S. Army, because at the Contents, in Part One, are listed the combat power: Command and Control, Movement and Manoeuvre, Intelligence, Fires, Sustainment–Transportation and Ordnance, Sustainment–Quartermaster and Logistics, Sustainment–Personnel and Health Services Support, Sustainment–Force Health Sustainment, Protection, Information–Cyber and Electronic Warfare, **Leadership**, Space & Global Ballistic Missile Defense.

Therefore, for The U.S. Army, the leadership is a power, a combat power. So, they developed strategies, regulation, education and training in order to achieve this power of leadership:

- ADP 6-22 Army Leadership and the Profession;
- FM6-22 Leader Development;
- ATP 6-22.1 The Counselling Process;
- ATP 6-22.6 Army Team Building;
- ADRP 6-22. Army Leadership;
- ADRP 7-0. Training Units and Developing Leader;
- Army Leader Development Strategy (ALDS).

### 3.3. Defense White Paper of Japan

In 2020 Defence of Japan White Paper it is included in Part Four: Core Elements Comprising Defence Capabilities, etc. at Chapter One: Human Resource Base that Sustains the Defense Capability is written:

- *“Retired uniformed SDF personnel have excellent abilities in planning, leadership, faculty, cooperativeness, and responsibility gained through their work performance, education and training. Furthermore, they have various qualifications and licenses acquired through*

*their duties and vocational training. Therefore, they are making positive contributions in a broad range of sectors, including manufacturing and service industries, as well as finance, insurance, real estate, and construction industries, in addition to the areas of disaster prevention and risk management at local governments” [6]*

- *“The MOD/SDF has been conducting a variety of initiatives in order to promote work-life balance and the further expansion of the recruitment and promotion of female personnel in a unified manner, such as formulating various plans that include three reforms: (1) working style reform; (2) reform to combine a successful career with childrearing and nursing care; and (3) reform for promoting active engagement of female personnel. In addition, the Committee to Promote Working Style Reform of the Internal Bureau Staff has been discussing and implementing initiatives to promote working style reform and reviewing the process of work under the leadership of the Parliamentary Vice-Minister of Defense.”[6]*

- *“Since FY2017, the MOD/SDF has been implementing educational initiatives, such as message given by the MOD/SDF leaders, seminars, and lecture meetings aimed at raising awareness concerning working style reform and the concept of worklife balance”*[6]
- *“With the National Security Council (NSC) serving as the control tower, as well as with strong political leadership, the Government of Japan will implement national security policies in a more strategic and structured manner through a whole-government approach.”*[6]
- *“Japan has been strengthening its posture under the principle of civilian control of the military. Japan further needs to seamlessly deal with various situations in a coherent, whole-of-government manner by way of swift and pertinent decision-making under even stronger political leadership, which will be assisted by enhanced support mechanism.”*[6]

Analysing the document mentioned, I observed that the terms leader/leadership is used with the meaning of “in charge of” or “responsible for the”. Also, in the chapter Human Resource Base that

Sustains the Defense Capability detailed topics such recruitment, employment, daily education and training, measures aimed at ensuring effective use of human resources through effective use of human resources, improvement of living and work environment and treatment, dealing with retirement and re-employment of SDF personnel.

### 3.4. Defense White Paper of Romania

In the 2020 Defence Paper of Romania, we observe that it is also included one sub-chapter with Human Resources Management, but in Chapter Four: Defence Resources Integrated Management Policies. There is written:

- *“The establishment, development and maintenance of skills are carried out by the directors Major Programs, taking into account the specific requirements and actions comprising elements of doctrine, organisation, training, endowment, **leadership**, staff, infrastructure and interoperability, according to the law”* [11]
- *“The management of the military education system will follow the change of the training paradigm, by directing the resources towards the training and professional **development***

*of the leaders, fighters and specialists capable of acting on the continuous changes in the operational environment with the professional skills necessary to carry out missions now and in the future". [11]*

Regarding Human Resources Management, there are established the main objectives, such as:

- human resource planning in correlation with strategic objectives of defense;
- ensuring quality human resources;
- strengthening the status of military personnel;
- modernisation of the military education system;
- increasing quality of life of personnel.

Studying the document mentioned, I observed that when referring to the leadership process, the concept of manager/management is used more than the concept of leader / leadership.

#### 4. CONCLUSIONS

Considering the importance of the leaders, as decision-makers, in defence resources management field, it is necessary and mandatory their continuous education and training, starting from the tactical level, till the strategic level. How can we do this? By including in HR planning, a leadership development program

starting from recruitment, continuing with the selection criteria (which should include the minimum skills necessary to train leaders), continuing with education and training specific to leadership (inclusion of leadership courses aimed at training and development of skills of leader); promotion to certain management positions only after completing the training stages and after an evaluation of the leadership competencies; granting compensations and benefits in accordance with the results of the application of leadership competencies.

What we have? In order to develop a functional program, I could say that we already have theoretical landmarks, we have access to successful models implemented at international partners, we have high-performing educational institutions, we have quality staff and we have and a few leaders, in the complete form of the word, with full set of competencies.

What we don't have? From my point of view, we don't have continuity and mandatory training, we do not have the assessment of leadership competencies before holding a leadership position and we do not have an implementation of compensations and benefits based on measurable results.

In this paper I did not intend to develop a leadership training and development program in the

Romanian Army, but I wanted to emphasise the correlation between leadership and performance of a system, and the need to reorient educational programs in leadership to interdisciplinary theories models and to align them with the existing models of leaders development in some partner states, so that the leadership becomes part of the culture of the Army.

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# VISION OF THE WORLD MARITIME AXIS OF INDONESIA AS A MARITIME COUNTRY IN ALFRED THAYER MAHAN'S PERSPECTIVE

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*The economic development of Indonesia and the region has an impact on national maritime security. With these conditions, developments and challenges in the maritime aspect, Indonesia has outlined a policy on the vision of the World Maritime Axis. This vision is a consequence of being a maritime nation with an area that is mostly ocean, as is the policy of Alfred Thayer Mahan (A. T. Mahan). The purpose of this paper is to provide an analysis of the relationship between the vision of the World Maritime Axis (WMA) and the concept of maritime strategy from A.T. Mahan so that it can be seen the relevance of this strategy to the development of President Joko Widodo's World Maritime Axis (WMA) Vision. Based on the results of analysis, the development of the World Maritime Axis (WMA) Vision is relevant to Alfred Thayer Mahan's maritime strategy. The relevance, among others, is that Indonesia is between two continents in the world, namely the Asian continent and the Australian continent; Indonesia is also the largest archipelagic country in the world with a very wide maritime area; Demographic bonus is a condition where the productive age population is more than the non-productive age; History records that the Indonesian people have long controlled sea shipping lanes with a fairly formidable fleet; The vision and mission of the government of President Joko Widodo have the ambition to make Indonesia the world's maritime axis.*

**Key Words:** *Relevance analysis, Maritime State, A.T. Mahan, Vision of the World Maritime Axis (WMA).*

## **1. INTRODUCTION**

The Asia Pacific is now a region in the world that is predicted to be part of the great history of world politics and economics in the 21st century (Rumley, 2005). This dynamic can be seen from the increasing number of New Emerging Countries (NEC) that have sprung up. The rise of the Asian economy is still being spearheaded by two countries, namely China and India (Valli & Saccone, 2015). Both countries have the largest human resources and have the potential to be the largest markets in the world. Coupled with developments in Southeast Asia, especially Indonesia with the strength of its natural resources which are supported by the largest population. Connectivity in this area continues to increase and contributes to regional economic growth.

In the global trends report 2030 the map of the strength of the countries in the world will experience drastic changes in 2030 (Phillips, 2008). Asia will pass North America and Europe in terms of global power, mainly based on GDP, population size, military allocation, and technology investment (Espas, 2011). In this projection, Indonesia is seen as one of the countries that will have emerging power in 2030 (McKinsey, 2012).

The economic development of Indonesia and the region has an impact on national maritime security. Indonesia as one of the ASEAN

countries with the largest sea area makes this water area a very important role in the connectivity mode in the Asia Pacific (Heiduk, 2016). With its position on strategic sea trade and transportation routes, Indonesia has challenges in managing maritime security which includes various dimensions including the dimensions of defense and security. (Manurung, 2016).

In facing these developments and challenges in the marine aspect, Indonesia has outlined a policy on the vision of the World Maritime Axis. This vision is a consequence of being a maritime nation with an area that is mostly ocean, as the policy of A. T. Mahan. This study aims to provide an analysis of the relevance of Indonesia's world maritime axis vision from the strategic perspective of Alfred Thayer Mahan. This study uses a comparative analysis approach using expert opinion consisting of three doctoral-level people. This research is expected to provide benefits in analyzing the perspective of world maritime strategy. This research is also expected to explore the historical values of Alfred Thayer Mahan's strategy for the development of Indonesia's maritime aspects.

There are several studies as references, including research on Alfred Thayer Mahan's theory of Sea Power to analyze types of policies to actualize the idea of the world maritime axis. (Hudaya &

Putra, 2017). Research on evaluating the idea of Indonesia as a global maritime axis in restoring reputation in Southeast Asia (Ali & Sulistiyono, 2020). Research on Indonesia's implementation in improving its image as a maritime country among IORA member countries (Indrayani, et al., 2019). Exploration of the key components of the world maritime axis concept and the challenges facing each component (Sambhi, 2015). Alfred Thayer Mahan's ideas in building and developing maritime Japan (Bose, 2020).

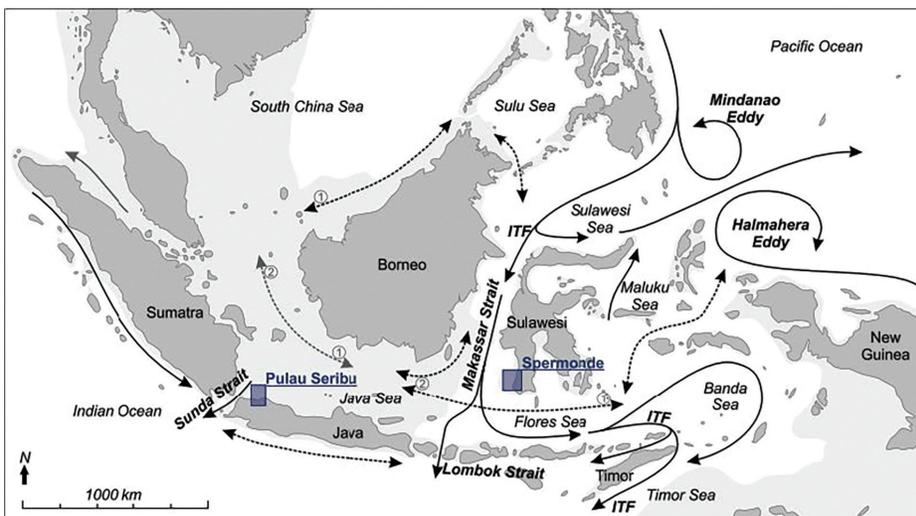
This research consists of several parts. The second part discusses the literature review consisting of the function of the sea, maritime security, the vision of the world maritime axis, Alfred Thayer Mahan's Theory. The third part describes the analysis of the world maritime axis and its relevance to the theoretical perspective of

Alfred Thayer Mahan. The fourth part describes the conclusion of the manuscript.

## 2. LITERATURE REVIEW

### 2.1. The Function of the Sea for Indonesia

Indonesia is the largest archipelagic country in the world with a very wide maritime area with a coastline of about 81,000 km (Astor, et al., 2014). Indonesia has more than 17,000 islands and its sea area covers 5.8 million km<sup>2</sup> or about 70% of the total area of Indonesia (Akhira, et al., 2015). Indonesia's marine area consists of 3.1 million km<sup>2</sup> of sovereign sea area and 2.7 million km<sup>2</sup> of the Indonesian Exclusive Economic Zone (ZEEI). From these data, it can be calculated that Indonesia's marine area is 64.97% of the total area of Indonesia (Lasabuda, 2013).



**Fig. 1.** Map of Indonesia.  
(Rosa Maria van der Ven, et al., 2021)

The function of the sea for Indonesia can be divided into 2 parts, namely vital functions that affect the existence of the Unitary State of the Republic of Indonesia and non-vital functions. The sea in Indonesia has four vital functions that can affect the existence of the Unitary State of the Republic of Indonesia, including: (1) the sea as an area of national sovereignty, (2) the sea as a resource and ecosystem, (3) the sea as a means of transportation, social and cultural contacts, (4) The sea as a means of defense and security (Hartono, 2009).

These four functions are existential functions for the existence of Indonesia, which is based as an archipelagic country within the framework of the Unitary State of the Republic of Indonesia, without the sea, the Unitary State of the Republic of Indonesia will never exist. These four vital functions need to be instilled in building a maritime state in regulating the interests of state administration in Indonesia.

## **2.2. Maritime Security**

Maritime security is strongly influenced by the actions and patterns of interaction of the actors who are members of it. These actors include not only states but also non-state actors, where the existence of these actors is currently increasing the intensity of maritime security.

The concept of maritime security lies between two different interactions of thought, namely between groups that use traditional frameworks of security and groups that use non-traditional frameworks (Setiawan, 2017). Traditional groups tend to limit the concept of security (de-securitization) while non-traditional groups tend to expand it (securitization).

Maritime security has also expanded not only the concept of sea defense against military threats from other countries but also includes defense against non-military threats, including protection of nature conservation, trade routes, eradication of illegal actions at sea, and others. Maritime security is not only concerned with law enforcement at sea, but maritime security in the broadest sense is also that the sea is an area that is safe for use by users and free from threats or disturbances to various marine use and utilization activities, namely 1) A sea that is free from the threat of violence; 2) Seas that are free from threats to navigation; 3) Sea that is free from pollution and destruction of ecosystems; 4) A sea that is free from the threat of lawlessness.

In identifying the concept of maritime security according to Christian Bueger three things must be considered, namely (1) the maritime security matrix, (2) a securitization' framework that provides a means to

understand how different threats are included in maritime security, and (3) theory of security practice which aims to understand what actions are taken in the name of maritime security (Bueger, 2015).

Through the maritime security framework, an entity can be mapped on how to formulate maritime security in four dimensions, namely national security, economic security, human security, and the maritime environment. The dimension of national security rests on a traditional perspective that views national security as an effort to protect the sustainability of the country so that sea power, represented by naval forces, is the dominant force related to maritime affairs. Thus, in this dimension maritime security is identical or related to the use of naval power.

### **2.3. The Vision of the World Maritime Axis President Joko Widodo**

Indonesia is the largest archipelagic country in the world that has the potential to become the World Maritime Axis. The World Maritime Axis aims to make Indonesia a large, strong, and prosperous maritime country by restoring Indonesia's identity as a maritime nation, safeguarding maritime interests and security, empowering maritime potential to realize Indonesia's economic equality.

Enforcement of the sovereignty of the maritime territory of the Republic of Indonesia, revitalization of marine economic sectors, strengthening and development of maritime connectivity, rehabilitation of environmental damage and biodiversity conservation, as well as increasing the quality and quantity of marine human resources are the main programs in President Jokowi's administration to realize Indonesia as the world's maritime axis (Marsetio, 2015).

Indonesia, which is in the middle between the Indian Ocean and the Pacific Ocean, must become the World Maritime Axis to bring prosperity to the Indonesian people through regional and international cooperation. To achieve this, President Joko Widodo issued five development agendas that will support Indonesia's process towards the World Maritime Axis. (1) Rebuilding maritime culture, (2) safeguarding and managing marine resources, (3) prioritizing infrastructure development and maritime connectivity, (4) maritime diplomacy, (5) building maritime defense forces (Marsetio, 2014).

As the largest archipelagic country in the world, Indonesia should have a good maritime strategy. This includes economic, social, cultural, political, security and defense aspects. To be able to guarantee national interests at sea,

control over the oceans (sea control) is an absolute prerequisite in the modern maritime era. Sea control is the ability to control the sea area and prevent opponents from using the area for their benefit. Control of the sea itself is closely related to the sea power owned by a nation. Seapower can be interpreted as a country that has extraordinary naval power. Seapower also means the ability of a country to use and control the sea (sea control) and prevent opponents from using it (sea denial) (Marsetio, 2014).

#### **2.4. Alfred Thayer Mahan's Maritime Strategy**

Alfred Thayer Mahan, a United States Naval Officer, in his book „The Influence of Sea Power upon History” put forward the theory that sea power is the most important element for the progress and glory of a country, which if these sea powers are empowered, it will improve the welfare and security of a country. On the other hand, if these sea powers are ignored, it will result in losses for a country or even bring down the country. Later on, Mahan's theory became the basis for the maritime strategy of the big countries to achieve the ideal maritime state. Mahan formulated six characters that are the conditions for a potential country to develop sea power. The six characters are (Mahan, 1890):.

##### **a. Geographical position.**

The geographical position is referred to as the most significant condition. There are two important aspects of geographic location. First, the location of a country facing many seas with good communication between the parts. Second, the location of a country in the form of an archipelago in front of a continent or mainland, so that it functions as a fortress on the mainland.

##### **b. Physical conformation.**

According to Mahan, the location of a country in the form of an archipelagic state with beaches that are easily accessible from the interior makes the population able to interact directly with the outside world. However, this ease of access makes it easier for the enemy to reach the interior of the islands.

##### **c. The extent of territory.**

Mahan explained that there is a relationship between the length of the coastline and the ability of a country to maintain territorial sovereignty in times of war. Each region has important points in determining strengths or weaknesses in the scope of defense. Long coastlines of a country tend to be more difficult in forming a defense strategy than countries with shorter coastlines.

##### **d. The number of population.**

In this case, the priority population is quantity, where an abundant population it will provide capital for human resources in the military field, especially in the navy.

e. National character.

Countries that have a high love for their homeland and pride in the greatness of their nation’s history can be a force in building a more advanced country.

f. Character of government.

Government policies of a country, utilization of population density, and attitudes towards neighboring countries. Countries that have strong governments and firm policies will provide benefits to become a force in the change from developing countries to developed countries.

### 3. RESULT AND DISCUSSION

#### 3.1. Strategy Relevance of A.T. Mahan towards the Vision of the World Maritime Axis (WMA).

Jokowi’s leadership era after being elected President of Indonesia brought a new spirit. With confidence that prioritizes progress and development in all fields, Jokowi continues to rekindle the spirit that Indonesia can compete internationally. Indonesia, which is at the crossroads of world trade, greatly benefits from the existence of

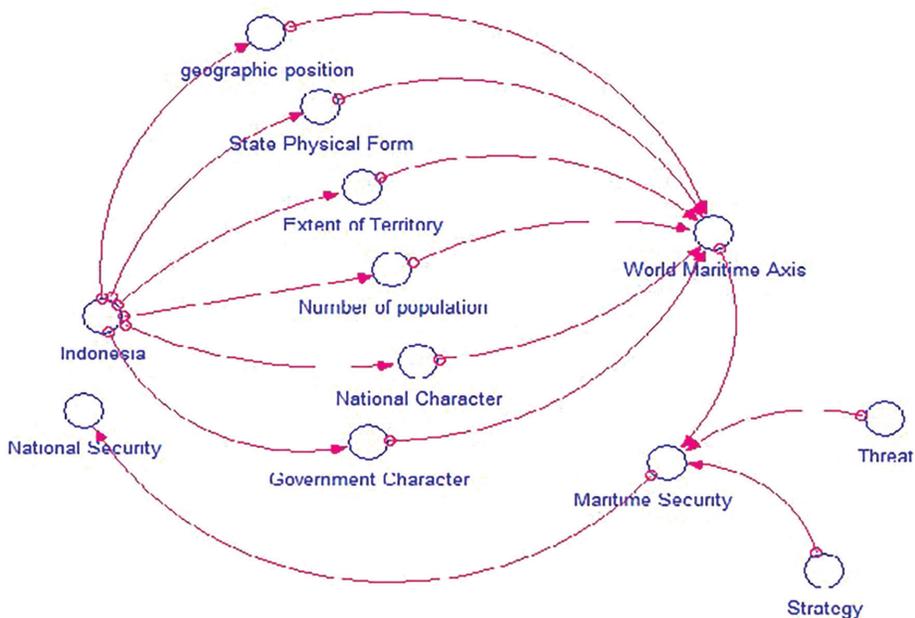


Fig. 2. Relevance of Analysis A.T. Mahan & World Maritim Axis (WMA).

industries that require access to the Indonesian seas. With Indonesia's strategic position, it is an advantage in international businesses that need Indonesian sea access. However, behind its potential, Indonesia faces many challenges including challenges from pirates at sea, security at sea, the flow of immigrants who use sea access. All of this relies on Jokowi's diplomatic steps as the president of the Republic of Indonesia who must take a smart and synergistic approach to development with the vision and mission of his government.

The government's mission to achieve this vision includes: (1) Realizing national security capable of maintaining territorial sovereignty, supporting economic independence by securing maritime resources, and reflecting Indonesia's personality as an archipelagic State; (2) Realizing an advanced, sustainable, and democratic society based on the rule of law; (3) Realizing a free-active foreign policy to strengthen identity as a maritime nation; (4) Realizing the quality of life of Indonesian people who are high, advanced, and prosperous; (5) Realizing a competitive nation (6) Realizing Indonesia as a maritime country that is independent, advanced, strong and based on national interests; and (7) Creating a society with personality in culture. Three of the seven missions are related to maritime affairs and Indonesia's position as an archipelagic country.

### **3.2. The Relevance of Geographical Position toward the Vision of the World Maritime Axis (WMA)**

According to its geographical position, Indonesia is located between two continents in the world, namely the Asian continent and the Australian continent. Besides being flanked by two continents, Indonesia's geographical position is also flanked by the two largest oceans in Asia, namely the Pacific Ocean and the Indian Ocean. This position certainly benefits Indonesia in its cross position as a world trade transportation route where 40% passes through these waters. This gives a fairly high relevance of Mahan's strategy to the World Maritime Axis Vision (WMA). This condition also supports Indonesia's economic development, especially in the exclusive economic zone (EEZ) which stretches as far as 200 miles from the Indonesian coastline.

Indonesia is influenced by various cultures and civilizations from foreign countries. The existence of sea lane traffic resulted in many foreign ships anchoring to Indonesia. This causes the process of mixing ethnic groups and cultures. In the social and political fields, Indonesia easily relates to other nations and can participate in world politics. The influence of the cross position also makes Indonesia a shipping and international trade route that is

traversed by many countries in the world. Due to its strategic location, Indonesia can establish good relations with surrounding countries. This is considered capable of increasing trade activities and increasing the country's foreign exchange sources.

### **3.3. The Relevance of the Physical Shape and Area of the Country toward the Vision of the World Maritime Axis (WMA)**

Indonesia is also the largest archipelagic country in the world with a very wide maritime area. The coastline is about 81,000 km. Indonesia has more than 17,000 islands and its sea area covers 5.8 million km<sup>2</sup> or about 70% of the total area of Indonesia. Indonesia's marine area consists of 3.1 million km<sup>2</sup> of sovereign sea area and 2.7 million km<sup>2</sup> of the Indonesian Exclusive Economic Zone (ZEEI). This physical condition requires the state to manage defense, transportation, and communication at sea.

As a consequence of this favorable geographical location, Indonesia has three Indonesian Archipelagic Sea Lanes (ALKI) which become sea lanes for international shipping flows that pass through Indonesian waters. In addition, of the 39 straits that are spread over the territorial waters of Indonesia, 4 of them are choked points (out of 9 choke points in the world). The magnitude of the marine

economic potential and the vast area of the country that is very profitable should be the basic capital in building the shared vision of all stakeholders, to make the development of the Indonesian marine economy the main paradigm to accelerate the realization of national economic independence.

### **3.4. The Relevance of Population toward the Vision of the World Maritime Axis (WMA)**

Demographic bonus is a condition where the productive age population is more than the non-productive age. Indonesia itself is predicted to experience the peak of the demographic bonus in 2030. Opportunities that can be exploited with the emergence of the Demographic Bonus period are the reduced number of unemployed, increased competitiveness of the nation, forming a creative and innovative golden generation, better economic growth, easing the burden of life, more productive and quality human resources, and more open opportunities for Indonesia to become a developed country.

The booming productive workforce is a golden opportunity for Indonesia in carrying out the recruitment of personnel forces to fill the limitations of the defense equipment crew. However, to realize the demographic bonus is not as easy as turning the palm, because there needs to be a high commitment

from the government in this case as a policy-holder. human capital (subject) and human resource (object) must be the central point in sustainable population development in Indonesia which covers the entire human life cycle (life cycle approach). What needs to be considered in discussing population integration and development is that residents are not only treated as beneficiaries of development outcomes but also as subjects who actively participate in development.

### **3.5. The Relevance of the Nation's Character to the Vision of the World Maritime Axis (WMA)**

History records that the Indonesian people have long-controlled sea shipping lanes with a fairly formidable fleet. This is evidenced by the findings of prehistoric and historical sites. Since the 9th century AD, the Indonesian people have sailed across the seas to the west of the Indian Ocean to Madagascar and east to Easter Island. In the era of the Sriwijaya Kingdom, Majapahit to Demak, the archipelago emerged as a great power that was respected by countries in Asia and the world. As a strong maritime empire in Southeast Asia, Srivijaya (683-1030 AD) had based its royal politics on controlling shipping lanes and trade routes and controlling strategic areas that were used as naval power bases.

On the other hand, Indonesia is known as a nation with high militancy. The Dutch and Japanese occupations were not able to make the children of the nation shrivel in their efforts to repel the invaders. Until now, this condition is still embedded, where in looking for or forming the character of the state army there is no need to make a military service like some developed countries, in the opening of the registration of TNI AL soldiers both at the cadet level to the enlisted always exceeds the set quota.

### **3.6. The Relevance of the Character of Government to the Vision of the World Maritime Axis (WMA)**

During his tenure, President Joko Widodo had ambitions to make Indonesia the world's maritime axis. This vision was emphasized by the President in his speech at the 9th East Asia Summit (EAS) on November 13, 2014, in Nay Pyi Taw, Myanmar. President Jokowi explained five main pillars that will make Indonesia realize its dream as the world's maritime axis. Pillar (1) Rebuilding Indonesia's maritime culture; (2) Committed to maintaining and managing marine resources with a focus on building seafood sovereignty through the development of the fishing industry by placing fishermen as the main pillar; (3) Commitment to encourage the development of maritime infrastructure and connectivity by

building sea highways, seaports, logistics, and shipping industries, as well as maritime tourism; (4) Maritime diplomacy that invites all Indonesian partners to cooperate in the maritime sector; (5) Building a maritime defense force.

#### 4. CONCLUSIONS

The economic development of Indonesia and the region has an impact on national maritime security. In facing these developments and challenges in the marine aspect, Indonesia has outlined a policy on the vision of the World Maritime Axis. This vision is a consequence of being a maritime nation with an area that is mostly ocean, as the policy of A. T. Mahan. Based on the results of research analysis, the development of the World Maritime Axis Vision (WMA) is very relevant to the maritime strategy of Alfred Thayer Mahan. The relevance, among others, is that Indonesia is between two continents in the world, namely the Asian continent and the Australian continent; Indonesia is also the largest archipelagic country in the world with a very wide maritime area; Demographic bonus is a condition where the productive age population is more than the non-productive age; History records that the Indonesian people have long controlled sea shipping lanes with a fairly formidable fleet; The vision and mission of the government of President Joko Widodo have the ambition to make Indonesia the world's maritime axis.

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# ANALYSIS OF CRITICAL FLIGHT REGIMES OF UNMANNED AERIAL VEHICLES (UAVS)

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*The aerodynamics of lifting surfaces has undergone a significant evolution determined both by conceptual perspective and by the materials used and related technologies. Accelerating this evolution was also possible due to the use of numerical modeling tools that offered and still offer computational speeds that were not possible a century ago. The constructive concepts of unmanned aerial vehicles (UAVs) offer complex aerodynamic approaches in terms of flight regimes, providing research opportunities on design and manufacturing limitations with direct effects on flight safety.*

*The article wants to highlight critical flight from the perspective of using a freeware tool. The 2D aerodynamic analysis cases of the aerodynamic and 3D profiles of the simple lifting surfaces offer a perspective on the calculation possibilities both through the multiple case studies offered and the expressed results.*

**Key words:** UAV, aerodynamic analysis, XFLR5, critical regimes, flight instability

## **Symbols and acronyms**

$C_{m_\alpha}$ $C_{n_\beta}$ $C_{l_\beta}$	- derivatives of static stability	$C_z, C_x$	- aerodynamic coefficients
$\alpha$ , AOA, alpha	- angle of attack	$C_p$	- pressure coefficient
$S$	- lifting surface	$b$	- span
$AR$	- aspect ratio	$c$	- airfoil chord
$MAC$	- main aerodynamic chord	$l$	- length
$u_o$	- perturbation speed	$\Omega$	- rotation rate

## 1. THEORETICAL ASPECTS

### 1.1. Introduction

The maneuverability of a UAV is limited, outside these limits the UAV is in the area of critical flight regimes (uncontrollable regimes with loss of stability) where the actions of UAV operators may prevent or cause the development of instability depending on the flight mode (assisted or free/acrobatic). Due to external disturbances or the desire to increase the maneuverability of an aircraft, it inevitably results in entering unstable regimes where aerodynamic characteristics are seriously affected, critical regimes or unstable modes of movement being serious safety challenges, [1, 2, 3, 4].

Extreme situations are possible in flight due to external causes, for example: gusts, poor piloting, the aircraft may move to critical or supercritical angle of attack, moments when there are variations and changes of direction of forces

and aerodynamic moments which can lead to flight incidents. Cases of loss of static stability are defined by the three derivatives of static stability ( $C_{m_\alpha}, C_{n_\beta}, C_{l_\beta}$ ), and which depend on the flight regime of the aircraft, so that in some flight regimes there is a significant decrease in static stability, sometimes leading to complete loss of its.

According to the literature [4, 5] all critical regimes can be divided into two categories depending on the dangerous behavior of the airplane. The first category of critical regimes appear when the margin of stability is performed and unstable modes of movement begin to develop (slow or sudden loss of stability) where we have an evolution on a controllable or uncontrollable trajectory, such situations are speed limit flights or high-speed maneuvering flights. The second category is stable flight regimes with supercritical values of parameters (AoA and rotation speed), such as evolutions in autorotation or inertial rotation, see figure 1.

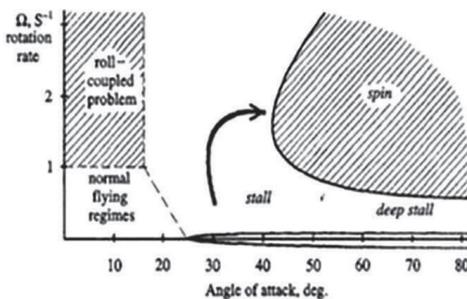


Fig. 1 Areas of critical flight regimes

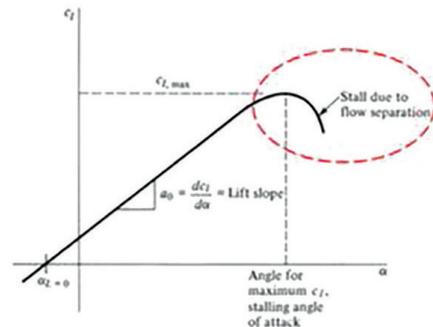


Fig. 2 Critical angle of attack ( $\alpha$ )

The current state of research [6, 7, 8] reveals many of forms of loss of stability (forms dependent on the flight speed limit), as follows: sudden increase in angle of attack (AoA) due to the nonlinearity of the moment of dive; self-oscillating movement at large angles of attack, figure 2 (due to detachment of the boundary layer from the upper surface); self-harness; divergent increase of the lateral tilt angle due to the asymmetrical rolling moment (eg asymmetric propulsion or very high AoA); divergent increase of the sliding angle due to aperiodic instability or asymmetric aerodynamic moments; oscillating roll and turn movements at high angles of attack; loss of stability in the maneuvering flight on the trajectory. Here are some characteristic situations of static instabilities, of changing the signs

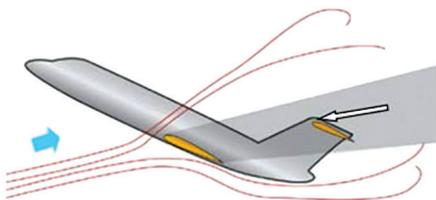


Fig. 3 Horizontal tail top

of the three derivatives, which necessarily determines the loss of the (dynamic) stability of the plane, [9].

## 1.2. Cases of loss of flight stability

### 1.2.1. Longitudinal instability (self-increase pitch moment)

Longitudinal instability in relation to the angle of attack (AoA) - commonly referred to as self-increase pitch moment, can occur in some high-speed aircraft in the field of transonic velocities; however, most often, self-increase pitch moment takes place in flights with high angles of attack, see figure 4. The curve  $C_m = C_m(\alpha)$  of an airplane predisposed to self-increase pitch moment has the appearance represented in figure 3, [9].

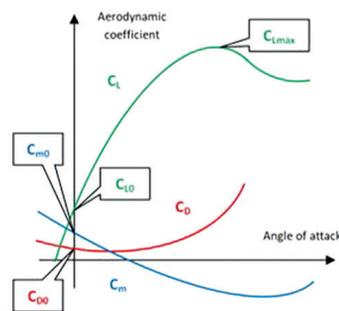


Fig. 4  $C_m$  versus AoA ( $\alpha$ ) for self-increase pitch moment

the slope of the curve is negative, we have:

$$C_{m_\alpha} = \frac{\partial C_m}{\partial \alpha} < 0 \tag{1}$$

The airplane is statically stable longitudinally, which also implies a dynamic stability in relation to the angle of attack. At high AoA, however, in the vicinity of critical AoA, the slope of the curve changes its sign,  $C_{m_\alpha} > 0$  and The plane becomes unstable. The airplanes most exposed to self-increase pitch moment at high AoA are those that have the horizontal tail top, see figure 3.

In this case, due to the huge deflection of the current near the horizontal tail, its drag force becomes significant in relation to the lift and, consequently, the moment of pitch of the horizontal tail to the aircraft mass center can become destabilizing. In the usual cases of low flight incidences, only the pitch of the horizontal tail lift was taken into account:

$$\Delta C_m = -\vec{V} C_{z_2} \quad (2)$$

where  $V$  – tail volume

$C_{z_2}$  – lift coefficient of the horizontal tail

at high AoA, in the above conditions, the contribution of the drag force of the horizontal tail must be taken into account:

$$\Delta C_m = \frac{Z_2 S_2}{CS} C_{x_2} - \frac{l S_2}{cS} C_{z_2} \quad \text{where} \quad l \frac{S_2}{cS} = \vec{V} \quad (3)$$

where  $S$  – wing surface

$S_2$  – horizontal tail surface

$Z_2$  – distance on  $O_z$  axis) for neutral point of the horizontal tail

$C_{x_2}$  – horizontal tail drag coefficient

The phenomenon is more accentuated in airplanes with reduced aspect ratio of wing, given the rapid increase of the deflection of the downstream current at high AoA in the case of these wings.

Static instability leads to loss of stability of the fast mode of longitudinal disturbing motion, as this is a short-period oscillating mode, the only sure measure of correction is to equip of aircraft that have this tendency with automatic pitch stabilizers (autopilot).

Figure 5 shows numerical benchmarks of the pitching moment coefficient for a number of aircraft types, and Figure 6 shows the pitching moment coefficient values of the building components of an aircraft.

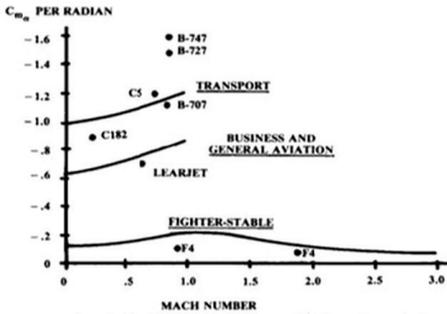


Fig. 5 Typical pitching moment coefficient for airplanes main categories, [10]

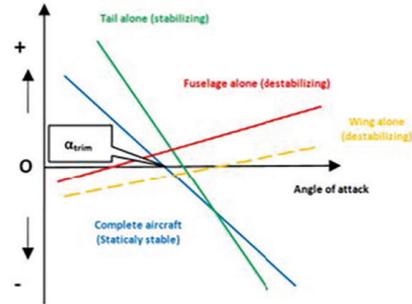


Fig. 6 Pitching moment coefficient values of the building components, [18]

1.2.2. Lateral stability

a. **Yaw instability.** Ensuring static a yaw stability was not a critical design issue as long as aircraft flight speeds were moderate (subsonic or supersonic speeds). The simple provision of a vertical tail of a surface not too large, arranged behind the aircraft mass center, achieved the condition of static yaw stability,

$C_{n\beta} > 0$ , for all flight speeds interval, [9].

For supersonic aircraft, however, with the increase in flight

speed, some significant sidesleep flight began to be reported, which in some cases developed unstable lateral movements. The phenomenon is explained by the loss of rotational stability that can occur at high supersonic speeds due to the reduction of the stabilizing moment of the vertical tail in relation to the destabilizing moment of the fuselage (or other elongated hulls outside the aircraft). This trend is more pronounced in aircraft with large elongated fuselages. Indeed the yaw coefficient of stability:

$$C_{n\beta} = \frac{S_v l_v}{Sb} a_v \left( 1 - \frac{d\sigma}{d\beta} \right) - \frac{2kQ}{Sb} \tag{4}$$

- where *S* – wing lift surface
- b* – span wing
- S<sub>v</sub>* – vertical tail surface
- Q* – fuselage volume
- K* – correction factor
- σ* – lateral air deflection
- β* – sidesleep angle

The coefficient of yaw stability (rotation) is positive as long as the contribution of the vertical tail (the first term in the equation 4) is higher in mode than the contribution of the fuselage (the second term in the equation 4). But with the increase of flight speed  $a_v$  decreases and as a result decreases and  $C_{n\beta}$ , being able to become negative:

$$a_v = \frac{\partial C_z}{\partial \beta} \quad (5)$$

A typical aspect of the variation of the coefficient of the static yaw stability with Mach number is presented in figure 5. The decrease of the static yaw stability is a characteristic phenomenon and the flight at high AoA, as the

coefficient of static yaw stability  $C_{n\beta}$  decreases with increasing AoA. The phenomenon is more pronounced in airplanes with a parasol wing, because the detachments downstream of the wing affect to the vertical tail, which is the main element of the airplane lateral stability, see figure 7.

**b. Roll/lateral instability.**

The condition of static roll/lateral stability is ensured by a negative

dihedral effect,  $C_{l\beta} < 0$ . During the low AoA of flight, the dihedral effect decreases slowly and linearly with increasing AoA, but for high AoA there is a sudden, destabilizing (positive) variation of the dihedral effect, more pronounced for swept wings aircraft.

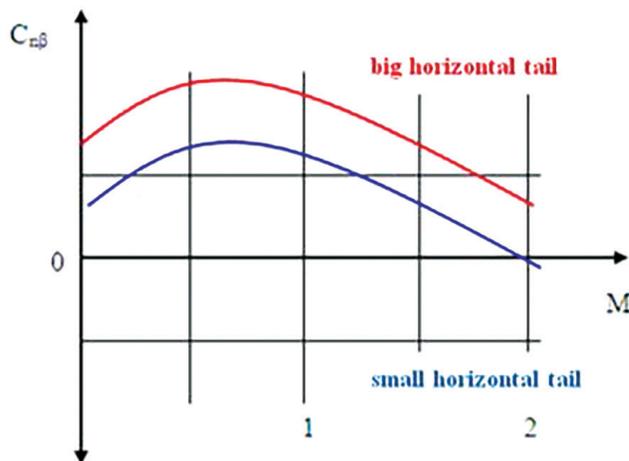


Fig. 7 Yaw stability coefficient versus Mach number

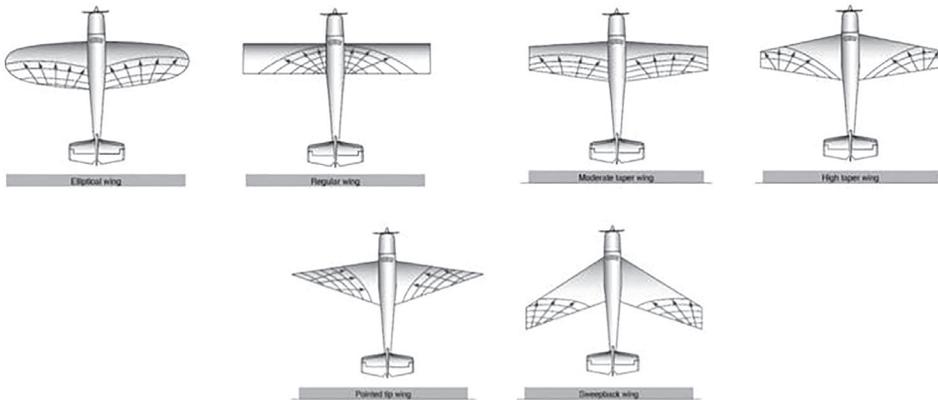


Fig. 8 Boundary layer areas

Figure 8 shows this dependence of the dihedral effect on the AoA. This variation is determined, among other things, by the starting points of the boundary layer, for the straight wing, with low trapezoid, the detachments of the boundary layer begin when the wing is embedded in the fuselage, while on the arrow wing the detachments begin at the extremities.

As a result, the loss of roll stability occurs faster in aircraft with an swept wing. The loss of roll stability, which can occur at high AoA, is extremely dangerous in flights near the ground takeoff and landing - but also in any flight regimes because it can lead to the engagement in aircraft spin flight (see figure 9).



Fig. 9 Roll coefficient stability versus AoA ( $\alpha$ ), [9]

## 2. STABILITY ANALYSIS METHOD

XFLR5 freeware applies the method proposed in [15] and the theoretical approach in [16], with this type of analysis, the longitudinal and lateral dynamics are independent and are evaluated separately. According to [12] the software analysis is performed according to: reference axes (solid/vector, geometric and stability); position coordinates; kinetic conditions/rotation vectors and flight conditions. The stability derivatives are calculated according to the equilibrium conditions, and the terminology used refers to the angle of attack (AoA), the glide angle, the UAV mass, the air density, the gravitational acceleration, the lifting surface. The constraints are: air speed, turning radius, (angular) turning speeds, the angular velocities corresponding to the three axes (roll, pitch, and yaw). The analysis procedure involves several steps, according to Figure 10.

The input data required for the analysis are: geometric parameters of the UAV, mass and center of the UAV,

parameters defined by the stability analysis, position for the maneuver control (lifting surfaces angles, flap angles), type of flight (with constant speed or constant turn), see figure 11. The polars graphs can be calculated for different control variables, they are: the lateral angle (around the  $O_x$  axis), the pitch angle (around the  $O_y$  axis), the flaps angle, the elevator angle, the ailerons angle.

Software analysis provides a number of graph-numerical results, such as: stability and control derivatives, stability derivatives (dimensionless), temporal response, eigenvalues and eigenvectors for longitudinal modes and lateral modes.

From the physical point of view, eigenvalues and eigenvectors represent the natural modes that the plane tends to oscillate, for a standard problem we have for the longitudinal case: two symmetric fugoid modes, two short-period symmetric modes; for the side case: a roll damping mode, a spiral mode, two symmetrical Dutch roll modes.

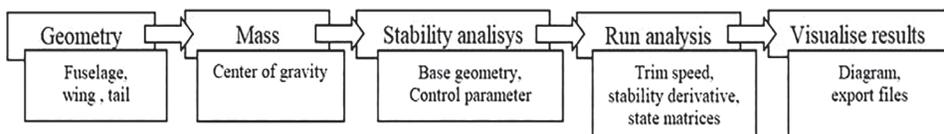


Fig. 10 Stage of stability analysis

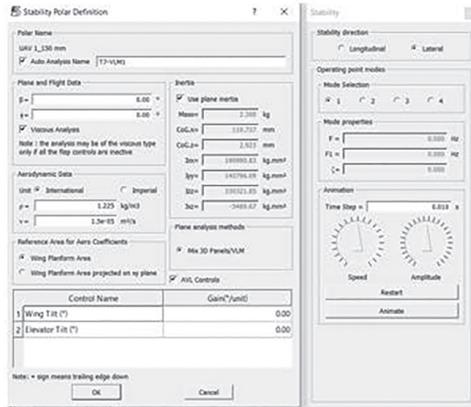


Fig. 11 Input data for stability analysis

### 3. UAV GEOMETRY

The geometric configuration was made using the Airfoilttools [11] and XFLR5 [12] freeware tools. To visualize the UAV behavior regarding

the aerodynamic stability depending on its geometry and mass, we choose a geometric configuration based on two airfoils, NACA 0007 and NACA 2407 (see figure 12), having the characteristics in table 1.

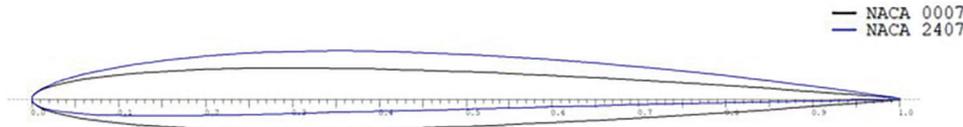


Fig. 12 The airfoils, NACA 0007 and NACA2407.

Table 1. Airfoils characteristics (NACA 0007 and NACA 2407)

Characteristics / profile	NACA 0007	NACA 2407
Chamber	0% for 19,70% Max-x position	2% for 39,50% Max-x position
Max. thickness	7% for 29,1 % Max-x position	7% for 29,1 % Max-x position

The 3D geometries of the UAV (horizontal tail positions) are

shown in Figure 13 and having the characteristics in Table 2.

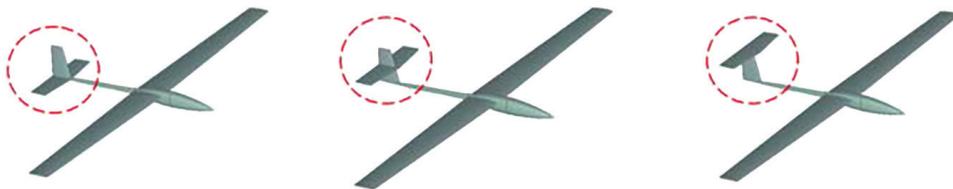


Fig. 13 UAV aerodynamics tail concept

Table 2. UAV features

Characteristics	Value	Characteristics	Value
Span	2000 mm	Taper ratio / Aspect ratio (AR)	1,5 / 16
M.A.C	127 mm	Wing area	25 dm <sup>2</sup>
Mass	2,3 kg	Tail volume	0,54

The balancing of the UAV had as a requirement a minimum mass, at the same time it is observed the positioning of the mass of the propulsion system (brushless electric

motor and folding propeller - 250 g) together with LiPo batteries (350 g) and radio electronic equipment (autopilot - 200 g) according to figure 14, [13, 14].

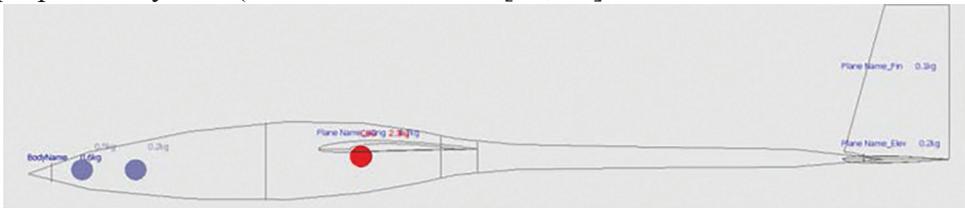


Fig. 14 Balancing of UAV

#### 4. STABILITY ANALYSIS

The stability and control analysis wishes to evaluate the UAV's response to atmospheric disturbances or to those due to maneuver control, under the conditions of constant flight parameters. Grapho-numerical representation is a complex issue that requires some

simplifying assumptions (e.g. only small perturbations related to flight conditions are considered), see Table 3, [12, 17]. In order to graphically highlight the stability coefficients (pitch, rotation, roll) and the modes of response to external disturbances, the proposed multicriteria analysis cases are recorded in Table 3.

Table 3. Analysis cases

Balancing cases	130 mm	150 mm			170 mm
Geometrical cases	Horizontal tail down	down	median	up	Horizontal tail up
Perturbation cases	-	1 m/s		2 m/s	-

##### 4.1. Analysis conditions

The initial analysis conditions considered the actual reproduction of

the flight parameters for a real UAV geometry (see Table 4).

Table 4. Initial conditions for aerodynamic analysis

Features	Value	Features	Value
Analysis method	Mix 3D panels/VLM	Speed	10 m/s
Air density	1,225 kg/m <sup>3</sup>	Boundary conditions	Dirichlet
Iteration	100	VLM method type	Ring vortex VLM2

For the (lateral) stability conditions are initiated according to analysis a number of additional table 5.

**Table 5.** Initial conditions for the stability analysis

Features	Value	Features	Value
Stability direction	Longitudinal / lateral	Analysis interval	10 s
AoA range	-5° ÷ 5°	Sidesleep angle	0°

**4.2. Results and interpretations**

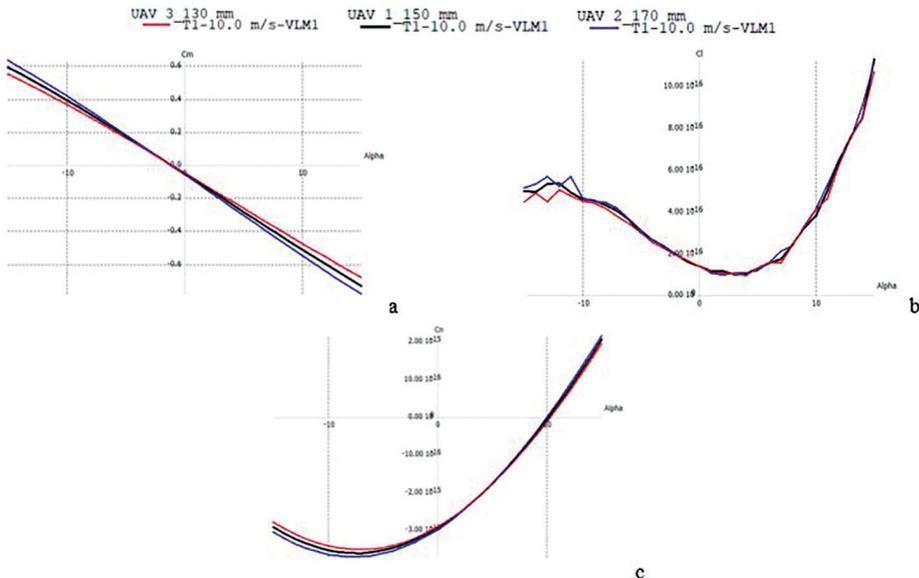
*a. Balancing cases*

The UAV aerodynamic configuration of the analyzed offers for the beginning the variation of the three moment coefficients (pitch -  $C_m$ , roll -  $C_l$ , yaw -  $C_n$ ), see figure 15.

The selected balancing cases reveals the following evaluation: according to the variation  $C_m$  vs AoA ( $\alpha$ ) in figure 15a, a self-stable behavior is observed, the longitudinal stability is improved at a previous balancing (170 mm-blue); the rolling coefficient

$C_l$  reflects a similar self-stabilizing behavior depending on the increase of AoA > 10° (figure 15b), similar behavior for all balancing cases, while the variation of the yaw coefficient  $C_n$  shows a decrease of stability on the vertical axis depending on the increase of AoA > 10°, similar decrease for all centering cases (figure 15c).

The values of the moment coefficients, compared for AoA = 8° (critical for NACA 2407) reveal quasi-similar behaviors in terms of stability on the three axes.



**Fig. 15** Variation of moment coefficients versus AoA (a.  $C_m$  vs AoA, b.  $C_l$  vs AoA ) for three balancing cases

*b. Geometrical cases*

The proposed geometric configurations are analyzed in comparison with the stability coefficients shown in Figure 16. According to Figure 16a a decrease in longitudinal stability is observed with the positioning of the horizontal

tail on the height, while the roll coefficient increases to the maximum extrem position of the horizontal tail (Figure 16b), and the yaw coefficient (according to figure 16c) is quasi-constant for the three geometric variants analyzed.

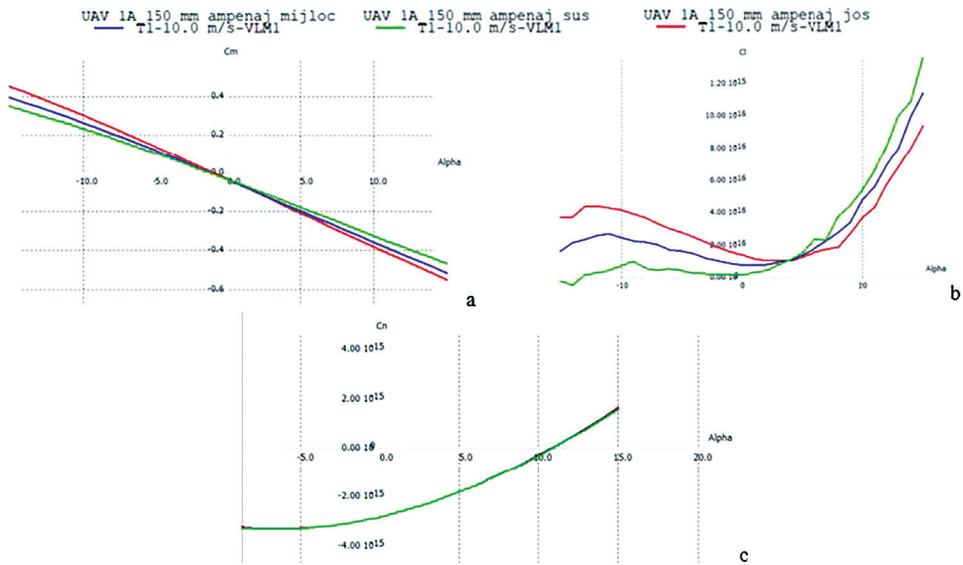


Fig. 16 Variation of moment coefficients versus AoA for the three horizontal tail cases

*c. Cases of disturbance*

Interpretations of the stability behavior of the UAV relate to the

geometric axes, the axes of the UAV and the axes of stability, according to Figure 17.

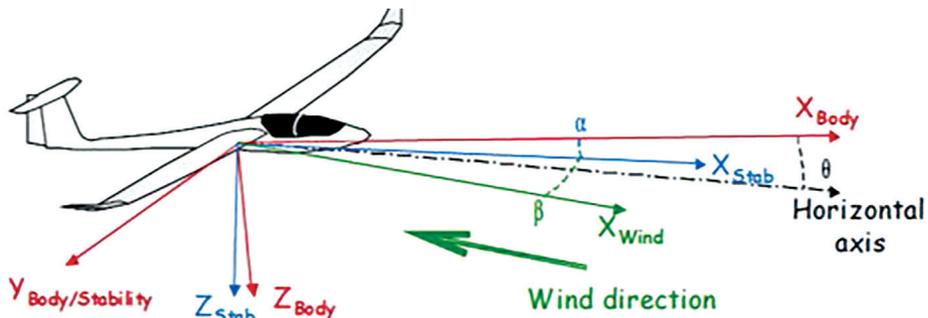


Fig. 17 The UAV axes and stability axes, [12]

The longitudinal stability analysis with balancing for mass center at 150 mm, provides the stability parameters regarding the UAV behavior, as follows: according to figure 18a a damping of the speed variation ( $v$ ) is observed relative to the longitu-

dinal axis ( $O_x$ ), figure 18b indicates a decrease of the response speed ( $w$  in m/s) referred to the vertical axis ( $O_z$ ), figure 18c shows a damping of the drip rate (angle  $q\%$ ) with respect to the lateral axis ( $O_y$ ).

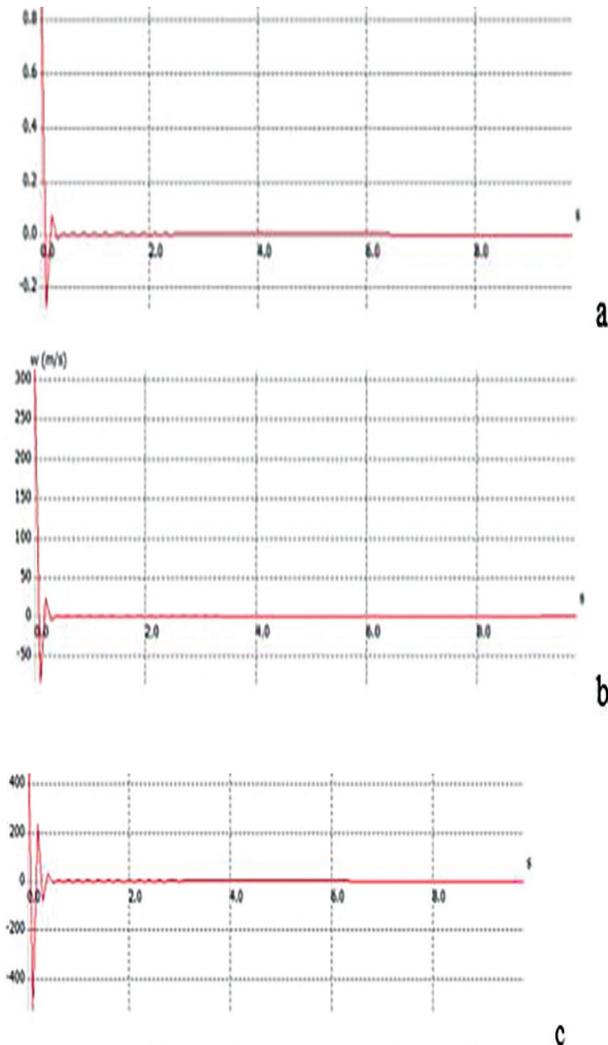


Fig. 18. Variation of kinematic parameters of longitudinal stability

The lateral stability analysis with balancing for mass center at 150 mm provides four relevant parameters for the UAV behavior, as follows: according to figure 19a a damping of the speed variation ( $v$ ) referred to the transverse axis is observed, figure 19b indicates a decrease of the rolling rate (angle  $p\%$ ) referred to the longitudinal axis, figure 19c indicates a decrease in the rate of rotation (angle  $r\%$ ) referred to the vertical axis. As can be seen in Figure 19, the difference in damping values depending on the initial kinetic condition ( $v = 1 \div 2 \text{ m/s}$ ) of the introduction of the pilot's maneuvering disturbance, damping close to zero values after 8 seconds.

## 5. CONCLUSIONS

The overall characteristics and performance of the UAV depend directly on the aerodynamic configuration selected from the design phase, aerodynamic and stability analyzes can provide initial data for experimental campaigns in tunnel wind that will confirm or deny the chosen aerodynamic solution.

Stability and control software analysis is an assessment of the response time of a UAV to external disturbances and maneuver report in the case of a flight with constant parameters. The proposed UAV geometry confirms the expectations of the pre-design phase and provides an overview of the analyzed mass and

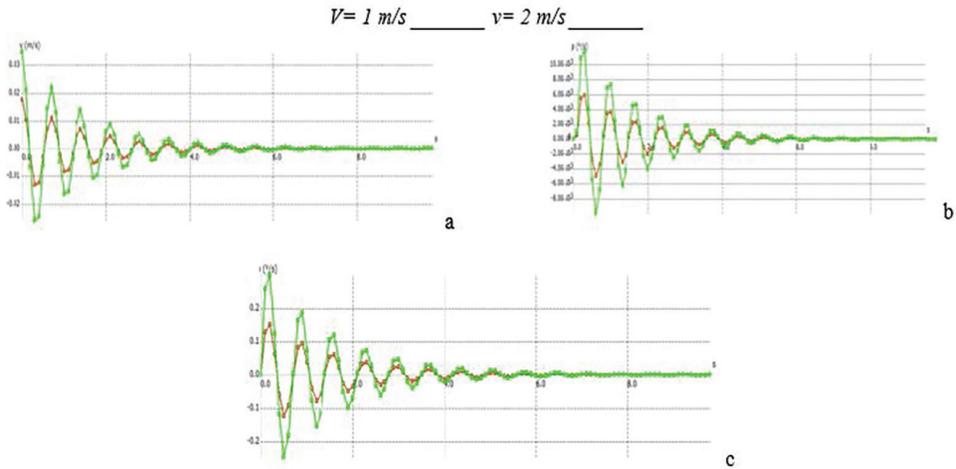


Fig. 19. Variation of kinematic parameters of lateral stability

balancing limits. The XFLR5 analysis tool offers multicriteria possibilities for longitudinal and lateral stability analysis providing relevant numerical data on the response time of the aerodynamic concept transposed in an optimized geometric configuration and centering.

The stability aspects in the case of critical regimes can also be analyzed with the help of CFD numerical codes that are the basis of the established commercial instruments for possible value comparisons of the response parameters.

## 6. ACKNOWLEDGMENT

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# **STRENGTHENING INDONESIA NAVAL BASE AS A AIRCRAFT CARRIER AT THE FRONTIER TO INCREASE POWER OF DETERRENCE AND STATE DEFENSE AT SEA**

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*Indonesia is located in a very strategic position between the continents of Asia and the continent of Australia and the Pacific Ocean and the Indian Ocean, which makes Indonesia a sea line of communication (SLOC) and sea trade route (Sea Lines of Trade / SLOT) for the international world. The size of the Indonesian Navy (TNI AL) territory carried out with the potential threats faced is still not comparable. In order to secure the border areas and maintain the country's sovereignty, President Joko Widodo intends to build the islands of Natuna, Bitung, and Selaru as Aircraft carriers. The Navy can support this desire by strengthening the Naval Bases located in the three regions. Strengthening the Naval Base can be done by analyzing the essential functions and duties of the base and the general requirements of the base. Furthermore, an analysis of the capabilities and technology of weapons owned by the Aircraft carriers of countries in the world can be used as a reference for constructing Indonesian Aircraft carriers. In addition, an analysis of the Naval Base from the Naval Base and Naval Home Base levels is the most appropriate for strengthening to increase the country's deterrence and defense at sea. From the analysis results, three selected Naval bases were determined, namely: Naval Base Ranai, Naval Home Base VIII Manado, and Naval Base Saumlaki.*

**Key words:** *Indonesia Naval Base, Aircraft carriers, Power of Deterrence.*

## 1. INTRODUCTION

Geographically, Indonesia is located in a very strategic position, namely the cross-world position, which is located between two continents (Asia and Australia) and two oceans (the Pacific Ocean and the Indian Ocean). This position makes Indonesia a sea line of communication (SLOC) and sea line of trade (SLOT) for the international community (Geoffrey, 2009). This is very beneficial for Indonesia to establish good relations with countries on the two continents. In the territory of Indonesia, there are several strategic straits, which are the routes of the world economy. The straits are the Malacca Strait, the Singapore Strait, the Sunda Strait, the Lombok Strait, the Makassar Strait, and the Ombai-Wetar Strait (Kurnia, 2017). In addition to providing benefits to Indonesia, this strategic position can also threaten state sovereignty, such as territorial violations, theft of marine resources, smuggling of goods, smuggling of narcotics and dangerous drugs, human smuggling, hijacking, piracy, wiretapping, and sabotage by state actors and non-state actors who have specific goals for the benefit of their group (Zulkifli, 2021). In terms of its area, Indonesia is the largest archipelagic country in the world and has 17,504 islands, of which 16,056 islands have received recognition from the United Nations (Prasetya,

2021). In addition, Indonesia is the 7<sup>th</sup> largest country in the world after Russia, Canada, the United States, China, Brazil, and Australia. When compared with countries in Asia, Indonesia is ranked 2<sup>nd</sup>, and in Southeast Asia, Indonesia is the largest country (Putra, 2016).

Apart from Indonesia, several other countries in this region are neighboring countries, so that Indonesia has maritime and land borders with several nations. In terms of naval boundaries, Indonesia is bordered by ten neighboring countries. The borders in the western region are with Malaysia, Singapore, Thailand, Vietnam, the Philippines, and India. At the same time, the borders in the eastern region are with Timor Leste, Palau, Papua New Guinea, and Australia. Meanwhile, the mainland borders three neighboring countries, namely the border with Malaysia in West Kalimantan, East Kalimantan, North Kalimantan, Timor Leste in East Nusa Tenggara, and Papua New Guinea in Papua (Ritonga, 2016).

Prior to the Djuanda Declaration, the territory of Indonesia still referred to the 1939 Dutch East Indies Ordinance, namely *Teritoriale Zeen en Maritieme Kringen Ordonantie 1939* (TZMKO 1939). In this regulation, the islands in the archipelago are separated by the surrounding sea, and each island only has a sea boundary of 3 miles

from the coastline. This means that foreign ships may unobstructedly sail the sea that separates the islands in the archipelago. The Djuanda Declaration became the forerunner of forming the primary legal effort for Indonesia as an archipelagic country. In the Djuanda Declaration, Indonesia adheres to the principle of an archipelagic state so that the seas between islands are also part of the territory of Indonesia and are not accessible areas. The Djuanda Declaration was inaugurated into *UU No. 4/PRP/1960* concerning Indonesian waters so that the area of Indonesia is two and a half times larger than before, from 2,027,087 km<sup>2</sup> to 5,193,250 km<sup>2</sup> (Kurnia, 2017). The world only recognized international recognition through The United Nations Convention on The Law of the Sea 1982 (UNCLOS 1982). Furthermore, Indonesia ratified *UU No. 17 of 1985*. Based on UNCLOS 1982, the sea became an integral part of the territory of Indonesia which cannot be separated but can be distinguished according to the legal regime that governs it. This is intended so that other countries also still have the right to use the sea as regulated in UNCLOS 1982 (Ibid).

The Indonesian Archipelagic Sea Lane (IASL) is a sea lane traversed by countries that carry out a peaceful passage. IASL is a channel for shipping and aviation that can be

used by foreign ships or aircraft to carry out voyages or flights under international maritime law. IASL is established to carry out international shipping and flights directly and is not hindered by Indonesian territorial waters and airspace. With IASL, it can connect two open waters, the Indian Ocean and the Pacific Ocean. Indonesian waters have a significant and strategic role as world shipping lanes. This region will become increasingly important in the future, in line with the increasing demand for energy and other natural resources, which are expected to increase by 56% by 2040 (Supandi, 2015). Indonesian territorial waters, especially in the Malacca Strait, are considered a critical route for world trade other than the Hormuz Strait, Suez Canal, and Panama Canal (Ibid).

In order to face the development of this strategic environment, the Indonesian Navy must always be ready to guard, protect and secure and enforce sovereignty in Indonesia's marine territory. This task of the Indonesia Navy has been mandated in *UU No. 34 of 2004* concerning the Indonesian National Armed Forces, in Article 9, it is stated that the Navy is in charge of (Republic of Indonesia, 2004):

- a. Carry out the duties of the Indonesian National Armed Forces in the field of defense.

- b. Enforce the law and maintain security in the marine area of national jurisdiction under the provisions of national law and ratified international law.
- c. Carry out naval diplomacy duties in order to support foreign policy policies set by the government.
- d. Carry out the duties of the Indonesian National Armed Forces in the development and strength development of the marine dimension.
- e. Implement the empowerment of the marine defense area.

However, to carry out the mandate of the Law, compared to the area of the Navy's field of work with the potential threats that must be faced, the current strength refers to the Minimum Essential Force (MEF) standard still needs to be improved (Zulkifli, 2021) . Therefore, President Joko Widodo, as the Supreme Commander of the Indonesian National Armed Forces (TNI), when watching the XXXIV Fleet Jaya Exercise in 2016, said that the Indonesian National Armed Forces would soon have three new aircraft carriers. However, this aircraft carrier is not an actual aircraft carrier, but by turning the three outer islands of Indonesia into military bases to protect the sovereignty of the Unitary States of the Republic of Indonesia. The President plans that this aircraft carrier will be built on

the three outermost islands, namely: Natuna, Bitung, and Selaru (<https://katadata.co.id> , 2021).

Based on the preceding passage, in this article, the problem discussed is about strengthening the Naval Base as a aircraft carrier at the frontier to increase power of deterrence and national defense at sea. In strengthening the base, a qualitative descriptive analysis method was used. This method is used to analyze, provide an overview, and summarize various conditions and situations from the data collected, both from the results of interviews and observations, regarding the problems studied and occurring in the field (Wiratha, 2006). In comparison, the problem formulation is how to strengthen the Indonesian Naval Base as a aircraft carrier at the frontier to increase the power of deterrence and national defense at sea.

## **2. RESEARCH METHODOLOGY**

The strength of the Indonesian Navy is influenced by several components, such as the power structure, technological sophistication, readiness, and operational sustainability of the primary weapon system owned (Zulkifli, 2019). Based on the focus and purpose of this article, the method used is a qualitative descriptive-analytical method that produces

strategic concepts in the context of strengthening the Indonesian Naval Base. This method is used to determine the strengthening of the Indonesian Naval Base as a aircraft carrier at the frontier to increase power of deterrence and national defense at sea.

### 3. ANALYSIS

#### 3.1. Indonesian Naval Base

The Chief of Naval Staff has issued a decree numbered: *Kep/1771/XI/2013* concerning the Manual of Standardization Administration for Indonesian Naval Bases. In this decree, it is explained that the Naval Base has the main functions and duties as well as the following general requirements (Mabesal, 2013):

##### a. The Function of Naval Base

The Indonesian Naval Base carries out the following functions:

1. Operational unit support function which includes anchoring facility, support function, maintenance and repair facility, logistic support function, debriefing facility support function, personnel maintenance facility support function and base coaching facility support function.
2. Marine Security Function.
3. The function of National Potential Development to become a defense force in the maritime sector.
4. Maritime Territorial Development Function.

##### b. The Main Duty of Naval Base

The main duty of the Naval Base is to provide administrative and logistical support for elements of the Navy, namely: ships, aircraft, Marines, and carry out potential maritime development by utilizing the facilities and infrastructure owned by the base itself and related facilities and infrastructure. In addition to the main tasks, the Naval Base also has an additional task, namely providing support for non-Navy units according to their functions and needs.

##### c. General Requirement of Naval Base

In order to support the implementation of the main duties mentioned above, the Naval Base must meet the general requirements as follows:

1. Environmental conditions where the base is located, which includes geographical and resource conditions. Geographical conditions, particularly the position of the base to the shipping lane is good; have good land, waters, and space to facilitate the movement and activities of elements of the Integrated Fleet Weapon System (IFWS); close to freshwater sources, as well as other environmental facilities that support the essential tasks of the base. Meanwhile, the condition of resources is the level of the economic capacity of the area

where the base is located, which includes: available sources of raw materials and basic material needs; available support for industrial facilities, especially the maritime industry in the form of industrial material needs, maintenance services, transportation services, and so on.

2. In accordance with its function as a supporter, the base must: be able to ensure the dispersion of ships, aircraft, and marine troops to carry out their operational tasks; can ensure the operational readiness of each IFWS component on an ongoing basis; can create a favorable situation for ships, aircraft or marine troops themselves or friends, and otherwise complicate the movements of the opponent; have good defense and protection; have facilities following the operational requirements of the base.

### **3.2. Aircraft carrier**

A Aircraft carrier is a large warship specialized in the sea or ocean on which to operate aircraft (Dpdiknas, 2008). Admiral A.T. Mahan argues that whoever controls the oceans can rule the world. This is shown by European countries, especially Britain, which has a political policy to encourage its naval power to carry out ocean exploration. At that time, the strength of the British Navy was inseparable from

the support of the rapid progress of science and technology due to the industrial revolution (Marsetio, 2013). This also affects other major countries, so that many big and developed countries are trying to have aircraft carriers. In this day and age, aircraft carriers are large ships created for war and have become a symbol of prestige and strength for countries' navies around the world.

Aircraft carriers have become one of the greatest assets for developed countries. From the beginning, aircraft carriers were created to make a big difference in the country's defense system. Aircraft carriers, also known as floating air bases, are equipped with complete flight deck facilities capable of carrying, arming, deploying, and recovering aircraft. The aircraft carrier can transport a lot of warplanes, helicopters, and other combat equipment.

In order to strengthen the Indonesian Naval Base so that it can function as a Aircraft carrier at the frontier to increase the country's power of deterrence and defense at sea, it is necessary to have knowledge of the existing aircraft carriers owned by major countries in the world. This aims to determine the capabilities of each aircraft carrier, including the weapons technology it possesses. So that it can be a reference for strengthening the Indonesian Naval Base, which will be used as a aircraft carrier. However, this article does

not review the equipment systems related to ship maneuvering. This is because the system has nothing to do with aircraft carriers that are built by utilizing islands that permanent. The data about aircraft carriers in this article, quoted from the book *Jane's Fighting Ships 2019-2020*, are Pape, (2020):



**Fig. 1.** Queen Elizabeth R08  
Source: *Jane's Fighting Ships 2019-2020*

#### **a. Queen Alizabeth Class**

The Queen Alizabeth Class aircraft carrier is owned by the United Kingdom (UK). The UK has two Aircraft carriers, namely Queen Elizabeth R08, launched on 17 July 2014, and Prince of Wales R09, which was launched on 21 December 2017. This Aircraft carrier has a flight deck for takeoff and landing with a length of 908.8 meters and 239.5 meters wide. The Aircraft carrier can carry around 40 aircraft consisting of 24 F-35B aircraft and 14 Merlin Mk2 helicopters and a

combination of Merlin Mk2 or Mk4 helicopters, Wildcat, Chinook, and Apache. In addition, the Aircraft carrier is capable of accommodating 679 personnel (600 air groups) plus 95 flagstaffs and 250 troops.

The types of weapons owned by this Aircraft carrier are 3 Raytheon Mk 15 Phalanx Block 1B 20 mm cannons, Torpedo Defense Ultra Electronics Type 2170. It also has Thales 1046 (S1850M) Air Search Radar, BAE Air Search Radar, Surface Insyde type 997 (ARTISAN), Combat Data System BAE CMS-1, Link 16, and Electro-Optic System 2 Ultra Electronics Series 2500 EOS.

#### **b. Gerald R Ford Class**

The Gerald R Ford Class Aircraft carrier is owned by the United States of America (USA). America has a large number of Aircraft carriers, Gerald R Ford CVN78, which was launched on November 17, 2013, and John F Kennedy CVN79 launched in 2020. This Aircraft carrier has a flight deck for takeoff and landing with a length of 1,091.9 meters and a width of 255,9 meters. The Aircraft carrier can carry more than 75 aircraft (F-35C, F/A-18E/F, EA-18G, E-2D, MH-60R/S) and MH-60R/S helicopters. In addition, this Aircraft carrier is also capable of accommodating 4,550 personnel.

The types of weapons owned by this Aircraft carrier are 2 Raytheon GMLS Mk 29 SAM Missiles, 3 Raytheon 20 mm Phalanx Block 1B Mk 15 6-barrelled cannon, Decoy SLQ-25C. Electronic Countermeasures ESM/ECM SEWIP Block 2/3. It is also equipped with Radar Air Search CVN 78. Combat Data System CEC, USG-2B, Link 4, 11, 16. Weapon Control System SSDS Mk II.



**Fig. 2.** Gerald R Ford CVN78  
Source: Jane's Fighting Ships  
2019-2020

In addition to the two Aircraft carriers, America still has ten Nimitz-class Aircraft carriers, namely: Nimitz CVN68, Dwight D Eisenhower CVN69, Carl Vinson CVN70, Theodore Roosevelt CVN71, Abraham Lincoln CVN72, George Washington CVN73, John C Stennis CVN74, Harry S Struman CVN75, Ronald Reagan CVN76, and George HW Bush CVN77. Currently, America is building a new Aircraft carrier with the name Enterprise CVN80, which is expected to be completed and launched in 2025.

### **c. Charles De Gaulle Class**

The French State owns the Charles De Gaulle Class Aircraft carrier. The Aircraft carrier Charles De Gaulle R91 was launched on 7 May 1994. This Aircraft carrier has a flight deck for takeoff and landing with a length of 857.9 meters and a width of 211.3 meters. The Aircraft carrier can carry 2 E-2C Hawkeye, 24 Rafale F2, and F3 aircraft, 2 AS565 Panther or 2 AS332 Cougar (AF) helicopters, or 2 Puma/Super Puma plus 2 Dauphin SAR. In addition, this Aircraft carrier has the capacity to accommodate 1,890 personnel (600 aircrews) plus 90 flagstaffs.

The types of weapons owned by the Charles De Gaulle R91 Aircraft carrier are Missiles SAM EUROSAAM SAAM/F, 4 20F2 20mm Active Cannon, Decoy 4 CSEE Sagale AMBL-2A. Electronic Countermeasures ESM Thomson-CSF ARB 21 and EDM 2 ARBB 33B Jammers. In addition, it is also equipped with the Thales SMART-S Mk 2 Air Search Radar. Thomson-CSF DRBV 15C Sea Tiger Mk2 Air/Surface Search Radar. Combat Data System SENIT 8 Modernised, Links 11, 14, and 16, Syracuse 3 and FLEETSATCOM, Weapon Control System Thales control View. Electro-optic System 1 Safran PASEO NS Optronic Director.



**Fig. 3.** Charles De Gaulle R91  
Source: Jane's Fighting Ships  
2019-2020

#### d. Kuznetsov Class

The Russian State owns the Kuznetsov Class Aircraft carrier. The Aircraft carrier, named Admiral Kuznetsov 063, was launched on December 16, 1985. This Aircraft carrier has a flight deck for takeoff and landing with a length of 999 meters and a width of 229.7 meters. The Aircraft carrier Admiral Kuznetsov 063 has the capability to carry 16 Su-33 Flanker D or MIG-29K aircraft, 4 Su-25 UTG Frogfoots and 15 Ka-27 Helix or Ka-52K Hokum B aircraft, 2 Ka-31 RLD Helix AEW. In addition, this Aircraft carrier is also capable of accommodating 2,586 personnel (200 officers, 626 aircrews) plus 40 flagstaffs.

The types of weapons owned by this Aircraft carrier are Missiles SSM 12 Chelomey SS-N-19 Shipwreck, 4 SAM Altair SA-N-9 Gauntlet, 8 SAM Altair CADS-N-1. Air/Surface Mortars 2 RBU-12000. Decoys: 10 PK 10 and 4 PK 2 Chaff Launcher.

Electronic Counter Measures: ESM/ECM 8 Foot Ball, 4 Wine Flask (intercept), 4 Flat Track, 10 Ball Shield A and B. Also equipped with Radar Air Search Sky Watch. Radar Air/Surface Search Top Palte B. Radar Surface Search 2 Strut. Fire Control 4 Cross Sword (for SAM), IFF 4 Watch Guard. Weapon Control System 3 Tin Man Optronic Trackers.



**Fig. 4.** Admiral Kuznetsov 063  
Source: Jane's Fighting Ships  
2019-2020

#### e. Liaoning Class

The Liaoning Class air craft Aircraft carrier is owned by the State of China. China has two aircraft Aircraft carriers: Liaoning 16, which was launched on December 6, 1988, and Shandong 17, which was launched on April 26, 2017. This Aircraft carrier has a flight deck for takeoff and landing with a length of 999 meters and a width of 229.7 meters. The Aircraft carrier Liaoning 16 has the capability to carry more than 24 J-15 aircraft and more than

12 helicopters. In addition, this Aircraft carrier can accommodate 1,960 personnel (200 officers, 626 aircrews) plus 40 flagstaffs.

The types of weapons owned by this Aircraft carrier are 3 Missiles SAM HHQ-10 18-cell launchers, 3 type 1130 30 mm cannon, Air/Surface Mortars RPS Smerch-2 system, 2 RBU-6000 12-barrel launchers, 4 Decoys type 726 chaff launchers. It is also equipped with Radar Air Search type 381B Top Plate.



**Fig. 5.** Liaoning 16  
Source: Jane's Fighting Ships  
2019-2020

#### **f. Cavour Class**

The Cavour Class Aircraft carrier is owned by the Italian State. The Aircraft carrier, named Cavour C550, was launched on July 20, 2004. This Aircraft carrier has a flight deck for takeoff and landing with a length of 721.8 meters and a width of 111.5 meters. The

Cavour C550 Aircraft carrier has the capability to carry as many as 8 AV-8B Harrier II or JSF aircraft and more than 12 helicopters. In addition, this Aircraft carrier is also capable of accommodating 654 personnel (203 air groups) plus 140 flagstaff and 325 troops.

The types of weapons owned by this Aircraft carrier are 4 Missiles SAM DCNS Sylver Octuple VLS. 2 Oto Melara Super Rapid Strales 76 mm/62 cannon. 2 Decoys Breda SCLAR-H 20-barrel trainable chaff/decoy launchers. Electronic Counter Measures ESM/ECM MM/SLQ-750. In addition, it is also equipped with the SPS 798 Long Range Air Search Radar (RAN-40L), Selex EMPAR G-band Air Search, and Missile Guidance Radar. Combat Data System Horizon Derivative Flag and Command Support System. Weapon Control System Galileo Avionica SASS Optronic Director, 2 Selex NA-25XP.

### **3.3. The Srengthening of Indonesian Naval Base**

In order to realize the plan to build a Aircraft carrier by utilizing the islands of Natuna, Bitung, and Selaru, the Indonesian Navy needs to strengthen bases in those three



**Fig. 6.** Cavour C550  
Source: Jane's Fighting Ships  
2019-2020

areas, namely Ranai Naval Base, Naval Home Base VIII Manado, and Saumlaki Naval Base.

#### **a. Ranai Naval Base**

Naval Home Base IV Tanjung Pinang, which is under the ranks of 1<sup>st</sup> Indonesian Fleet Command, oversees five Naval bases, namely: Ranai Naval Base, Batam Naval Base, Tanjung Balai Karimun Naval Base, Tarempa Naval Base and Dabo Singkep Naval Base. The most appropriate Naval Base to be developed among the five Naval Bases is Naval Base Ranai, located in the Natuna Islands. Ranai Naval Base has excellent potential to be developed into Naval Home Base. This is with the consideration that the development of this Naval Base also has the support of the local government because this area is very prone to conflicts and crimes as well as violations of territorial boundaries.

Geographically, Natuna is located at 3° - 4° 46' North Latitude (NL) and 107° 45' - 108° 23' East Longitude (EL) ([Https://Travel.Detik.Com](https://Travel.Detik.Com), 2021), which is in the north, close to the border areas of neighboring countries such as Malaysia, Singapore, Vietnam and Cambodia, and the South China Sea ([Https://Dpmpptsp.Natunakab.Go.Id](https://Dpmpptsp.Natunakab.Go.Id), 2021). The biggest threat in Natuna currently arises from outside, namely China, which unilaterally recognizes that the South China Sea is their territory. This unilateral recognition by China is based on a map made by China itself so that the Natuna Islands region became part of China's power. China uses the Nine Imaginary Lines or Nine-Dash Lines, namely the demarcation line formed by the Chinese government in 1949, to control most of the South China Sea.

These situations and conditions can lead to the possibility of conflict, namely in the form of Chinese military aggression in Natuna, which is very likely to occur. Therefore, Indonesia must prepare the best strategy to deal with this possibility because it will be difficult for Indonesia to match China's sea power in a short time if a conflict occurs. The developer

of Ranai Naval Base to become Naval Home Base in order to support the construction of Aircraft carriers in the region is a strategic step to increase national power of deterrence and defense at the South China Sea border.

Apart from China, there are also fishing vessels from several countries such as the Philippines, Thailand, and Vietnam, which often violate Indonesia's maritime boundaries. As a result of illegal fishing, the state's losses per year can reach up to Rp 240 trillion, according to calculations from the Ministry of Maritime Affairs and Fisheries (Kurnia, 2017). Another threat is smuggling, such as narcotics and illegal fuel transfer (illegal mining). Meanwhile, the military threat that should be watched out for is the violation of maritime, air, and land boundaries (Prakoso, 2017).

Another factor that supports Natuna as a Aircraft carrier is the availability of airbase facilities, namely the Raden Sadjad airbase in Natuna (<https://www.bing.com>, 2021). Airbases are indispensable as a spot to take off fighter planes which are alerted as one element of the strength of the Aircraft carrier. Thus, it is very fitting if Ranai Naval

Base is developed into Naval Home Base to support the development of a Aircraft carrier in Natuna.

### **b. Naval Home Base VIII Manado**

Naval Home Base VIII Manado is under the ranks of 2<sup>nd</sup> Indonesian Fleet Command, in charge of four Naval Bases, namely: Melonguane Naval Base, Toli-Toli Naval Base, Gorontalo Naval Base, and Bau-bau Naval Base. However, Bitung and the four Naval Bases are further compared to Bitung and Naval Home Base VIII Manado's distance so that the most appropriate to be developed as a Aircraft carrier here is Naval Home Base VIII Manado. The selection of Naval Home Base VIII Manado as the Aircraft carrier took into account various factors, including the availability of facilities and infrastructure, the availability of airbase facilities, and the availability of human resources (HR). In addition, Naval Home Base VIII Manado is already the Main Base, so the organizational structure has been formed, it only needs to be added to the Aircraft carrier Unit as a special unit for its development.

Manado is the capital city of North Sulawesi province. It is the

second-largest city in Sulawesi after Makassar, geographically located at 1°30' -1°40' North Latitude and 124°40' - 124°50' East Longitude in the north close to the border with the Philippines. Threats that occur in the sea border area of North Sulawesi are the duty and responsibility of Naval Home Base VIII Manado to overcome them.

The number of transnational crimes that occur in this region is quite extensive. This province has places for the movement of people and goods on an international scale. Among them are Sam Ratulangi Airport in Manado and Bitung Harbor. Cases of law violations that often occur around the border and involve citizens of other countries are narcotics crimes and fisheries crimes. In addition, there are also potential vulnerabilities for other international crimes, such as arms trafficking, human trafficking, and terrorism. The vulnerability of terrorism crimes in this region results from the situation and conditions that occur in the Philippines, especially in the Southern Philippines. This area is a base for the activities of the militant group led by Abu Sayyaf. There are armed groups called the Moro National Liberation Front

(MNLF) and the Moro Islamic Liberation Front (MILF) in the Balut-Sarangani area. Therefore, this region has become an area prone to armed conflicts and acts of terror for years (Prakoso, 2017).

The hijacking incident that had occurred in this area was done by the Abu Sayyaf group, who took 12 crew members of the KM Brahma ship hostage, three of whom were crew members from North Sulawesi. Therefore, Mr. Olly Dondokambey, while serving as the Governor of North Sulawesi, has reminded sailors who will cross the sea bordering Indonesia with the Philippines to be alert to pirate attacks in the sea area (<https://www.beritasatu.com>, 2021).

The factors that support Naval Home Base VIII Manado to be developed into a Aircraft carrier are considerable. Naval Home Base VIII Manado already has more complete facilities and infrastructure because of its status as the Main Base. The development of Naval Home Base VIII Manado considers that Manado has Sam Ratulangi International Airport, which is about 37 km from Bitung City using the Manado-Bitung main road if you travel by car only takes about one and a half hours.

In addition, it is also close to Bitung Harbor Pier, namely: Samudera Pier (607 m long); Nusantara Pier (504 m long); Industri Kimia Dasar Pier/IKD (148 m long); Landing Craft Tank/LCT Pier (20 m long) and Local Pier (60 m long) (Http://Pidii. Info, 2020).

### **c. Saumlaki Naval Base**

Naval Home Base IX Ambon is under the ranks of 3<sup>rd</sup> Indonesian Fleet Command, overseeing four Naval Bases: Aru Naval Base, Tual Naval Base, Saumlaki Naval Base and Ternate Naval Base. Of the four Naval Bases, the most suitable to support the construction of Aircraft carriers is the Saumlaki Naval Base, located in the Tanimbar Islands. Saumlaki Naval Base can be developed into Naval Home Base to carry out functions such as Naval Home Base VIII Manado, with the addition of a Aircraft carrier Unit as a unit that is specific to the base.

Saumlaki is located in the West Southeast Maluku Regency, ± 500 km to the south of Ambon City. Geographically, Saumlaki is located at 6° - 8°30' South Latitude and 125° 45' - 133° East Longitude (Lusnarnera, 2018). Saumlaki also has a strategic position because it is located close to the border between

Indonesia and Australianera, precisely from the northern part of Australia.

In Saumlaki, the most significant potential threat comes from Australia because it is located in the south of Indonesia. Australia is one of the NATO member countries with support from the United States in the defense sector. US Marines strengthened the country of Australia in Darwin in mid-May 2015. The US has made Darwin a major military base and has drastically increased its military operations in western and northern Australia. America argued that this was done to balance China's power and as an effort to secure American interests in the region. In fact, the distance between Darwin and Selaru Island, East Nusa Tenggara is only 473 kilometers and can be reached in less than 20 minutes using an F-16

Fighting Falcon fighter. Meanwhile, the distance between Darwin and the Masela Block, which contains fossil energy, is only 492 kilometers (Nurmantyo, 2016).

Another thing to note is that the Australian government has published a defense white paper entitled "Defending Australia in the Asia-Pacific Century: Force 2030".

The Australian Defense Minister believes that the Royal Australian Navy will grow into a bigger and stronger maritime power, supported by its increasing capabilities (Marsetio, 2014).

The developments that occur in the defense force of Australia can be a potential threat to Indonesia, which is located in the north of Australia. This is because Australia has many interests which require them to cross through the territory of Indonesia.

The factor that supports Saumlaki can be developed to support the construction of Aircraft carriers is the availability of facilities that can be used as an airbase, namely Mathilda Batlayeri Airport. The location of this airport is Jalan Mangkawar, Lorulun. The airport has a runway length of 1,641m x 30m ([Http://Www.Mtbkab.Go.Id](http://www.mtbkab.go.id), 2021). Mathilda Batlayeri Airport can be used as a takeoff area for warplanes that are alerted as one element of the strength of the Aircraft carrier.

#### **4. CONCLUSIONS**

In order to support the government's plan to build an aircraft Aircraft carrier using the islands of Natuna, Bitung, and Selaru, the Indonesian Navy needs

to strengthen its bases in these three areas by developing Ranai Naval Base, Naval Home Base VIII Manado, and Saumlaki Naval Base. It is necessary to add a Aircraft carrier unit equipped with equipment and weapons systems with the sophisticated technology in developing the three bases like detection equipment such as air search radars and air and surface search radars, as well as weapons systems such as anti-air missiles, rockets, and cannons that can repel air attacks. In addition, it also needs to be equipped with electronic warfare equipment and weapons, such as Electronic Support Measure (ESM), Electronic Counter Measure (ECM), and Electronic Counter Counter Measure (ECCM) equipment. The development of Aircraft carriers in the three regions will increase the country's power of deterrence and defense at sea.

#### **RECOMMENDATION**

In its implementation, in order that the strengthening of the Indonesian Naval Base as a Aircraft carrier at the frontier to increase the power of deterrence and national defense at sea can be carried out properly, a further study is needed at the leadership level of the Indonesian

Navy, Indonesian National Armed Forces, government, and related officials so that it can be adapted to the needs and developments of the strategic environment, both at the national, regional and global levels. This is intended so that the strengthening of the Indonesian Naval Base as a Aircraft carrier has the value of long-term continuity for the future.

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# ROLE OF THE CRIMINAL JUSTICE SYSTEM IN CONTRIBUTING TO YOUTH RADICALIZATION IN MOMBASA AND KWALE COUNTIES

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*The criminal justice system is at the centre of curtailing radicalization and terrorism. Despite many youths having been arrested, prosecuted or even eliminated, youth radicalization seems to be on the rise which points to the fact that the very criminal justice system contributes to youth radicalization. Anchored on the social identity theory, the criminal justice theory and the psychoanalysis theory, the study investigated the contribution of the criminal justice system to the emergence of radicalization among the youth. A descriptive survey design was adopted. The target population was 320. Stratified simple random sampling was used to select respondents. A sample size of 96 was derived representing 30% of the target population. Both primary and secondary data were used. Validity and reliability of data was tested using Cronbach's alpha. Data was analyzed and presented using descriptive statistics; percentages, frequencies, means and standard deviations. The research found that police show low level of professionalism while dealing with the problem of radicalization in the study area: suspects are profiled and either arrested and charged in court or arrested and never to be seen again (forced disappearances). That the police do not engage the community when dealing with the problem of radicalization. The study also found out that the legal framework on radicalization and terrorism is a bit weak. The study concludes that the Criminal Justice System is part of the problem of radicalization in the study area. Therefore, there is need for the CJS to change its tactics in solving the problem. There is need to change the hard tactics which are mainly militaristic. The law has to be enforced and those who commit criminal acts must face the full force of the law*

**Key words:** criminal justice system, radicalization, extremism

## 1. INTRODUCTION

Radicalisation is a phenomenon that is dynamic and constantly evolving. The process includes the acceptance of a radical philosophy by individuals or groups that can lead to greater willingness to condone or use violence to obtain economic, social or political benefits. According to Odhiambo *et al* [1] in their article "Domestic Radicalisation in Kenya"

*"Violent Extremist Organizations (VEO) like Al-Shabaab terror group cannot sustain themselves without young recruits. Radical groups are astute observes of the challenges facing young people in Kenya, and they tailor their recruitment strategies to exploit youth vulnerabilities"*.

Radicalisation is special to each individual and has a propensity to combine the typical cognitive and behavioral characteristics, systemic grievances and structural grievances politized through a common ideology or a rallying cause that promotes the decomposition process a term that describes a person being increasingly restricted with regard to key political ideas and values. This inevitably generates a sense of danger and leads to immediate violence as a necessary and legitimate action [2].

Moreover, it is important to differentiate between radicalization through violence and non-violence. Some researchers have described the internalization of a community of

beliefs into a militant mentality that accepts violent means as the primary principle of one's conviction [3]. It is a personal mechanism through which people follow radical political and social aspirations and religions and in which the accomplishment of clear purposes excuses the indiscriminate use of violence [4]. Therefore, the notion of radicalisation is the master sign of the late war on terror and offers a new angle for Muslims to look at [5]. In most cases, radicalization explodes into violent extremism. Rarely would a radicalized youth keep his new found radicalised ideologies within himself.

Hicks *et al* [6], on the other hand, considers radicalization as politically subversive, innovative and extremist without being inherently illegal, criminal or a social danger. However, violent radicalisation, often encouraged through hiring and training, is conceived as a social and psychological mechanism by which a person is gradually committed to politically-motivated violence against civilians. He argues that radicalisation takes place when the individual develops political or religious agendas and institutions that contravene educational or mainstream standards [7].

Atran [8], has reported that in the past terrorist trends originated from foreign radical Islamists. This has since shifted towards homegrown terrorists who are recruited and

radicalized within countries through organized recruitment and financing by external forces. These emerging trends have continued to raise unprecedented challenges for both developed and developing countries serving as a motivation for this study. Radicalization has become homegrown and is now entrenched even in the rural society.

According to Lynch [9], increased emphasis on the criminal justice system and strategy as embraced by British authorities can lead to stigmatization and alienation of communities leading to a damaged social fabric. The Public Safety Canada [10], supported this view by reporting that not working with or through populations can ultimately undermine counter-radicalization approaches. There is need for the criminal justice system to engage with communities and champion for support in areas of health, education, social and economic empowerment. This study is relevant since it points out that application of criminal justice system can lead to increased radicalization; the main problem is that such a strategy fails to look into root causes of the same.

In East Africa, the political, socio-economic and individual factors that drive radicalization are varied thus making it difficult for counter radicalization to arrive at a universally applicable approach.

Therefore, according to Odhiambo [11], in his article "Use of Track One & a Half Actors as Counter-Radicalisation & De-radicalisation in Kenya" recommended that:

*Collaboration and partnerships between law enforcement and the private sector are important force multipliers for dealing with the issue of soft targets.*

The Somali question continues to haunt East African countries in the sense that the future of Al-Shabaab depends on its ability to recruit new members along the East African coast and in urban centres. It has been observed that the Al-Shabaab religious and political ideology attracts the youth and provide them with a sense of identity, purpose and community [12]. This study tend to narrow the problem of youth radicalization to be religious in nature which is not the case.

Hicks *et al* [13], have observed that in most societies, understanding the motivation of youth towards radicalization has adopted a court systems and processes. This approach assumes that the legal system can effectively deal with crimes associated with terrorism and extremism and that terrorism can be prevented by criminal intelligence which is a judicial system. In every human settlement, rules of engagement are normally developed to govern the daily co-existence of the inhabitants. These rules are

transformed into laws at certain levels where citizens cede their rights to the state actors and agree to be governed by their elected leaders. In many countries, the Criminal Justice system is a set of law enforcement mechanism that is meant to uphold human rights and to ensure that members of the public adhere to the laws. When there is infringement on human rights then due process should follow. This study is relevant since it touches on issues of law enforcement in the context of youth radicalization.

### **1.1. Statement of the Problem**

The judicial arm of government and other law enforcement state agencies have taken significant steps towards improving coordination between civil society and security agencies in combating all forms of human rights violations. However, violence against the youth including extrajudicial killings and forced disappearances, delayed court processes, ethnic and religious profiling remain widespread, underreported and insufficiently addressed in the context of fight against terrorism [14].

This approach has led to increased youth radicalization in Kenya but more specifically in the coastal counties of Kwale and Mombasa. The form of radicalization embraced by the youth in these two counties is highly associated with issues that are religious and socio-

economic in nature [15]. He further argues that this counter radicalization approaches grounded in the criminal justice system have not prevented violent extremism. As a matter of fact, Bhui [16] explains that deliberate targeting and/or profiling of Muslim communities the police and the criminal justice system by viewing them not as victims but as proponents of terrorism, have encouraged membership to radicalized groups. The inference that can be made from this body of research, is that the intervening processes linking the criminal justice system such as law enforcement, court systems and processes are yet to limit youth radicalization. Concerns raised regarding the emerging cases of radicalization among youthful communities in urban areas in Kenya cannot be underestimated.

Although the criminal justice system is mandated to apply legal measures towards deterrence and correction from criminal offences, there realization is that this is not always the case at least as far as countering radicalization and terrorism is concerned. In most cases, attempts by the criminal justice system to curb radicalization have been unsuccessful, sometimes even the criminal justice officers themselves falling victims [17]. However, while existing research have identified gaps within the criminal justice system in addressing

radicalization, violent extremism and terrorism [18]., Haki Africa [19], Wilner [20] Botha [21], there is dearth of research inquiry as to how practices in the criminal justice systems may contribute to youth radicalization. The study hypothesized that certain practices within the criminal justice system including, discrimination in law enforcement by the police, arbitrary killings and execution, forced disappearances, delayed trials, failures to follow due process in trial, biased court processes and harsh prison conditions precipitate radicalization among the muslim youth especially in Mombasa and Kwale counties where incidents of youth radicalization have been rampant. In answering to this hypothesis, the study sought to investigate the nature of contribution that the criminal justice system has on youth radicalization. Further, it sought to establish whether or not upholding the criminal justice system by state and non-state actors can effectively work as a counter-radicalization measure among the youth who perceive themselves as disadvantaged by the society.

### **1.2. Objective**

The objective of the study was to investigate the role of the criminal justice system in contributing to youth radicalization in Mombasa and Kwale counties.

### **1.3. Research Question**

What role does the Criminal Justice System play in contributing to youth radicalization in Mombasa and Kwale Counties?

### **1.4. Justification of the study**

#### **1.4.1. Academic Justification**

In spite of the growing complexity and diversity in understanding radicalization, there is evidence that very few empirical studies have examined the nature, extent, and impact of youth radicalization in Kenya. The study therefore, attempted to fill the gaps in the academic knowledge that are emerging as a result of the nature, extent, and impact of youth radicalization in the two counties.

#### **1.4.2. Policy Justification**

The study findings would inform various government agencies including the criminal justice system such as the police, the court system, the prisons and remand homes on formulation of strategic policies when it comes to handling youths and taming radicalization. Findings will further inform policy makers, international agencies and the government of Kenya to reinforce programs of social inclusion and cohesion with the overall recognition of the inherent dignity and equal inalienable rights of all members of

the human family as the foundation of freedom, justice and peace in the world.

### 1.4.3. Philosophical Justification

The present study was underpinned by the positivist philosophical approach for some salient reasons. The significant extent correlational and this aligns with the positivist approach since positivist approach correlates the findings to what is happening in the real world. This study therefore contributes to the philosophy of localization of peace, conflict and security.

## 2. GLOBAL RADICALIZATION AND VIOLENT EXTREMISM

An International Expert Roundtable on Prison Radicalization held in Amman, Jordan, between 2 and 3 December 2015 defines radicalization as a complex process by which violent extremism is gradually embraced and encouraged by an individual. Ideological, political, religious, social, economic or personal motives may be the reasons behind this process. Violent extremism is also described as encouraging, endorsing or performing actions that can lead to terrorism and are aimed at defending an ideology that promotes racial, national, ethnic or religious superiority and rejects the core principles and values of democracy. Research has shown that

in Europe motivation for both in and out prison is the feeling of alienation from society, loss of specific identity, Syrian events, mental illness, and social maladaptation [22].

Krieger & Meierrieks [23] says that attempts have been made to highlight the factors that incite terror following the September 11, 2001, U.S. attack. The United States of America. The then President Bush (2002) [24] argued that the circle of disrespect, failure and fear is vicious. Poverty and injustice can lead to depression and hopelessness. Failed states may become terror havens. The author notes that some scientists say that terrorism is rooted in economic poverty, i.e. poverty and injustice in the world. The definition of “relative deprivation” is put forward by Gurr [25] where violence is created when there is a disparity between what people believe they deserve and what they actually obtain through the economic (distributive) method. The report does not mention, however, how structural economic conditions can be changed to minimize radicalization, a concern of the current study. Poor structural economic conditions generate discontent that in turn makes violence more possible.

The UNESCO Handbook for journalist, “Terrorism and the media” [26] provides for a framework for coverage that is responsible, proportionate and free of stigmatization and sensationalism.

The handbook is a guide to the journalist so that they do not become agents of the terrorists by sending to the media images of terrorist scenes whose effect would be to instill fear amongst the viewers. The Handbook realizes that terrorists' main intention in their actions is not solely for the victims but to spread fear worldwide. The book provides for basic issues in covering terrorism. Moez Chakchouk, UNESCO Assistant Director General for communication and information observes in the foreword to the handbook that many of the violent attacks we see playing out today are least partly conceived with media coverage in mind, targeting not just the actual victims but millions of shocked and shaken spectators across the globe. To enhance this Odhiambo *et al* [27] in their article "Al-Shabaab Terrorists Propaganda & the Kenya government Response." Wrote that:

*Any analysis into the strategy used to diffuse Al-Shabaab's ideological content must arise from the fact that the propaganda is multidirectional. Al-Shabaab's future depends not only on its aptitude to support an operative nucleus capable of realizing ostentatious assaults, and its ability to obtain funding and secure recruits. Eroding and neutralizing this image of a mighty fortress must be the ultimate goal of any action designed to offset Al-Shabaab's propaganda campaign.*

Arin *et al* [28] observes that despite the fact that some countries such as the U.S and Israel have announced a policy of strict non-negotiation with terrorists' demands, it is well known that ransom is quite often paid to terrorists. Ransom has been paid by European Governments for hostages taken in Yemen and also to pirates who hijacked vessels off the Somali Coast. The non-negotiation policy is based on the argument that when terrorists learn that they can accomplish their goals by violence they might be encouraged to perpetuate their behavior. The study notes that the cost of terror include reductions in GDP, higher stock market volatility, lower share prices and lower life satisfaction.

According to Renard [29] in Tunisia, Tunisian authorities and the mainstream population view foreign fighters as a possible danger to safety with unparalleled lethality and the ability to cause mass destruction. Attacks at the Tunisian Bardao National Museum took place in March 2015 and mass shootings were carried out on a beach in Sousse in June 2015. As their foreign experience has gained them a degree of prestige among prison inmates and street reputation within some circles in their communities, returnees may also be efficient recruiters. The response of Tunisia to foreign fighter returnees has almost entirely concentrated on punitive measures.

95% of the returnees were either immediately detained upon arrival or put under surveillance. In 2016, a shift in the policy direction needed to tackle the issue was announced by Tunisia's National Countering Terrorism Strategy. The strategy stipulates that a multidimensional approach to the battle against extremists and terrorism is necessary for the main axis, prevention, security, judicial proceedings and retaliation. In Indonesia, in order to resolve the danger posed by terrorists and returnees, he had to work with other countries. On 10 August 2016, Indonesia hosted an international meeting on Counter-Terrorism (IMCT) in Bali. There were more than 300 attendees from 21 countries. Indonesia has formed several alliances with neighboring countries to counter terrorism (Renard, 2019)

Kruglanski *et al* [30] also states that radicalization is a phenomenon that is unfolding over time. It needs the existence of three ingredients, namely the arousal of the objective of significance, that is, the activation of the search for significance, secondly, the recognition of terrorism/violence as the required means of significance, and thirdly, the change of commitment to the objective of significance and away from other motivational considerations that result in the supremacy of that objective and the relative devaluation of that objective. Pursuit of violence

and extremism is seen by the person as an opportunity to gain significance, a place in history and the reputation of a hero or martyr in the eyes of a group. The direction of radicalization according to Kruglanski *et al* starts with the excitement of a quest for meaning that motivates the search for or attention to means of significance.

## **2.1. Criminal Justice System and Radicalization**

### **2.1.1. Court Systems, Processes and Youth Radicalization**

The legal structure of Kenya is based on its civil law, common law in English, customary law, and Islamic law. It has developed from the legacy of the tradition of English common law to a new framework that adapts to evolving social, economic and political patterns. The Courts adhere to the principle of *stare decisis* and, like all countries of common law, the judicial system in its trials is adversarial. A defendant is legally presumed innocent unless proven guilty. However, in fact, the burden of evidence is always placed on the prosecutor. The Customary Criminal Justice system initially existed in Kenya. It is enforced by elected representatives and elder councils in remote communities that are not easily accessible to the police or official courts. The Colonial Parliament passed legislation after

Britain proclaimed Kenya a Crown Colony, which in effect formed the basis of Kenya's criminal laws [31]. In 1921, when Kenya was annexed and proclaimed a Crown Colony by Britain, the Kikuyu, the Kamba and the Maasai introduced stiff opposition to British rule and supremacy. The Mau-Mau uprisings in the 1950s culminated in this war against British colonialism and contributed to the independence of Kenya from Britain in 1963 [32].

The government made many attempts to strengthen the administration of the Criminal Justice System after Independence in 1963. These attempts were made in the different ministries, ministries and agencies participating in the Justice Administration. As a central player, the Judiciary has undergone certain reforms to boost the capacity for fair and effective administration of justice [33].

There have also been several reform steps to eliminate corruption in the judiciary and improve the administration of justice in the justice system. These changes include updating the terms and conditions of service for judicial officers, constructing additional court facilities, reconstruction of the rules committee, decommissioning prisons by setting up prisons and detention homes courts for magistrates, launching the website Kenya law papers, and the introduction

of strategic planning to direct the activities of judicial officers. After the Kenya Constitution was promulgated in 2010, the clamor for reform became clearer. In the area of criminal justice, the Constitution brought much needed changes [34], [35]. As far as the judicial changes are concerned, they are not part of the radicalisation and extremism aspects. This void is to be discussed and filled in this review.

Some highlights include Article 2(5), where the general rules of international law are enshrined in Kenyan law, and Article (6), in which it is claimed that any agreement or convention ratified by Kenya is protected under Kenyan law. Articles 48-50 of the Constitution, which define the right of access to justice, presumption of innocence, and the right to fair listening, also cover other primary provisions affecting the Criminal Justice System. Article 48 states that the State shall guarantee all citizens access to justice and shall be fair and shall not hinder access to justice if any fee is required. Article 49 lays down the rights of the persons arrested and can be summarized as requiring the persons arrested to be told of the reasons for their arrest; their right to remain silent and the implications of not being silent; to be permitted to speak with a legal representative or other person whose help is sought by the arrested person; to be kept separately from those

serving jail sentences; to be brought before the Court as soon as reasonably possible and not later than 24 hours after their arrest or the next day of the Court if they are arrested outside the usual days of the Court; Be told by the Court of the first appearance of the reasons for continued detention or release; and be released on bond or bail on fair terms awaiting trial unless there are valid reasons for continued detention.

A renewed movement to fight for the self-determination of citizens in the coastal region emerged in the counties of Mombasa and Kwale in 2008 when the MRC regained traction, calling for secession from Kenya. Among the 32 classes that were prohibited by the Ministry of Internal Security in Gazette Notice 125855 was the MRC [36]. This was published in the Prevention of Organized Crime Act on 18 October 2010, before the organisation was unbanned on 25 July 2012, after the Mombasa High Court found the prohibition unconstitutional [37]. In any case, the court procedure does not capture coastal people's grievances, which is a problem for the current study.

The MRC focuses on land grievances and the fact that the local economy, which is primarily based on tourism, is dominated by outsiders or citizens from the rest of Kenya. While most of its members are Muslim, it was clearly seen by

the respondents interviewed that the MRC has a somewhat different agenda from al-Shabaab. Despite the fact that the two groups are contesting different regions, driven by different backgrounds (the MRC focuses on land issues and is a secessionist movement, while al-Shabaab emphasizes Islamist extremism), the question is if they tap into the same tensions and grievances that often manifest in protests after reports that prominent radical Muslim clerics are being assassinated [38].

Nevertheless, despite growing evidence of the gradual radicalisation of a number of local Muslim community members and evidence that Saleh Ali Saleh Nabhan (who was closely linked to both al-Shabaab and al-Qaeda) was directly involved in the attacks in Mombasa in 2002, the dominant opinion, including that of Kenyan investigators, remained that the attacks in 1998 and 2002 were orchestrated from abroad. Instead of understanding radicalization from a perspective of the conditions conducive to it or root causes that almost exclusively focus on external circumstances, this analysis while recognising these external circumstances, will also refer to the process of political socialisation that introduces individuals to the radicalization process [39].

From this review, it is clear that court systems and processes have not been tailored towards issues

of radicalization and terrorism. The reviewed studies thinly focuses on this issue of court systems and how lack of justice itself can lead to radicalization. The court systems and processes are linked to correlation institution too, the following section focuses on this area.

### **3. CONCEPTUAL FRAMEWORK**

Wasike and Odhiambo [40] discuss the role of theories in guiding the thrust of academic studies. They emphasise the importance of theories in offering compelling and incisive causal explanations with calculated precision. They asserts that theories play the role of predicting, prescribing and evaluating socio-political phenomena hence they cannot be ignored.

#### **3.1. Social Identity Theory (SIT)**

The theory introduces the concept of social identity as a way of explaining intergroup behavior. This theory predicts certain intergroup behavior on the basis of perceived intergroup status differences. It posits that an organization can change individual behavior if it can modify self-identity or part of their self-concept that derives from knowledge of and emotional attachment to the group

The individual's choice of behavior is largely dictated by the

perceived intergroup relationship (status) as well as the perceived stability and legitimacy of the intergroup status hierarchy. The social identity theory, therefore, provides key theoretical foundations for the possibility of youth radicalization, focusing on the recognition of existing youth groups as strategic motivators in instilling radical behavior changes. All human beings desire a sense of belonging and identity. Due to extensive marginalization and the challenge of unemployment and marginalization that most youths in Mombasa and Kwale counties go through, many find it irresistible to join radical groups. The presence of al-Shabaab group in the coast and the neighboring Somalia give many of the youth a ready alternative for personal belonging and identity.

#### **3.2. Criminal Justice Theory (CJT)**

The criminal justice theory explains the official responses that the criminal justice agents have on behavior that is labelled criminal [41]. The behavior in this case includes all forms of actual behavioral phenomenon such as decisions and actions or non-behavioral phenomena including attitudes, philosophical orientation, or policies.

Within the interpretation of CJT, the justice system embeds on three broad streams of operations that entangle both individual and

organizational schema. The first, encompasses the individual behavior of criminal justice agents; the police and other law enforcement officials, court-room officials, correctional officers and other personnel involved in the response to criminal behavior. The second focuses on the organizational behavior of criminal justice organizations such as police departments, courts and correctional organizations. The third concerns the characteristics of the overall justice system together with its components. Such characteristics may include actions of the police and justice systems that defy the concept of justice such as police killings, incarcerations and 'get tough' sentencing [42]. As Gottfredson and Gottfredson [43] explain, the criminal justice entails a series of critical decision making, criminal diagnosis, classification and prediction by criminal justice agents.

### **3.3. The Psychoanalysis Theory**

Understanding the theory of psychoanalysis began with research into various case studies of patients with neurotic conditions, including, though not limited to, obsessive-compulsive disorders and other documented phobic conditions. Patients with hysterical symptoms have been reported to complain of shortness of breath, paralysis,

and limb contractures for which no physical symptoms are known. Freud and his early co-worker and mentor, Josef Breuer, an Austrian physician, noticed in the course of interviews that many of their patients were unaware of how or when their symptoms progressed and even seemed oblivious to the immense discomfort caused by the symptoms. It was noted that the thoughts associated with the symptoms were locked from the conscious level of the minds of the individuals and thus ignored by normal curiosity [44].

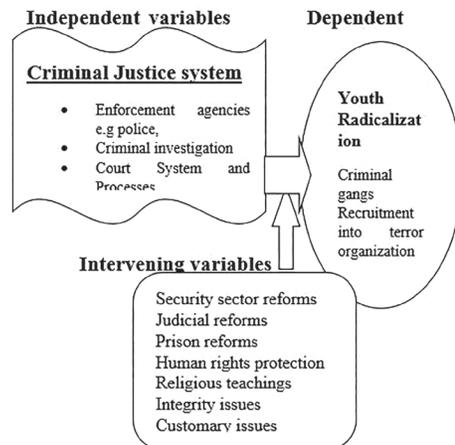
Freud [45] believed that the specific drive for these neurotic symptoms lay in the desire of the patient to continually block deeply distressing events from his unconscious memory that were incompatible with the societal moral standards of the individual and therefore contrary to them. These events were considered to have been sexual or violent in nature, and further exploration convinced Freud that even earlier troubling sexual experiences had been had by his patients where the memories were dormant until a more recent sexual or violent encounter awakened them. Freud further argued that previous experiences had an impact on the behavior of people under study. Freud has therefore formulated the theory of psychoanalysis to show

that personality is shaped by such experiences as are many other traumatic or frustrating instances that have already been presented during a person’s childhood and have been expressed in terms of behavior [46].

Freud [47] believed that his patients were inspired to suppress such dreams about them that were both thrilling and repellent. Freud defined various psychological devices as protection mechanisms, formed to protect one from oneself, by which people tried to make fantasies bearable, such as obsessive compulsive behavior where people embrace persistent unwanted ideas or repeated overwhelming impulses to perform certain actions, such as incessant hand washing, defense maneuvers are called isolation and displacement. They consist of separating a fantasy from recognized emotions (isolating) and then adding the emotion to another, previously trivial idea. Freud also pointed out that in interpersonal contacts, individuals who rely on isolation and displacement are otherwise distinguished by nonpathological personality traits such as perfectionism, indecisiveness, and formality. The illusions for Freud were the mental representations of basic motivations or drives in the unconscious mind to achieve anything like sex, hostility and self-preservation [48].

The criminal justice theory involves the actions of those tasked with the duties of preventing, investigating, determining crimes as well as reforming those who would have been found to have committed crimes. The theory does not deal with the reasons as to why people become radicalized and engage in crime. In the researcher’s view the theory is more of reactionary than pro-active. It deals with the problem after the crime has occurred. Once a crime is committed then the criminal justice system machinery comes into full force. The offender is arrested, prosecuted and imprisoned. The expectation is that all the above processes will be done within the law.

### 3.4. Conceptual Framework Model



**Fig. 1.** Conceptual Model indicating the interaction of independent, dependent and intervening variables.

Source: Researcher, 2021

## 4. RESEARCH METHODOLOGY

### 4.1. Research Design

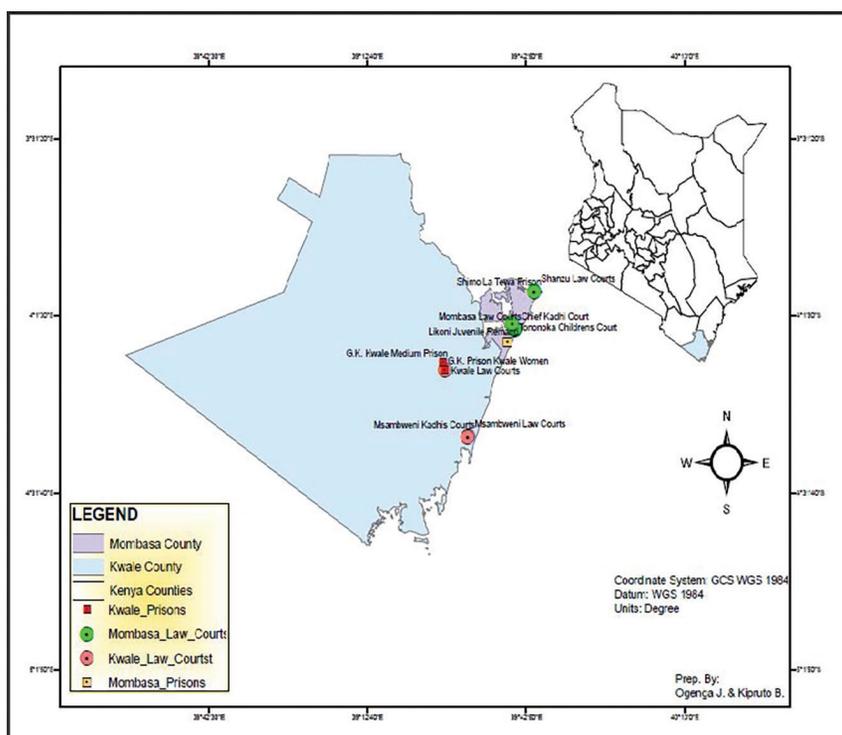
Descriptive research design was used to examine the nature, extent, and impact of youth radicalization in Mombasa and Kwale Counties.

### 4.2. Study Area

Mombasa County is located in the South Eastern part of the Coast region. It is one of the smallest counties and covers an area of 229.9 Kms<sup>2</sup>. It borders Kilifi County to the North, Kwale County to the South and South

West and the Indian Ocean to the East. The entire County basically lies within the Coastal strip and experiences hot tropical climate influenced by the monsoon winds. According to the 2019 Kenya Population Census, Mombasa County's population is 1,208,333 people.

Kwale County has a very big potential in the blue economy. There are several tourist hotels and cottages in Kwale County. The impact of youth radicalization and violent extremism has badly affected the tourism industry in the County. Sandy Beaches, marine parks and



**Fig. 2.** Study Area  
Source: Researchers, 2021

Wildlife are major tourist attractions. The Shimba Hills National Reserve, Mwaluganje animal sanctuary, Kigite /Mpunguti Marine Park, Shimon caves, Kongo Mosque and the long Sandy beaches are the main tourist attracting points. The Hotels in Kwale range from normal standard ones to five-star level.

Kwale has the highest Al-Shabaab recruitment rates. There are several returnees who came back to Kenya after fighting on the side of Al-Shabaab in Somalia. It is a county that has been home to so many conflicts since 1992, 1997 election clashes, 2002 Kaya Bombo violence, the Mlungunipa 1 and Mlungunipa 2 skirmishes. Figure 2 shows the Map of the study area.

#### **4.3. Sampling Strategy and Sample size Determination**

The first stage of sample selection involved the identification of relevant organizations and institutions in Mombasa and Kwale counties that formed a good respondent's base for the study. Purposive sampling was used, where a list of institutions and organizations whose work falls within the study's core thematic areas of criminal justice system and youth radicalization was created. The target population was drawn from religious organizations, the judiciary, the correctional institutions, non-governmental organizations, the Independent Oversight and Policing

Authority (IPOA) and the Police Service.

Stratified random sampling was used to select the actual respondents to participate in the study. The sample frame included a list of individuals particularly opinion leaders affiliated or working with selected organizations, which formed the strata.

#### **4.4. Data Collection Methods**

Primary data was collected through semi-structured questionnaires and face to face interviews. Document reviews and interviews, focused group discussions (FGDs) discussion was applied to corroborate the findings. Secondary data was collected from archival records, journals, articles, policy documents, Acts of Parliament, official reports, academic books, Court pleadings and judgments, the internet, and any other relevant literature.

### **5. DATA ANALYSIS AND PRESENTATION**

Data was analyzed using descriptive statistics, where relationship between the independent variable and the dependent variable were determined. The data collected was refined, coded and entered into the computer system. The presentation of data in the form of descriptions of the mean, mode, standard deviation, frequencies, and

percentages. The Statistical Package for Social Sciences (SPSS version 27) and R was used for analysis.

## 6. RESULTS AND DISCUSSIONS

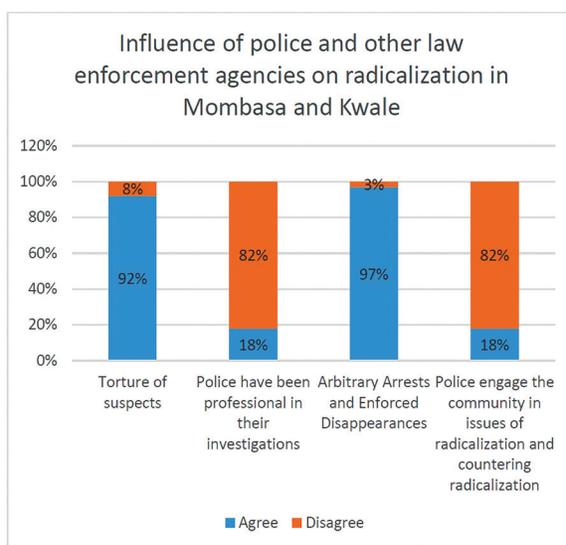
### 6.1. The police and youth radicalization in Mombasa and Kwale Counties

The study used the parameters where: 5=Strongly Agree (SA), 4=Agree (A), 3 = Neither agree nor disagree (N), 2= Disagree(D) and 1=Strongly Disagree (SD). A summary of the findings is as shown in Figure 3.

The study findings are as shown in figure 3. 115 (92%) of the respondents agreed that the police torture suspects of terrorism, while 103(82%) disagreed that police were professional in conducting investigations. On the other hand, 122(97%) of the respondents agreed that there were incidents of arbitrary

arrest and forced disappearances instigated by law enforcement agencies, while 103(82%) disagreed that the police have involved the community in addressing issues of radicalization and countering radicalization. Overall, it is evident from data that the police are seen as mere intruders whose purpose is to conduct deliberate arrest targeting the youth under the guise of radicalization. Thus, police legitimacy among the general public and the youth in particular, is very low, which in turn creates a wide distance between the communities and the

police. In that sense, the police fail to be seen as law enforcement officers and are rather perceived as agents of victimization and injustice. This obtaining suspicion generally make it next to impossible for the police to rely on the community in combining radicalization. On the other hand, the community's suspicion on the police leads to



**Fig. 3.** Influence of police and other law enforcement agencies on youth radicalization

Source: Field Data, 2020

retention of crucial information that can help the police.

This observation is confirmed by statements from interviews in which community members were critical of the conduct of police in the manner they approach counter-radicalization and de-radicalization programs in the region. One respondent opined that:

The police are always targeting us. In many instances, police would find you walking in groups or come to your house at night and they just take you away, sometimes detaining you longer than 24 hours before taking you to court. In most cases if you resist or question the cause of your arrest, the only answer you get is beatings and torture without getting any explanation....Some people are also taken to remand where they are detained for some time without cause and if they do not get evidence to present before court they release them. This has made most people to live in fear and mistrust of the police (Interview with a young male respondent at Mvita in Mombasa County on 26<sup>th</sup> November, 2019).

The foregoing statement illustrates that radicalization in Mombasa and Kwale counties is partly fueled by actions of law enforcement agencies (police) who fail to diligently undertake their duties within the confines of the

law. It is noteworthy, however, to underscore that radicalization is a new area in criminal justice and one that many jurisdictions, including Kenya, are still grappling with, especially in defining acceptable counter measures which enhance both legal rights and psychosocial wellbeing of the actual or suspected victims. It is quite difficult for the police to clearly point out those who are likely to cause violence due to radicalization. In the process of their investigations, excessive force is always used.

#### **6.1.1. Police Professionalism and Radicalization**

As observed in Kwale and Mombasa, 103(82%) of the respondents indicated that the police show low levels of professionalism while conducting investigations. The lack of police professionalism manifests in the shoddily done investigations which fail to collect sufficient evidence to successfully conclude a criminal case. Lack of objective investigations results in religious and ethnic profiling of suspects, and the exercise of strict secrecy in conducting investigations with less involvement of the communities. Further, arbitrary raids on homes and arrests which fall out of the laid down due process in law,

and criminal procedure, indicate lack of professional criminal investigation on the part of the police. This concurs with the findings of Odhiambo [49] on his article titled: “Character Development Challenges and Opportunities Influencing Anglo-Kenyan Diplomatic Relations” where he said that military professionalism has three characteristic: expertise, social responsibility and corporateness. Africa as a continent has faced numerous *coup d'état* because of lack of military professionalism, ethnic and tribal biases in recruitment and promotion. Politicization of the military and militarization of politics and legacy of colonialism was perfected by Africans who became military heads as their countries got their independence.

‘Terrorist profiling’ is however a limited approach in effectively countering radicalization. As Hudson [50] contends,

*The diversity of terrorist groups, each with members of a widely divergent national and socio-cultural backgrounds, contexts and goals, underscores the hazards of making generalizations and developing a profile of members of individual groups or of terrorists in general.*

This is corroborated by Onkware *et al* [51] in their article “Counter-Terrorism Strategies by

Kenya against Somalia Terrorism”. They state that:

All Kenya entry points should be computerized to monitor visitors who may feature on global watch lists on organised crime like terrorism.

Apart from pursuing criminal investigations from the narrow lenses of religious profiling and disregard for due process, the police are accused of carrying out intrusive searches that are insensitive to gender sensibilities, and the right to privacy of those targeted for the search. A female resident of Old Town in Mombasa, complained that

Those policemen do not care, at all...we the Muslim women are embarrassed and harassed in the searches and body checks they subject us to. You cannot imagine, a male Christian policeman touching all over your body and getting into your robe..... and worse, he is like your son. We are not free to walk in the streets, they imagine we are hiding weapons in our dresses, we do not feel comfortable and safe under the police (Interview with a community member in Mombasa County, on 24<sup>th</sup> November, 2020).

The sentiments represent the difficult position the police find themselves in when investigating cases related to radicalization and extreme violence.

## 6.2. The Judiciary and Youth Radicalization in Mombasa and Kwale Counties

### 6.2.1. Judicial Processes and Court Handling of Suspects of Radicalization and Terrorism

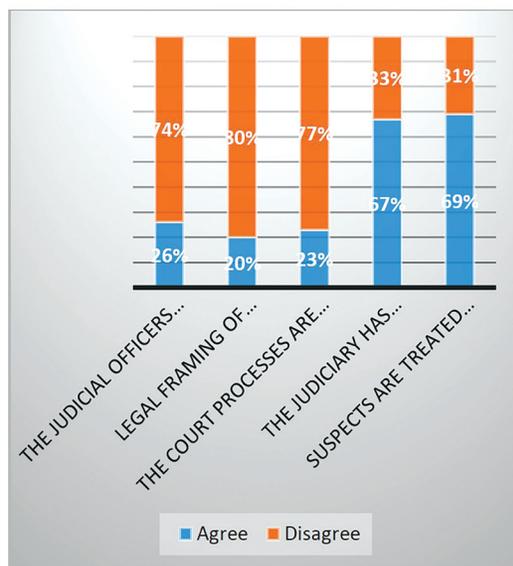
According to figure 4, 93(74%) of the respondents disagreed that judicial officers presume innocence for suspects of radicalization and terrorism until proven guilty, while 80% indicated that legal framing of radicalization and terrorism is not clear. On the other hand, 84(67%) of the respondents indicated that the judiciary lacks the capacity to address cases of radicalization and terrorism, while 97(77%) disagreed that court processes and cases are expedited by the judicial system. Finally, 86(69%) of the respondents indicated that suspects of terrorism and radicalization are not treated properly by the judicial system.

### 6.2.2. The Legal framing of radicalization and Terrorism

The findings of this study indicate that 107(80%) of the respondents perceive legal framing of terrorism and radicalization as unclear. It is thus possible, that many cases of radicalization among the young people, which either end up in the courts, prisons, or killings and enforced

disappearances, could be preventable, were the legal framework addressing radicalization and terrorism clear enough, by specifically prescribing special treatment for cases of radicalization and terrorism. OSCE and ODHIR [52] contend that prevention of terrorism should be anchored on ascriptive

national legislative frameworks setting out respective criminalization for basic or preparatory offences. Thus, Kenya's legislative framework of countering terrorism should capture the whole process of terrorism, while picking out, certain behavioral tendencies, likely to constitute



**Fig. 4.** Judicial processes and handling of suspects of radicalization and terrorism

Source: Field data, 2020

a criminal offence, to warrant the intervention of the criminal justice system.

Odhiambo [53] in his article “Religious Fundamentalism and Terrorism” states that, the study of terrorism is multidisciplinary, which includes fields like Religion, sociology, criminology, political science amongst others. There are diverse reasons and motivations for terrorist activities. Some can be attributed on the socio-political exigency that fosters authoritarianism, however religion fans the ember and gives it legitimacy. Religion which occupies a central position in human life becomes a medium of translating this socio-political conflict into a moral one.

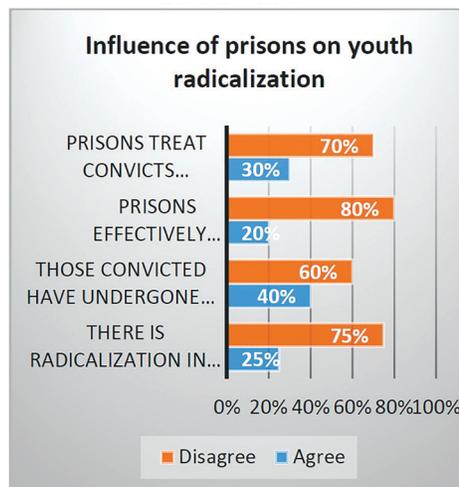
A judicial officer in Msambweni, Kwale, noted that in cases where the court find no sufficient evidence linking a suspect to terrorist acts or terrorist groups, courts have rendered justice, by acquitting them. However, not in all cases do suspects walk back free to their communities. A resident of Msambweni complained that:

It is unbearable to watch your son being put in remand for an endless period of time before actual hearing even begins. First, the prosecutors start by asking for more time to conduct investigations, then they continue citing new developments in the case, they tire the court process with every trick in the book! At the same time, we continue receiving threats from the police maybe, to go slow on the case...you wonder why the case was filed in the first place.....

they will conduct investigations for six years maybe, before they finally give flimsy evidence to the court. Even if the court dismisses the case, who compensates us for the six years of pain? Six good years of injustice... of deliberate persecution. (Interview with a respondent at Mwabungo, Kwale on 9<sup>th</sup> January, 2020).

The study found out that the residents do not differentiate delays caused by the prosecution which cause adjournment of cases and adjournments caused by absence of judicial officers.

### 6.3. Influence of Prisons and Correctional Facilities on Youth Radicalization

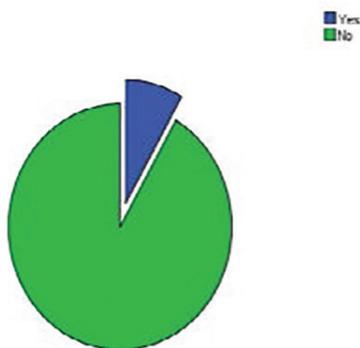


**Fig. 5.** How prisons in Mombasa and Kwale have handled the cases of radicalization in prison  
Source: Field Data, 2020

According to the findings in figure 5, 43(30%) of the respondents agree that prisons provide proper

treatment to persons convicted with terror and radicalization charges, while 27(20%) agree that prisons effectively carry out de-radicalization. On the other hand, 32(25%) of the respondents agree that there is radicalization in prisons, while 60(40%) agree that prisons serve as centers for transformation and reform. Realities in Kenyan prisons which create conditions for incomplete or no reform and transformation, ineffective de-radicalization, and sustain conducive environment for further radicalization.

Respondents were asked on whether the prisons in Kwale/Mombasa have a proper system of dealing with the remandees or convicts who are facing terrorism/radicalization offence and their response was as shown in Figure 6.



**Fig. 6.** Opinion on whether the Mombasa/Kwale prisons have proper system of dealing with remandees facing terrorism/radicalization offences  
Source: Field data, 2020

### 6.3.1. Prison as Centers of Radicalization

The Kenyan prisons in which radicalization and terrorism convicts are consigned. Shimo La Tewa Prison in Mombasa and Kamiti Maximum Prison in Nairobi have the largest number of persons convicted of terror offences, radicalization activities and violent take-overs of mosques in Mombasa [54], Ndungu [55]. The number, as of 2016, was estimated to be around 240, with Shimo La Tewa Prison holding the bulk of them, about 160. However, Shimo La Tewa Prison has been noted to serve as a space for recruitment of other inmates into terrorism prompting the president to announce new plans for the correctional sector in dealing with terror-related offenders. The president announced plans to establish new prisons, specially designed for terror and radicalization related convicts. The president alluded to a plan to separate prisoners, so as to stop radicalization from spreading to otherwise moderate prisoners, who currently are being exposed to radicalized prisoners. This came in the wake of three prisoners petitioning parliament in 2015, to separate inmates linked to terrorism offences, citing the reality that prisons were turning into fertile grounds for radicalization and recruitment [56].

## 7. SUMMARY AND CONCLUSIONS

The research found out that 82% of the respondents indicated that police show low level of professionalism while dealing with the problem of radicalization in the study area: suspects are profiled and either arrested and charged in court or arrested and never to be seen again (forced disappearances). 97% of the respondents stated that cases of arbitrary arrests and forced disappearances are prevalent. The ATPU has been blamed for the arbitrary arrests, torture and forced disappearances. That the police do not engage the community when dealing with the problem of radicalization. A large proportion of the respondents reached during the study (82% o) declined that the police engage the local communities relating to the issue of radicalization. The study also found out that the legal framework on radicalization and terrorism is a bit weak. There was no existing policy on prevention of radicalization until the idea of having county action plans for countering violent extremism was formalized. The study concludes that the Criminal Justice System is part of the problem of radicalization in the study area.

## 8. RECOMMENDATION

There is need for the CJS to change its tactics in solving the problem. There is need to change

the hard tactics which are mainly militaristic. The law on prevention of terrorism is in place and must be enforced. The law has to be enforced and those who commit criminal acts must face the full force of the law. However, while enforcing the law, the state actors should at the same time respect the rights of the suspects as enshrined in the constitution.

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# OPIOIDS OF FENTANYL SERIES IN THE ROLE OF NON-LETHAL CHEMICAL WEAPONS AND THE ISSUE OF THEIR IDENTIFICATION

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*The article deals with the possible use of the synthetic opioid fentanyl and its derivatives as so-called non-lethal chemical weapons in military and non-military operations or terrorist acts. It contains information about the synthetic opioid fentanyl and its derivatives, the possibilities of identifying opiates of the fentanyl series and the evaluation of the possibilities of using psychotropic drugs in the form of non-lethal chemical weapons.*

**Key words:** non-lethal weapons, legislative measures, fentanyl, identification of fentanalogs, decontamination.

## 1. INTRODUCTION

When it comes to the use of military force - especially in peacekeeping operations -, emphasis is placed on minimizing human and material losses. Since the end of the 20th century, there have been discussions about the concept of a new separate category of chemical weapons, the so-called non-lethal chemical weapons, capable of temporarily neutralizing enemy force without serious health consequences. Some opioid substances are classified as

non-lethal chemical weapons, belonging in the group named calmatives. In the NATO Policy for Non-Lethal Weapons, approved by the NATO Council in 1999, NATO defines non-lethal weapons as substances “which are expressly designed and developed to incapacitate or eliminate persons with a low probability of death; achieving a minimum adverse effect on the environment“.

The Chemical Weapons Convention (CWC) characterizes toxic substances as any chemical that is harmful when used under

conditions in which it is temporarily incapacitating or lethal. Some toxic substances, which have been considered for use as incapacitating chemicals, are even more toxic than chemicals developed for lethal purposes in the sense that their extremely small amounts are sufficient to produce an effect (Patočka: 2004).

States that have ratified the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction (Paris, 1993) may use these chemicals for “non-prohibited purposes”, which includes their maintenance for the purpose of maintaining public order, including the national suppression of unrest. An example is the use of two fentanyl derivatives, remifentanil and carfentanil, in a counterterrorism operation at the Dubrovka Theater in Moscow in 2002 (Riches: 2012).

The affected individual is not able to influence the reflex actions caused by these substances by his will, which leads to a reduction in the ability of this individual to continue the planned activity. Implementing an intervention using an incapacitating substance is considered a breakthrough in tactical solutions to problematic situations. Each State Party shall take the necessary measures to ensure that

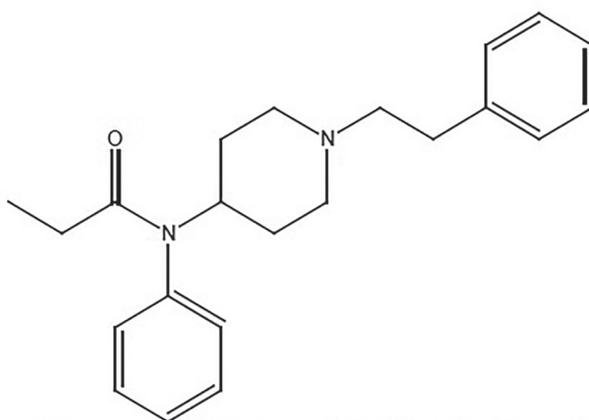
toxic chemicals and their precursors are developed, manufactured or otherwise acquired, stored, transferred or used in its territory or in any other place under its jurisdiction or control only for purposes not prohibited by this Convention. The handling of addictive substances is currently regulated by legislative frameworks for the handling of addictive substances, which are adopted individually by the governments of individual states (Středa, Kobliha, Halámek: 2001). The first international treaty on drug control is the International Convention on Opium, signed in The Hague on 23 January 1912 during the first international conference on opium, which was preceded by a conference of representatives of 13 states in 1909 in China. This International Convention on Opium was replaced in 1961 by the Single Convention on Narcotic Drugs. As of February 2018, the Single Convention already has 186 contracting parties (International\_Opium\_Convention).

In the broader context, the following pharmacological groups can also be included among the groups of substances that can be used, for example, to control street riots: emetic-inducing substances (emetics), sedatives and hypnotics, serotonin antagonists, substances influencing thermoregulation,

substances with hypotensive effect, nausea-inducing substances and muscle relaxants (Žďárová-Karasová and Žďára: 2018). Although the qualitative and pharmacokinetic characteristics of this group of substances are described as rapid, effective and reliable, it appears that not all of their representatives always have a sufficiently high safety ratio between effective and lethal dose and their duration of action is in some cases too long. From the group of psychotropic drugs, ie substances affecting the central nervous system, only quinuclidine-3-yl-diphenyl(hydroxy)acetate with a long elimination effect was included in the armament of some armies for over 50 years (until 1990) (Kobliha, Středa: 2015).

## 2. SYNTHETIC OPIOID FENTANYL

An opioid called fentanyl deserves attention in this area - a substance with qualitatively similar properties of morphine, but with effects about 80-100 times more pronounced, but in comparison with morphine with a shorter onset time and faster disappearance. The substance was synthesized on the basis of a change in the structure of the drug pethidine in the late 1960s in the Belgian company Janssen and, thanks to its functional parameters, was used in healthcare primarily as an intravenous anesthetic in surgery and to relieve severe pain in patients. Fentanyl is suitable for intravenous, transdermal, intranasal, oromucosal applications, and due to this it was



**Fig. 1.** Structure of fentanyl  
(*N*-fenyl-*N*-[1-(2-fenylethyl)piperidin-4-yl]  
propanamid)

soon used all over the world, together with its numerous analogues.

Over the years, hundreds of fentanyl derivatives with different effects have been synthesized, for example alfentanil, acryloylfentanyl,  $\alpha$ -methylfentanyl,  $\alpha$ -methylthiofentanyl,  $\beta$ -hydroxyfentanyl,  $\beta$ -hydroxy-3-methylfentanyl, carfentanil, remifentanil, sufentanil, thiofentanyl, 3-methylfentanyl, ocfentanil, cyclopropylfentanyl, 3-fluorofentanyl, 3-furanylfentanyl, methoxyacetylfentanyl, valerylfentanyl, lofentanil and others.

Some analogues such as sufentanil or carfentanil are used in veterinary medicine. Carfentanil is still the strongest known opiate among the fentanyl analogues and is used as a tranquilizer of large animals, however

it is not officially allowed in human medicine (Hess: 2018). The basic structure of fentanyl can be easily changed with various substituents. Generally, fentanyl derivatives are called „fentalogs“.

However, synthetic opioids also have negative effects on the human body, namely nausea, constipation, miosis, and euphoria. The danger of higher dosing lies in the risk of rigidity of the lung muscles - therefore, respiratory arrest may occur (Lüllmann: 2004).

Fentanyl is one of the most abused drugs among drug addicts. Recent estimates suggest that the number of fentanyl overdose deaths has reached a tragic number of victims in recent years, mainly in the United States, at over 70,000 (Niles: 2020).

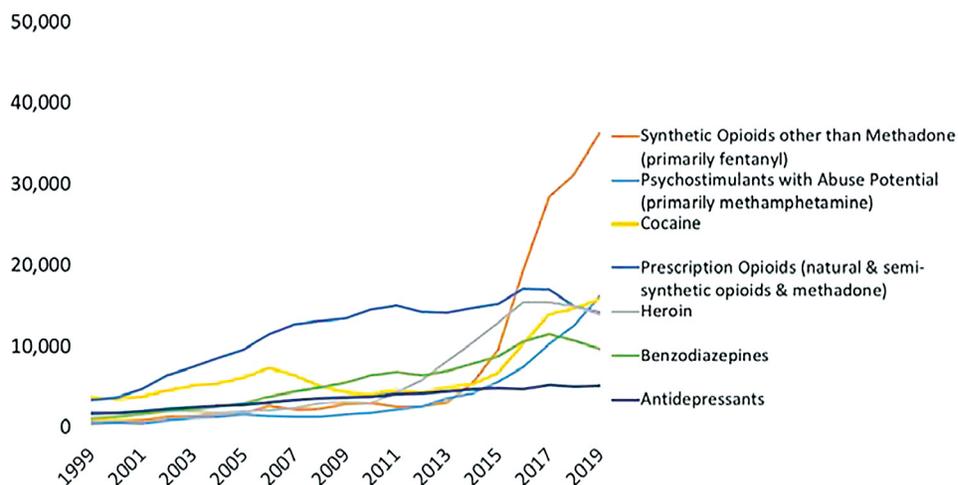


Fig. 2. Record an increase in the number of victims of synthetic opioid overdose



Being one of the simple and relatively cheap techniques designed mainly for quantitative analysis in difficult „field“ conditions, extraction spectrophotometry in the visible range of radiation can be utilized, using spectrometers of the Helios-Unicam series or Specord 40, Specord 200 and other types of these instruments (Jelínková: 2014).

Whether in terms of prevention or forensic research, analyses of not only drugs, but also other substances such as explosives and chemical warfare agents, are performed by sophisticated methods using liquid (HPLC) and gas chromatography (GC) combined with mass spectrometers with high scanning speed and programmable temperature. In the field of mass spectrometry, various types of ionization processes can be used: electron, chemical, electrospray, thermospray, accelerated atom or ion ionization and others (UNODC: 2017, Kahl: 2018).

The methods excel in high sensitivity and measurement speed, but the disadvantage is the lack of reference standards or the low profile of comparative samples in spectral libraries, especially in clinical or forensic laboratories (Marchei:

2018). In some experiments, coupled techniques with two LC-MS / MS mass spectrometers are preferably used to qualitatively identify fentalogs (Kraig: 2018). In recent years, companies have been offering mass detectors (TOF) with the highest mass resolution in the world (Pragolab: 2020).

Handheld spectrometers, such as the FT-IR True Defender, are used as a technique complementary to the First Defender Raman spectrometer for fast, yet accurate analysis in demanding conditions. The devices are resistant to impact and thermal shocks, they are waterproof and dustproof. Even in difficult conditions, users are able to perform fast and effective decontamination. Most types of this instrumental technique are intended for the immediate identification of test substances.

The MIL-STD 810G military standard is matched by the MIRA DS handheld Raman spectrometer, with a library of thousands of chemical data and HazMasterG3 applications that expressly assess the potential risks associated with hazardous substance analysis. The light, highly durable device weighing 0.7 kg can be used for work in critical conditions (Metrohm, 2021)



Fig. 4. Raman spectrometer MIRA DS

#### 4. EVALUATION OF THE POSSIBILITIES OF USING PSYCHOTROPIC DRUGS AS NON-LETHAL CHEMICAL WEAPONS

The use of opioids within the group of so-called non-lethal chemical weapons cannot be underestimated. It is a group of weapons, the effect of which is aimed at the incapacity of personal, while eliminating material damage to the surrounding infrastructure and the environment. The danger of these incapacitants lies primarily in the amount that is used and in the concentration. Not only can people be disabled, but people can also be killed. This assumption can be demonstrated by the use of opioids in Dubrovka.

These relatively readily available opioids could be misused in the event of a terrorist attack, posing an acute danger, especially in confined spaces. To eliminate the side effects of these „non-lethal weapons“, it is necessary to address the possibilities of their rapid and accurate detection and identification, effective respiratory protection and the possible need for decontamination.

The synthetic opioid fentanyl and its derivatives have occupied an important place in the discussion since the second half of the last century in terms of their possible use in the so-called „humane“ management of public order. However, a problem with the use of these highly effective chemicals

is the qualified determination of their desired concentration so as to achieve the desired effect. Associated with this is the issue of ensuring effective protection for the intervening components in the sense of eliminating unwanted exposure to the action of the contaminant and thus their decommissioning. In addition to the above uses of fentanyl and its analogs, alarming cases of overdose with these opiates in drug addicts are also known. Due to the growing number of cases of overdose with these substances, the negative effects on the health of both individuals and society as a whole on a global scale are being addressed.

The use of psychotropic drugs for any purpose must be approached with the utmost caution. For example, a fentanyl derivative, lofentanil, is much more toxic than nerve agents. It induces anesthesia at a dose of 0.025 micrograms per kilogram body weight, which is one hundred times less than the expected lethal dose of VX (Patočka: 2003). The toxicity value of substances is characterized by their therapeutic index, which is the ratio between the amount of therapeutic substance causing dangerous toxic effects and the amount causing the desired therapeutic effect. In other words: the ratio of the lethal dose for 50% of the

population and the effective dose for 50% of the population. According to some experts, a chemical with a sufficiently high, „safe“, therapeutic index is not currently known (Klotz: 2003).

## **5. CONCLUSIONS**

In its principles, the CWC unequivocally declares the exclusion of the deliberate use of chemical weapons and thus complements the commitments made in the 1925 Geneva Protocol. From the exact point of view, there is practically no strict division of chemicals into deadly and non-deadly. Any use of chemical weapons, even if they are said to be „non-lethal“, raises legitimate concerns about their possible misuse and carries with it the risk of possible adverse effects on the population, mainly related to the current lack of information on their pharmacological properties, adverse effects, decontamination and detection capabilities.

It is therefore meaningful to focus the attention of the professional public on adequate research of this group of chemical substances, especially in the field of their rapid detection using simple orientation tests or detection devices and sophisticated identification using adequate laboratory equipment.

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# THE MODIFICATIONS OF THE MIGRATION DETERMINED BY THE COVID-19 PANDEMIC

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*The emergence of the pandemic has fundamentally changed global human mobility. Until the outbreak of the COVID-19 pandemic, the World Bank, the International Monetary Fund, the International Monetary Organization and the International Organization for Migration considered in their studies and reports that migration could bring substantial global benefits to economies in terms of GDP per capita and growth of standard of living. But the key to achieving these benefits was to address the challenges of short-term migration and, in particular, to ensure the integration of migrants into the labor market. The paper aims to discuss the implications of the COVID 19 pandemic on long-term migration after people, health systems and the economy recover.*

**Key words:** migration, economic growth, human capital

**Classification JEL:** J0, J2, J6

## 1. INTRODUCTION

In the last twenty years, the active population in the EU27 has seen a continuous decline, which can be explained by two causes: the aging of the European population due to the increase in the number of retired people, while the number of people falling into this category (years) is declining and declining employment due to the restructuring of many activities under the influence of market demand and ethnic progress.

Employment is, in any society, one of the essential conditions for ensuring macroeconomic balance and social and political stability. It is a desideratum of major interest both for the economic agents and for the social partners. It is a dynamic process with a high degree of complexity, being essential for the sustainable development of society, with various implications (economic, psychosocial, educational-cultural, and political). (Sirkeci, 2020)

Migration is a phenomenon that has manifested itself since the beginning of mankind. It has manifested itself with different intensities over time, taking on new forms. Migration is on the rise in many countries, which has led in the long run to the emergence of those multicultural societies. Thus, a significant part of the developed countries have been transformed into diversified, multiethnic societies, and those that have not yet reached this level, have been decisively oriented in this direction. (Borjas, 2020)

According to OECD statistics, there has been a recent increase in the number of foreign workers in developed European countries. Immigrants are generally younger, being distributed in all sectors of the economy: agriculture, construction, tourism, IT services, the hotel sector, catering. In some sectors, the labor force coming from abroad has a higher share than the domestic labor force.

Achieving the free movement of people through the creation of a common market and the gradual harmonization of the economic policies of the EU member states is a priority Community objective. The mention of this principle in the Treaty establishing the European Economic Community indicates the importance attached to it. However,

EU member states face very different situations regarding the phenomenon of migration: different migration history, different level of economic dependence on immigration and, last but not least, different concerns about recent migration trends. .

Given that economic migration contributes directly to the economic and social development of the European Union, this phenomenon is expected to increase and play an increasingly important role in meeting the needs of the European labor market, taking into account demographic decline and aging in the EU. (Gelatt, 2020)

Migration can have important benefits for global economic well-being. When migrant workers move, for example, from a country where there are large surpluses of labor in one sector or another, travel can improve economic conditions in both countries (origin and destination). Thus, both countries can benefit from these trips.

## 2. THE COVID-19 DISRUPTIONS ON THE MIGRATION

In the current global situation where Humanity is affected by COVID-19, people who travel to and from work on a regular basis may not be able to do so in the future.

This situation will have family, economic and potential food security implications. Migrant workers currently abroad may not be able to get home, and families already facing complicated immigration and visa regimes may experience prolonged separation for a whole new reason. (Kluge, 2020)

If migrant workers working in agricultural fields can no longer travel, these restrictions will be associated with large disruptions to the global food supply chain that will have a long-term impact on global food security. (Pécoud, 2020)

Thus, prolonged migration disruptions will be able to reorient agricultural production and value chains to the detriment of food security, especially in developing countries.

In most industries, the inevitable unemployment related to COVID-19 will undoubtedly target migrant workers, many of whom have temporary visas.

The inability of the workforce to move efficiently - or not at all - will have an impact on future global output, while migrant families will be under greater financial stress. Regarding global inequality, it is likely to increase in the medium and long term, in part due to the lasting impact of migration and the pandemic. If the labor force

of migrants abroad is significantly disrupted by the economic shocks due to the COVID -19 pandemic, these sources of income for families in the developing world will have an impact, creating ripple effects in their economies and, in turn, widening the difference between richer and poorer countries. (Guadagno, 2020)

As in many other crises, migrants may be particularly vulnerable to the direct and indirect impacts of COVID-19. Their ability to avoid the infection, receive adequate health care and cope with the economic, social and psychological impacts of the pandemic can be affected by a variety of factors, including: their living and working conditions, lack of consideration of their cultural and linguistic diversity in service provision, xenophobia, their limited local knowledge and networks, and their access to rights and level of inclusion in host communities, often related to their migration status (Liem et al., 2020). Ensuring that all groups of migrants, regardless of their status, have access to health care is a necessary condition for effective responses to the COVID-19 outbreak (WHO Europe, 2020). Many countries were either providing universal health coverage before the start of the pandemic or have removed obstacles hindering migrants' access to COVID-19 testing and treatment since then.

Regarding the data about migrants, European Commission has released a report on 29 January 2021, where it was mentioned that in the first 10 months of 2020, 390,000 asylum applications (including 349,000 first time applications) were lodged in the EU, 33% less than in the same period of 2019. Member States reduced their backlogs of pending asylum cases. At the end of October 2020, the number of pending cases was 786,000, 15% less than at the end of 2019. This still means that on the EU level, the backlog represents more than a year's worth of new applications – with significant variations between Member States. The recognition rate, or the percentage of asylum applications that resulted in a positive decision at first instance (before any appeals), including decisions granting humanitarian status, stood at 43%. (EC, 2021)

A 10% decrease in the number of irregular border crossings to the EU (114,300 in the period January–November 2020) was observed compared to the same period in 2019, the lowest level in the last 6 years. While there was a significant decrease in irregular arrivals in countries of first entry along the Eastern Mediterranean (-74%, 19,300), the decrease was predominantly due to low arrivals from Turkey to Greece, where the situation is likely to change

depending on different factors including political and economic developments in Turkey. (EC, 2021)

Despite overall reductions, irregular arrivals via the Central Mediterranean (to Italy and Malta) increased (+154%) compared to the same period in 2019. There were over 34,100 such arrivals in 2020, compared to almost 11,500 in 2019, with the majority of people arriving in Lampedusa. With the exception of the month of March, arrivals consistently exceeded 2019 levels. (EC, 2021)

The arrivals in Spain (in particular the Canary Islands) were significantly increased (+46%, 35,800) in 2020 compared to 2019. In Spain, the impact of COVID-19 restrictions on irregular arrivals was temporary: since August 2020, the number of arrivals to Spain was consistently greater than in 2019. In both cases, many new arrivals originate from countries suffering from the economic downturn rather than conflict. A decline in global remittances is also likely to contribute to this trend. Until the pandemic is contained and economic recovery is underway, poor prospects of employment and healthcare in countries of origin will remain an incentive for people to come to the EU. Crossing the Mediterranean Sea remains dangerous. Despite

decreased departures in 2020, 1,754 persons were reported dead or missing compared to 2,095 persons in 2019. (EC, 2021)

The number of asylum applications in the first quarter of 2020 has remained on the level of the same period in 2019 and has significantly decreased since then. In April 2020, there was a big huge drop in the overall number of applications for international protection lodged in the EU Member States, continuing the decline which began in March. The ongoing COVID-19 pandemic and the respective emergency measures introduced by the EU Member States, including the suspension of applications' registration, had an impact on the inflow of applications.

The pandemic has also affected employment and migrants' integration as closures and social distancing measures have made an impact on administrative procedures for obtaining residence and work permits, language acquisition, and integration programmes (CE, 2020). At the same time, European countries are implementing some good practices that support migrants across various integration areas (Council Europe, 2020).

The pandemic has highlighted the role that migrant workers play in Europe's coronavirus response;

according to study by the European Commission's Joint Research Centre, 13 per cent of key workers are immigrants, and in most countries, the share of Extra-EU key workers is larger than the EU-mobile one (JRC, 2020).

### 3. CONCLUSIONS

The global COVID-19 pandemic has brought more means to normal economic migration than in previous years. Thus this pandemic brought a combination of factors: unusual economic implications, global inequalities, political and health conflicts that produce in the long run much vulnerable to migrant populations and increasing controllable migration.

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