Emotional Intelligence and work performance in the Air Force: an empirical study

Inteligencia Emocional y rendimiento laboral en el Ejército del Aire: un estudio empírico

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ABSTRACT. This study explores the basis of emotional intelligence and attempts to clarify the possible relation between emotional intelligence and work performance within the framework of the Spanish Air Force. The number of studies devoted to exploring empirically these topics are not numerous (Goldberg, Sweeney, Merenda & Hughes, 1996; Nikoui, 2015; Øvrebø, 2017) and there are even less of those related to the Spanish Air Force. The participants in this project were the future first- and fifth-year officers at the Spanish Air Force Academy. A validated questionnaire was used for data collection. Our results revealed, among others, that the degree of emotional intelligence is high among the future officers in the Spanish Air Force.

RESUMEN. Este trabajo explora las bases de la inteligencia emocional intentando aclarar las posibles relaciones entre ésta y el rendimiento en el trabajo en el marco del Ejército del Aire español. El número de estudios dedicados a examinar empíricamente estos temas no son numerosos (Goldberg, Sweeney, Merenda & Hughes, 1996; Nikoui, 2015; Øvrebø, 2017) y existen menos aún de aquellos relacionados con el Ejército del Aire español (Rodrigues-Goulart, 2006). Los participantes de este proyecto fueron los futuros oficiales de primer y quinto curso de la Academia General del Aire. Se utilizó un cuestionario validado para la recogida de datos. Nuestros resultados revelaron, entre otros, que el grado de inteligencia emocional es elevado en los futuros oficiales del Ejército del Aire español.

KEYWORDS: Emotional intelligence, Work performance, Spanish air force, Validated questionnaire.

PALABRAS CLAVE: Inteligencia emocional, Rendimiento en el trabajo, Ejército del aire español, Cuestionario validado.
1. Introduction

1.1. Emotional Intelligence: Origins and theories

The term Emotional Intelligence was reportedly used for the first time by Wayne Payne (1986). He developed the term Emotional Intelligence in his doctoral thesis, “A study of emotion: developing emotional intelligence; self-integration, relating to fear, pain and desire”. In his paper, Payne wanted to study and discover the nature and characteristics of emotion and emotional intelligence, to state a “theoretical and philosophical framework” after he discovered that the world was suffering from “emotional ignorance” (p. 23), where many of the problems society was facing were related to emotional states like depression, addiction, fear, pain, etc. He realized that courses where the nature of emotions and emotions themselves were taught did not really exist. His work served as a basis for the next researchers who emerged on this field. Wayne Payne’s assertions opened a new area where enormous findings were to be made. In his dissertation, Payne sought to create a guidebook to help individuals develop emotional intelligence as he highlighted in the introduction of his work.

The way he approached emotional intelligence can be summarized in three main areas. The first area targets “raising important issues and questions about emotions”. The second area would be “by providing a language and framework to enable us to examine and talk about the issues and questions raised” while the last area was to clarify “concepts, methods and tools for developing emotional intelligence” (Payne, 1986:23). After Payne’s work numerous authors decided to develop and study the term further.

Peter Salovey and John D. Mayer, continuing with Wayne Payne’s work, used again the term 'Emotional Intelligence' in 1990 when they stated that EI is "a form of social intelligence that involves the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them, and to use this information to guide one’s thinking and action" (Salovey & Mayer, 1990:189). They realized that humans need to be able to process their own emotions and the emotions of others. In this way, those who achieved high levels of emotional intelligence could take advantages for themselves and others in many different ways in almost every aspect of life.

However, it was not until 1990, when Daniel Goleman published his book "Emotional Intelligence, why EI matters more than IQ” that the concept of EI became part of society’s culture and started to be applied worldwide (Goleman, 2008).

Goleman’s aim with his book, as he writes on his website (Goleman, n.d.), was to hear two strangers having a conversation where EI was brought up and they would both know what it meant. As he later recognizes, “little did he know” about the impact EI had. The critical acclaim EI and his book would garner over 5 million copies sold and the book translated to more than 30 languages. But the biggest surprise for Goleman was the “impact it had in the world of business”, especially in the areas of “leadership and development” later to be developed in this work (paragraph 14).

In Goleman’s own words, before introducing his work in the market, IQ was established as “the standard of excellence in life” but there he was with a “new way of thinking about the ingredients of life success” (paragraph 2). The Harvard Business Review (as cited in Goleman, n.d.) defined EI as “one of the most influential business ideas of the decade”, being “a ground-breaking, paradigm-shattering idea” (paragraph 14).

Figure 1. Time Magazine Cover (1995). Source: Time Magazine.
Nowadays, it can be assumed that emotional intelligence has gained relevance in almost every corner of the world. It has raised the interest of many people and researchers who have written many magazines, books, newspaper articles, scientific experiments, etc. The Time Magazine brought EI up in 1995 with this cover (Figure 1) where the following statement was made: “Emotional intelligence may be the best predictor of success in life, redefining what it means to be smart” (TIME, 1995) to its more than 22 million people worldwide in 2017. Furthermore, if the words emotional intelligence are entered into Google the searcher finds as many as 17,000,000 (4th July 2017) results, which shows how EI forms a fundamental part of today’s society.

There are many authors who contributed enormously to studies on EI but due to the extensiveness of this scholarship, only three models will be studied in greater depth. All of them help us understand what EI means (Spielberg, 2004). These three will be:

- Salovey-Mayer’s model, which characterizes EI as the capacity to see, comprehend, oversee, and utilize feelings to make thinking easier, assessed by a capacity-based measure.
- Goleman’s model, which sees EI as a variety of aptitudes and abilities that drive leadership execution, measured by a multi-rater evaluation.
- Bar-On model, which portrays a cross-segment of interrelated emotional and social capabilities, abilities and facilitators that have an effect on intelligent conduct, measured by self-report.

1.2. Characteristics of people with high emotional intelligence

Emotional intelligence has turned out to be a progressively mainstream as a measure for distinguishing individuals who are successful in life, and as an instrument for reaching this success. Firstly, what emotions are should be analyzed (Table 1).

Emotion originates from the Latin verb emovare, which implies continually changing and moving (Callahan & McCollum, 2002). Emotions assume a critical part in human natural selection and adjustment as they influence the way we see our environment, how we understand it, and how humans respond to this awareness. The way we are able to manage our emotions is related to how well-prepared the rational brain is to overwhelm body responses (Li, 2012).

Emotions assume a key part in the advancement of learning since it is through our subjective emotional world that we forge our personalities and implications out of reality.

As Darwin estimated, analysts have discovered that emotions fulfill a natural need. They sign to us when there is something wrong or when our necessities are not being met. When we require something that we cannot or that we are not getting consistently, we will experience a negative feeling. This could be outrage, fear, dissatisfaction, wretchedness, or some other negative feeling. There are social, psychological, and even physical outcomes to our capacity to manage our feelings. Since our feelings are a way our body can converse with us, we disregard them at our own particular risk. Disregarding emotions guarantees misery. Also, it can prompt physical ailment and even early aging (McPheat, 2010).

<table>
<thead>
<tr>
<th>Facets</th>
<th>High Scorers perceive themselves as being or having...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptability</td>
<td>Flexible and willing to adapt to new conditions</td>
</tr>
<tr>
<td>Assertiveness</td>
<td>Frontal frank and willing to stand up for their rights</td>
</tr>
<tr>
<td>Emotion expression</td>
<td>Capable of communicating their feelings to others</td>
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<tr>
<td>Emotion management</td>
<td>Capable of influencing other people’s feelings</td>
</tr>
<tr>
<td>Emotion perception (self-and others)</td>
<td>Clear about their own and other people’s feelings</td>
</tr>
<tr>
<td>Emotion regulation</td>
<td>Capable of controlling their emotions</td>
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<tr>
<td>Self-Esteem</td>
<td>Successful and self-confident</td>
</tr>
<tr>
<td>Self-Motivation</td>
<td>Driven and unlikely to give up in the face of adversity</td>
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<tr>
<td>Social competence</td>
<td>Accomplished networkers with excellent social skills</td>
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<td>Stress management</td>
<td>Capable of withstanding pressure and regulating stress</td>
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<td>Trait empathy</td>
<td>Capable of taking someone else’s perspective</td>
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<tr>
<td>Trait happiness</td>
<td>Cheerful and satisfied with their lives</td>
</tr>
<tr>
<td>Trait optimism</td>
<td>Confident and likely to ‘look on the bright side of life’</td>
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</tbody>
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Table 1. High scorers on emotional intelligence. Source: (Furnham, 2012:36).
Individuals are in some cases successful not due to their knowledge, but rather because of their capacity to interact with individuals socially and emotionally by utilizing charming temperament in their interchanges (St. Clair, 2004). We are going to consider two different leaders. Firstly, one who is very intelligent and analytical having a high IQ. He possesses more knowledge than anybody. Be that as it may, he gets fretful when individuals do not comprehend him promptly, and he explodes failing to transmit his knowledge to other employees. On the other hand, the other leader just got the employment and is slower to adapt to the running of the enterprise. Yet, he is kind and nice with individuals. He controls his feelings and comprehends what makes a difference to his laborers. Who does common sense say is more viable and efficient in his working environment? The second supervisor is more powerful and his impact should be better.

Despite the fact that the primary supervisor has a higher IQ, the person who controls his feelings and comprehends what is important to his subordinates is the sort of leader that can impact and spur individuals to action. He realizes what is really essential and he is a fantastic communicator. His emotional solidness makes him adaptable and inventive when tested, and his team likes and respects him. With this basic example, it has been shown that success as a leader is not only about knowledge. Even though knowledge or the ability to reason legitimately about data is truly needed among alluring qualities of a leader, high emotional intelligence also takes a solid part in the working environment (Leadership essentials: Leading with emotional intelligence, n.d.). Individuals with elevated amounts of EI have a natural ability for understanding emotions that can be used to move individuals to react in a good way to them (St. Clair, 2004).

When this example is connected to other aspects in life, being intelligent, that is, having a high IQ, is not what is going to bring anyone happiness. Similarly, having a high IQ will not guarantee anyone success at work, nor will it guarantee success in life. Being smart will not enable individuals to know themselves, their feelings, their expectations, to be successful in relationships, motivations, control of oneself etc.

Utilizing Bar-On’s Emotional Quotient Inventory, Newsome, Day and Catano (2000) found that the final score of emotional intelligence is not altogether associated with scholastic accomplishment. This is conceivable as scholarly outcomes are more identified with a person’s IQ (Goleman, 1998). Emotional intelligence seems to be more of a measure in foreseeing criteria in life settings and business-related results. For instance, when utilizing both (emotional intelligence & IQ), Bar-On’s Emotional Quotient Inventory found that emotional knowledge was decidedly connected with life fulfillment, human relationships and quality of their lives (Prentice, 2008).

At the point when individuals have not built up their EI, they have a tendency to encounter difficulties and misfortunes. They either cannot move beyond these sorts of circumstances, or they battle past them. They may respond adversely to others individuals included, which brings about expanded hostility and trouble in being productive. They may think about things personally that in fact are not intended to be. They might see it as if they have been mistreated as opposed to the feeling of being engaged. With everything taken into account, these sorts of circumstances keep them from being as effective as conceivable in the work environment (Goleman, 1998).

Somebody who has an exceptionally strong EI still faces these sorts of circumstances, much the same as every other person. Nonetheless, the way they respond is extraordinary. They can stop and investigate what they are feeling, and they try to see how those sentiments are affecting their conduct and their decisions. They can perceive how other individuals are feeling and identify with them.

They would then be able to choose the conduct and activities that will be helpful not only to move past a circumstance, but rather to find a solution to it –both inside themselves and in relation to others. Also, as they find themselves in these situations over and over, they will get speedier and quicker at recuperating from adversities. Besides, they can consider difficulties to be learning encounters and opportunities to enhance their associations with others. At that point these barriers never again stop them, yet rather enable them to build up their potential (McPheat, 2010).
1.3. Emotional Intelligence in the military

As members of the military and other forces with the same purpose, it would be useful to analyze what impact the discovery on EQ might have within the group and how it can help develop their mission in a better way. It is quite obvious that the military environment is different from most workplaces. According to article 8 of the Spanish Constitution: “The mission of the Armed Forces, comprising the Army, the Navy and the Air Force, is to guarantee the sovereignty and independence of Spain and to defend its territorial integrity and the constitutional order.” Under this order, the Armed Forces have to deal everyday with difficult tasks, where there is a high level of risk and the slightest misdoing might have catastrophic results, leading to loses of lives. The environment where the Armed Forces play their role is very unstable and therefore each member should adequately be prepared to react in an effective way.

Nowadays, even the youngest and lowest-ranking soldiers should effectively interact and handle local people from groups that do not share their religious convictions, social viewpoints or traditions. These social contrasts bring a layer of vulnerability into war operational contexts where there are instances of extraordinary anxiety that regularly add to compelling emotional reactions, for example, uneasiness or outrage. These emotional reactions can lead warfighters to settle on judgments and choices they would not generally make. In high-stakes circumstances, even the smallest error may have appalling results; consequently, a need exists to equip Warfighters with aptitudes that enable them to perceive and control their feelings (Oden, Lohani, McCoy, Crutchfield & Rivers, 2015).

More important is the fact that the leader of these soldiers must be even more prepared. It is widely known that leadership is a basic and important ability in any association or enterprise. Nevertheless, in the armed service, effective leadership is the difference between the survival of a group or death. Military leaders are in charge of the preparation, training and morale of their subordinates, the status of which may decide if those subordinates return home securely and alive after a mission. Military leadership once in a while happens in an office setting and can require conventional authority aptitudes, yet military leaders should likewise be poised to lead in threatening conditions. A military leader, in this manner, must have the capacity to cater his identity characteristics and leadership style to the circumstances and the outside variables of the circumstances that may or not be inside his control (Hudson, 2016).

Military leaders are warriors, moderators and ambassadors who arrange, enhance, facilitate and execute obligations inside the country and abroad. The Army seeks prepared, nimble, versatile and multi-talented leaders to take decisions in a period of quick change. The Army needs leaders who can cope with present and future difficulties while applying lessons learned over the past. To be effective, Army leaders should persistently assemble and refine their leader qualities, look to improve proficient information, and apply very important leader skills as they move from administration positions to the hierarchical and key levels (Taylor-Clark, 2015). The leader is the person who every follower in the organization will try to imitate and follow. He should be the one with the best personality and knowledge out of the group. While there are no impeccable men, there are the individuals who turn out to be moderately ideal leaders of men since something brings out the best of every man who follows them. That is the method for human instinct. Minor deficiencies do not debilitating the working steadfastness, or development, of the devotee who has discovered somebody whose quality and personality he regards worthy of copying. Thus, every single leader around the world should be an example to follow and an inspiration (U.S. Department of Defense, 2008).

Dwight D. Eisenhower stated that: “The supreme quality for leadership is unquestionably integrity. Without it, no real success is possible, no matter whether it is on a section gang, a football field, in an army, or in an office”. On the battlefield, integrity is more fragile than probably anywhere else. A combat leader must have the ability to understand and control his own emotions, the emotions of others and the emotions of groups in order to maintain his integrity, exactly what we understand today by emotional intelligence. It is not only a question of working only on developing splendid strategic actions to achieve success in a war but also on the personality and traits of a leader.
While encumbered by huge asset constraints, military leaders need to decide on fast choices in conditions described by instability and erosion. The Army needs its leaders to build firm groups, to develop trust, and to cultivate positive atmospheres. Armed force leaders must create and impart a common vision and set clear mission objectives for the company or unit to be fruitful responders of the calling and defenders of the country. They have a massive duty to guarantee the present and future achievement of the military (Taylor-Clark, 2015). These necessities are less about the concrete abilities of cognitive intelligence, specialized information and strategic capability and more about the delicate aptitudes of emotional knowledge. The emotionally well-balanced individual will be capable of anticipating misfortune and its effects and additionally suspecting the potential reaction of others to difficulty. This will enable him to create suitable reactions to difficulty and solve situations rapidly. Emotional intelligence enables people to manage the anxiety by understanding their feelings and also the feelings of others (Sewell, 2011).

The ideas of emotional intelligence, in any case, have not been explicitly referenced in the scholarship of military leadership. Surely, a few qualities of good leaders could be named as those controlled by a man with high emotional knowledge, however, that term has not been utilized. Faith in one’s capacities, faking that conviction and encouraging confidence in one’s subordinates are vital in the military profession, yet military leaders are not given the instruments to develop their emotional intelligence (Hudson, 2016).

In what ways can the Armed Forces transform great leaders into extraordinary leaders? This examination contends that an immediate connection of emotional intelligence with this transformation exists. Specialized abilities and IQ form the basic level aptitudes for administration positions (Goleman, 1998). Fantastic preparation, a sharp, logical personality and incredible thoughts are just one piece of what makes an extraordinary leader. Extraordinary leaders have a high level of emotional intelligence.

Another big issue related to emotional intelligence in the military is the psychological damage or trauma going through battle experiences causes to soldiers and their inability to cope with the emotions which appear after, changing their lives forever.

In such a difficult situation, an extensive number of veterans encounter important negative feelings following their war experiences. Sentiments of blame, disgrace, dismissal, seclusion, estrangement, vulnerability and dread are normal. In many examples, these negative emotions result in flashbacks and serious normalization issues. Veterans battle to adjust to regular citizen life and family circumstances. Numerous soldiers who have served become estranged from loved ones because of the poignancy and gravity of their encounters. They experience issues reacting and managing circumstances in a social environment. Emotional intelligence offers a solid way to temper the negative effects associated with being a member of the military. It grows intrapersonal and relational types of abilities permitting higher versatility. Proactive consideration and ability building is a more positive, more productive, approach to help the mental prosperity of members of the military (Jerus, 2015).

2. Objectives and key terms

Our main aim in this research is to explore emotional intelligence among the future officers of the Air Force and its relation to performance in the workplace.

Several research questions have been formulated in order to conduct this study:

1. How does emotional intelligence evolve during the academic tenure of students at the academy?
2. In what ways is emotional intelligence different when comparing Prior Enlisted and Direct Entry cadets?
3. Is there any link between emotional intelligence and military/academic achievements at the academy?

These questions will be approached by examining the following aspects:

1) Emotional intelligence within one-self and the environment


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2) Emotional intelligence towards other people

A quantitative or neopositivist methodological approach has been adopted in this study.

The terms which need clarification are defined for the purposes of the present project. They are listed in alphabetical order.

Academic/Military ranking: This refers to the position our future officers at the Spanish Air Force Academy occupy in terms of the marks they obtain in their military and university subjects (the latter from the Degree in Industrial Organization Engineering, University Center of Defense).

Cadet: According to Bowyer (2004:37), a cadet is “a schoolboy or girl who is a member of an official organization, which is designed to give young people a taste of life in the Armed Forces”. In this study, although the words cadet and second-lieutenants are used to make a distinction between students from the 1st and 5th year of the Spanish Air Force Academy, on some occasions, for the sake of economy, the generic word cadet will be employed for both groups of students.

Emotionality: According to the authors of the questionnaire used in the present project, that is, Petrides and Furnham (2014), this involves emotional expression, trait empathy and quality of relationships.

Direct entry vs. Prior enlisted: Direct entry refers to the students who accessed the Spanish Air Force Academy right after finishing PAU (Pruebas de Acceso a la Universidad) and who, by the time they joined, did not have any military background, as opposed to prior enlisted students.

Self-control: Traditionally, a capacity to manage oneself as one judges best when tempted to do otherwise. Self-control is the contrary of weakness of will or akrasia. Aristotle distinguishes self-control (enkkrateia) from temperance (sophrosune). The latter, a moral virtue, is possessed only by individuals who have no improper or excessive desires regarding bodily pleasures and pains. Self-controlled individuals have these desires, but they resist them, acting as they consider best (Hondering, 2005).

Sociability: It is a personality trait which involves the ability to be fond of the company of others. People who are sociable are inclined to seek out the opportunity of social contact with others (Psychology Wiki, n.d.). According to the authors of the questionnaire used in our study, that is, Petrides and Furnham (2014), sociability is also related to emotion management, assertiveness and social awareness.

Well-being: It can be defined as the state of feeling happy and healthy, of having a good quality of life. Well-being is not only related to people’s mental and physical health, but also satisfaction with their lives and their social wellness (Castree, Kitchin & Rogers, 2013). According to the authors of the questionnaire used in our study, that is, Petrides and Furnham (2014), well-being refers mainly to self-esteem, happiness and optimism. Therefore, those who score high marks on well-being in our project are expected to be successful, satisfied with their lives and optimistic about their future while often focusing on the happier side of things, in general.

3. Methodology

This section has three main parts: the participants, the instruments and the procedure, each of which is devoted to the description of one specific aspect of the methodology of this research project.

3.1. Participants

Four different groups participated in the development of the study.

First-year cadets were separated into two groups according to whether or not they possessed military
background before enrolling the Spanish Air Force Academy. This first group was comprised of cadets who had all passed the public exams to gain access to the Armed Forces Officers’ academies. Moreover, they all had the Spanish PAU passed. Thus, the requirements for a person to be chosen as a participant for group 1 were as follows:

- Age: Between 18 and 20 years
- Direct Entry
- Member of CGEA EOF 1st year

Similar to the first group, group 2 was also formed by first-year cadets but only by those who had past experience working already for the Armed Forces, no matter for how long. Hence, the requirements for a person to be chosen as a participant for group 2 were as follows:

- Age: No requirements for age
- Prior enlisted
- Member of CGEA EOF 1st year

Just as cadets were separated into two groups for the first year, exactly the same was done for the fifth-year second lieutenants. Being in the fifth year implies that the examined subjects had all of their university degree and military subjects passed with just their fifth-year left. Their fifth year is devoted to their final degree project and different internships in order to obtain the Industrial Organization Engineering Degree and the Lieutenant rank. Consequently, they have already experienced most of their formation at their respective academies.

Therefore, the requirements for a person to be chosen as a participant for group 3 were as follows:

- Age: Between 22 and 24 years
- Direct Entry
- Member of CGEA EOF 5th year

And, finally, for group 4:

- Age: No requirements for age
- Prior enlisted
- Member of CGEA EOF 5th year

It is important to notice that no distinction was made for students specialized on DCA (Defense and Air Control) and Vuelo (Flight), or between females and males.

A total number of 113 members of the Spanish Air Force Academy participated in this study. Of these, 65 belonged to the first class while the remaining 48 to the fifth year. These numbers are illustrated in Figure 2.
As explained above, a further division was made in order to know which students of these classes were 

prior enlisted. From Figures 3 and 4, we observe that for the first-year class, there are 9 students who are prior 
enlisted out of the 65. For the fifth-year class, 25 participants out of the 48 were part of the Armed Forces 

already before joining the Spanish Air Force Academy.

3.2. Instruments

In order to succeed in analyzing emotional intelligence among the Air Force academy students, a validated 

questionnaire and a further question which would contribute to better understand the results were used.

The TEIQue-SF (Petrides & Furnham, 2014) was employed. It stands for “Trait Emotional Intelligence 

Questionnaire – Short Form (TEIQue-SF)” and it was a 30-item questionnaire designed to measure global trait 

emotional intelligence (trait EI). It was based on the long form of the TEIQue (Petrides & Furnham, 2003). 

Items were responded to on a 7-point Likert scale. The TEIQue has been constructed with the aim of 

providing comprehensive coverage of the trait EI domain (Petrides & Furnham, 2001). We could also found 

four sub-scales: well-being, self-control, emotionality and sociability (Petrides & Furnham, 2003). Following 

the questionnaire there was one last question for students in 5th year which asked them for their academic 

ranking.

The validity of the TEIQue-SF has been proven numerous times, and it is embraced as a reliable source 

for measuring Emotional Intelligence as a whole as well as for the further divisions that we will make. Validity 

tests include up to 100 incremental-validity analyses as well as 23 different studies that support the reliability 

of the results our research will have (Andrei, Siegling, Aloe, Baldaro & Petrides, 2016).

Apart from the questionnaire itself, in the introduction to the questionnaire, there was a brief text in order 

to inform the participants of the objective of the questionnaire was well as the survey designer. It is also 

important to highlight that the introduction helped motivate participants to fill it in with an assurance of 

anonymity and confidentiality of his/her answers as well.

3.3. Procedure

With the end goal of exploring different aspects of emotional intelligence among the future officers of the
Air Force, a careful and meticulous process was carried out to ensure clarity and prevent any ambiguity in the results.

The questionnaire TEIQue-SF was selected because of numerous studies defending its validity and effectiveness. As stated earlier, the questionnaire was created with the aim of being capable of measuring global trait emotional intelligence (Petrides & Furnham, 2014). In addition, the original language of the questionnaire was Spanish and our participants were students at the Spanish Air Force. It was believed that because of these factors and the brevity of the questionnaire, it was the best option for this research.

Afterwards, the participants were chosen according to the criteria mentioned before. Groups from different years were created in order to successfully answer the question of how emotional intelligence develops throughout the formation of the future officers at the Spanish Air Force Academy. The first and fifth year are the most separated in terms of time spent at the academy, creating a better scale for which to measure the evolution of EI.

Taking into account that we also intended to compare emotional intelligence between prior enlisted future officers and direct entry future officers, the group was divided further and participants were asked to indicate whether they had had previous professional military experience prior to joining the academy.

Due to the fact that in another research question formulated we intended to determine whether there was any relationship between academic/military achievements and emotional intelligence, one last question was added and asked to the fifth-year second-lieutenants: their present academic/military ranking.

The questionnaire was submitted to the Internet and only those who received a link had access to it. The website specialized in online surveys called “Survio” was utilized. Participants were asked to fill out the questionnaire through the phone application Whatsapp where they were given the URL: https://www.survio.com/survey/d/L3Z9i9S4j7M8U5B6L. For the fifth-year class, every participant was asked individually to complete the questionnaire (since they are classmates and are in regular contact) while the first-year cadets were asked to fill out the questionnaire by their AASI, that is, their military boss. Prior to filling the questionnaire, an invitation to complete it was available with the intention of motivating and thanking students who would return it.

All participants interested had already submitted their responses by the end of October, where the data were then collected and used to meet the objectives of this work.

4. Data analysis

Results from the questionnaire were assembled and introduced into the software Statistical Package for the Social Sciences (SPSS), a useful tool for analyzing data owned by the company IBM. The 23rd edition was used (SPSS, Inc., an IBM Company, 1989, 2018).

Firstly, in order to explore the data in English (the language of this paper), the items from the questionnaire needed to be translated into English. On the other hand, before starting analyzing, given that the questionnaire comprised a blend of adversely- and positively-worded questions (we must remember that answers to the TEIQue-SF questions were based on a Likert-type scale, e.g. 1 strongly disagree and 7 strongly agree), an aggregate scale scoring was derived by adding the score on everything in the scale (after turning around scoring for negative things). The higher the score, the higher the attribute EI of the person (Zampetakis, 2011).

Likewise, in order to work with data more in detail, four divisions of emotional intelligence were taken into account: well-being, sociability, emotionality and self-control (Petrides & Furnham, 2003). Every single question which forms the TEIQue-SF questionnaire is related to one of the areas addressed above in the following way (Table 2):
With the aim of exploring emotional intelligence (and the two aspects mentioned when referring to the objectives in § 3), according to this division, well-being and self-control would fall purely in the category of emotional intelligence within oneself while sociability would directly be related to emotional intelligence toward others. On the other hand, emotionality would be linked to both, so we find it best to divide emotionality into two fields, one for oneself and one toward others. Emotionality will be split as follows (Table 3):

<table>
<thead>
<tr>
<th>Well-being</th>
<th>Self-control</th>
<th>Emotionality</th>
<th>Sociability</th>
</tr>
</thead>
<tbody>
<tr>
<td>5, 9, 12, 20, 24, 27</td>
<td>4, 7, 15, 19, 22, 30</td>
<td>1, 2, 8, 13, 16, 17, 23, 28</td>
<td>6, 10, 11, 21, 25, 26</td>
</tr>
</tbody>
</table>

Table 2. Division of TEIQue-SF questions into different fields. Source: Self made.

After we had the data classified, different variables were created in order to help have a better understanding of all the available information and reach deeper conclusions. These variables were introduced in the data matrices of the SPSS.

Essentially, for every student, SPSS contained data that included: Student number, in which class year he/she was in, method of accessing the academy, every score for the 30 questions that he/she received in the questionnaire, and the total score on Global Trait Emotional Intelligence, well-being, self-control, emotionality within oneself and toward others, and sociability. Also, for the fifth-class cadet year the academic ranking was known.

Thus, after submitting the data on SPSS statistics, it was possible to calculate the average that every single student scored for each field as well as for Emotional Intelligence as a whole. This calculation was made by adding the scores of questions and dividing the final figure by the number of questions comprising the different domains. Emotional Intelligence as a whole, or Global Trait Emotional Intelligence, was calculated by adding the scores of the 30 questionnaires and dividing the final figure by 30.

The outcomes that were obtained were subjected to different statistical analyses which mainly incorporated: univariate analysis techniques (frequency and percentage counts were conducted) and bivariate analysis techniques. Moreover, SPSS provided the opportunity to create tables and graphs, which were essential to better convey the results. The main graphs utilized bar and pie charts.

Moreover, association tests were employed to calculate the degree of association between the different variables that were created. For this purpose, a margin of error of $\alpha = 0.05$ was assumed, typical in social and human sciences. Pearson’s chi square tests were employed to discover if there was a statistically significant relationship between the variables at issue.

In every case where it was found that there were statistically significant associations (at the alpha level above), symmetric and asymmetric computations of association were quantified. This method helped shed light on the degree of association between the two variables being analyzed. In particular, the Uncertainty Coefficient enabled to determine to what extent the dependent variable can be elucidated by the independent variable and the resulting error in this prediction. The $V$ of Cramer was used because of its convenience. From a value ranging from 0 to 1 inclusive, it facilitated the interpretation of the degree or intensity of the association (Bisquerra, 1989), as shown in Table 4.

Table 4. Interpretation of correlation coefficients. Source: (Bisquerra, 1989:189).
5. Results discussion

To commence, emotional intelligence as a whole is examined since main objective of the exercise is to explore emotional intelligence among the future officers of the Spanish Air Force Academy.

As reported in Table 5, the outcomes indicate that overall, Spanish future officers obtain a high grade related to emotional intelligence, scoring an average of 5.27 out of 7.

<table>
<thead>
<tr>
<th>Participants</th>
<th>Mean</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Emotional Intelligence</td>
<td>113</td>
<td>5.27</td>
<td>3.9</td>
<td>6.3</td>
</tr>
</tbody>
</table>

Table 5. Global Trait Emotional Intelligence overall results. Source: Self made.

Going into detail regarding the previous results, from Table 6 we observe that 64% of the participants attain a score between 5 and 6. Thus, the majority of the sample is located in this range. Also, Figure 5 is of service to illustrate the results from Table 6 and provide a better perspective and show that few students, 8% of the total, score less than 4.6, the latter being already supposed to be a notable grade as we will come to discover in the following paragraphs.

Due to the fact that this mark by itself does not really contribute to having an idea on whether it is high or low, comparisons with other studies should be taken into consideration. For example, a study which measured emotional intelligence among 147 students of two Universities in Prague, Czech Republic (University of New York in Prague and Charles University, Faculty of Hradec Kralove) revealed that the average score obtained was 4.15 while the highest and lowest were 5.56 and 2.05, respectively (Øvrebø, 2017).

Furthermore, one study with the goal of investigating the influence of nationality among leaders in multinational companies in five different countries (Canada, Mexico, Slovakia, Turkey and the United States) with approximately 40 participants from each country obtained an average score of 5.07 with observations ranging from 2.43 to 7.00 (Nikoui, 2015).

Once comparisons have been established, it can be determined that the average score obtained by students of the Spanish Air Force Academy is substantially higher than those acquired by samples of people worldwide. These results hold that even when contrasted with leaders of multinational corporations who are expected to have a higher emotional intelligence core than average people (Goleman, 1998), students from the Spanish Air Force Academy gather a superior rating. From looking at Figure 5, Global Trait Emotional Intelligence, it can be deduced that both average grades from EI (4.15 and 5.07) from the two studies previously mentioned are modest related to the one derived from the Spanish Air Force Academy study (5.27).

Table 6. Global Trait Emotional Intelligence individual scores. Source: Self made.

Immediately after interpreting undivided emotional intelligence results, it is indispensable to break down EI and experiment with more accurate and precise objectives. Therefore, successive findings will be approached in the light of the following research questions stated earlier:

- How does emotional intelligence evolve during the progression of students at the academy?
- In what ways is emotional intelligence different when comparing Prior Enlisted and Direct Entry cadets?
- Is there any link between emotional intelligence and military/academic achievements at the academy?

The aspects which will guide the analysis of the three research questions will be the following:

Initially, answering the first of our research questions, the dissimilarities of emotional intelligence between students of the 5th and 1st year are going to be analyzed in terms of well-being.

When examining the table that contrasts both years (Table 7), it can be clearly deduced that generally the first-year class scores higher marks than the fifth-year. It is remarkable that roughly 70% of the first-year cadets score an average of more than 5.7 while the percentage drastically shrinks to 44% for the fifth year. It is also worth noting that students from both categories pass the well-being test (except for a 6.25% of the fifth-year students, who obtain a grade slightly below 4).

![Table 7. Well-being contrast between first and fifth class. Source: Self made.](image)

Figure 6 and Figure 7 help us put these numbers more into perspective. It can be observed that most marks for the first-year class are concentrated between 5.8 and 6.5 while no such a pattern can be perceived for the fifth-year class, where they are distributed more randomly. Overall, it can be stated that despite the fact that results are quite similar, the data suggest that well-being has the potential to decrease with advancement in the...
academy. In any case, it should be understood that this is not a sample where the progression of a group of students is studied but we are comparing two different groups fractionated by four years of formation. The main argument that tends to support these results is that students might experiment some sort of fatigue due to the stress created by acquiring more and more responsibilities linked with the military profession as well as the different efforts and sacrifices required to reach the fifth year.

Item 27 from the questionnaire (“I generally believe things will work out fine in my life”) was selected to illustrate an example of the differences on a more specific level. Figure 8 and Figure 9 show that for the first year, almost 75% of the students agree or strongly agree with the question posed but only approximately 50% for the fifth year, which reinforces the results previously discussed.
In light of analyzing different possible traits of emotional intelligence between direct entry and prior enlisted cadets, and to address the second of our research questions, the research will now focus on emotionality within oneself.

Table 8 reveals that emotionality seems to be higher for students who had a previous military experience. While roughly 35% of prior enlisted cadets score more than a 5.3, only 16% of direct entry cadets achieve the same result. However, the difference between both classes seems not very large since, when going into further detail, the relation between emotionality within oneself and the method of accessing the academy is determined not to be statistically significant as the Pearson’s chi-square test ($\chi^2 = 17.01; df=10, p being .074$) indicates. It is also noteworthy that about 11% of the cadets fail at scoring a 4.

The fact that prior enlisted cadets scored a relatively higher average mark than those of direct entry is potentially a consequence of age (in agreement with Bar-On, 2006) and possibly also due to the fact that prior enlisted students are accustomed to the military environment thanks to their previous experience. It is for these reasons that they may be able to control their feelings and emotions better than cadets who are only 23 years of age or younger.

<table>
<thead>
<tr>
<th>Emotionality within oneself.</th>
<th>Nomination process</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Direct Entry</td>
<td>Prior Enlisted</td>
</tr>
<tr>
<td>3.0</td>
<td>0%</td>
<td>5.9%</td>
</tr>
<tr>
<td>3.3</td>
<td>3.8%</td>
<td>2.9%</td>
</tr>
<tr>
<td>3.7</td>
<td>7.6%</td>
<td>2.9%</td>
</tr>
<tr>
<td>4.0</td>
<td>13.9%</td>
<td>11.8%</td>
</tr>
<tr>
<td>4.3</td>
<td>17.7%</td>
<td>11.8%</td>
</tr>
<tr>
<td>4.7</td>
<td>17.7%</td>
<td>2.9%</td>
</tr>
<tr>
<td>5.0</td>
<td>12.7%</td>
<td>17.8%</td>
</tr>
<tr>
<td>5.3</td>
<td>10.1%</td>
<td>8.8%</td>
</tr>
<tr>
<td>5.7</td>
<td>7.6%</td>
<td>17.8%</td>
</tr>
<tr>
<td>6.0</td>
<td>5.1%</td>
<td>2.9%</td>
</tr>
<tr>
<td>6.3</td>
<td>3.8%</td>
<td>14.7%</td>
</tr>
</tbody>
</table>

Table 8. Emotionality within oneself in terms of nomination process. Source: Self made.

The third aspect to analyze, as stated in our objectives, is the link between emotional intelligence and academic/military achievements within the Spanish Air Force Academy. The results obtained in this analysis show whether emotional intelligence is related to success in the workplace.

In order to address the third research question, the academic ranking at the academy is compared in terms of self-control. From Table 9, it can be observed that there is no apparent link between academic/military ranking and self-control. The data shown does not seem to follow any pattern. For example, students from ranking 46-50 score an average of 5.2 while for the ones who occupy the first five spots it is only 4.8, a bit lower.

It is also worth considering that a total of 6 people, 12.5% of the individuals analyzed, independently from their ranking, fail the self-control test, which implies they might not be able to regulate their emotions or control their impulses successfully.

Even though there is no link between self-control as a whole and academic ranking, it is interesting to highlight that the data from the fifth-year class seem to follow a Gaussian distribution from score 3.0 to 6.0, as it is shown in Figure 10. The vast number of the students’ results range from 4.2 to 5.2, which is only a little bit more than just passing the test.
Going more into specifics and due to the fact that no relation between self-control as a whole and academic/military ranking has been detected, it is opportune to come upon possible questions within the questionnaire related to self-control and look for potential associations.

After analyzing Item 3 from the TEOQué-SF questionnaire ("On the whole I’m a highly motivated person"), it is revealed that a statistically significant relation between motivation and academic/military ranking exists, as it is shown when calculating the Pearson’s chi-square test in answers of Table 10 in reference to the fifth-year students, the result being \( \chi^2 = 81.262; \text{df} = 55, p = 0.012 \). A Cramer’s V of 0.58 was found, which reflected a moderate and almost strong magnitude of association and an error of 4% in the prediction of motivation in terms of academic/military ranking, according to the Uncertainty Coefficient. That being the case, the outcomes demonstrate that although, in general terms, having a high degree of self-control does not lead to occupying a high position in the academic/military ranking, this does not mean that some specific areas within self-control, such as motivation, do not play a role. Indeed, they do, as shown here.

<table>
<thead>
<tr>
<th>Academic/Military Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>0</td>
</tr>
</tbody>
</table>

Table 10. “On the whole I’m a highly motivated person” in terms of academic/military achievements. Fifth-year class (frequencies). Source: Self made.

Moving on to emotional intelligence towards other people, the first of our research questions, the differences of emotional intelligence between students of the 5th and 1st year, is going to be analyzed by basing our research on the field of sociability.

Similar to results related to well-being, the results for this portion of the experiment look similar. Overall, the first-year class scores a higher average mark than the fifth-year class. From Table 11, it can be deduced that about 55% of first-year cadets score more than a 5.0 while this percentage reduces to 35% for the fifth-year class. The results mentioned here agree with the cross-sectional aging studies, directed by Goldberg, Sweeney, Merenda and Hughes (1996), which showed that sociability is negatively correlated with age. Also, Roberts, Caspi and Moffit (2001) reached the conclusion that during adulthood, “people increase in social dominance and decrease in social vitality” (Mortimer & Shanahan, 2003, p. 2381). It is also very significant that, again, 10% of the total number of students fail the sociability test. This sum resembles the ones obtained in all the other investigations that have taken place in this work, which goes from 6.5% to 12.5% so far. Furthermore, no significant differences have been found when analyzing each item that forms sociability. Similar results are always obtained no matter the differences between courses.

<table>
<thead>
<tr>
<th>Sociability</th>
<th>First-class cadet</th>
<th>Fifth-class cadet</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.7</td>
<td>1.5%</td>
<td>0%</td>
</tr>
<tr>
<td>3.0</td>
<td>0%</td>
<td>2.1%</td>
</tr>
<tr>
<td>3.2</td>
<td>1.5%</td>
<td>2.1%</td>
</tr>
<tr>
<td>3.7</td>
<td>1.5%</td>
<td>0%</td>
</tr>
<tr>
<td>3.8</td>
<td>4.5%</td>
<td>6.3%</td>
</tr>
<tr>
<td>4.2</td>
<td>0%</td>
<td>2.1%</td>
</tr>
<tr>
<td>4.3</td>
<td>4.5%</td>
<td>6.3%</td>
</tr>
<tr>
<td>4.5</td>
<td>6.2%</td>
<td>10.4%</td>
</tr>
<tr>
<td>4.7</td>
<td>9.2%</td>
<td>12.5%</td>
</tr>
<tr>
<td>4.8</td>
<td>6.2%</td>
<td>10.4%</td>
</tr>
<tr>
<td>5.0</td>
<td>10.8%</td>
<td>12.5%</td>
</tr>
<tr>
<td>5.2</td>
<td>10.8%</td>
<td>8.3%</td>
</tr>
<tr>
<td>5.3</td>
<td>12.3%</td>
<td>10.4%</td>
</tr>
<tr>
<td>5.5</td>
<td>10.8%</td>
<td>6.3%</td>
</tr>
<tr>
<td>5.7</td>
<td>6.2%</td>
<td>4.2%</td>
</tr>
<tr>
<td>5.8</td>
<td>4.6%</td>
<td>2.1%</td>
</tr>
<tr>
<td>6.0</td>
<td>3.1%</td>
<td>2.1%</td>
</tr>
<tr>
<td>6.2</td>
<td>3.1%</td>
<td>2.1%</td>
</tr>
<tr>
<td>6.3</td>
<td>1.5%</td>
<td>0%</td>
</tr>
<tr>
<td>6.5</td>
<td>1.5%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 11. Sociability. First- vs Fifth-year class. Source: Self made.

As an example, item 28 (“I find it difficult to bond well even with those close to me”), which for interpreting the results should be considered as “I find it easy to bond well even with those close to me”, is going to be examined. From observing Figure 11. “I find it easy to bond well even with those close to me.” Fifth class year, and Figure 12 we notice that for both years, the percentage of students who answer strongly agree or agree is not far off 70%. Focusing on the negative and neutral answers, it can be assumed that no significant differences exist either, as percentages are 19% for first year and 15% for fifth year. Moreover, there is not a single student who has very much trouble bonding with those next to him/her as no one replied: “Strongly disagree”. With results indicating that more than 80% of the total number of students at the Spanish Air Force Academy do not have difficulties when bonding with those next to them, it can be concluded that it is a very positive outcome.
The second research question will be responded according to emotionality towards other people.

From Figure 13 and Figure 14, which compare scores obtained for direct entry and prior enlisted cadets, respectively, it can be observed that overall prior enlisted cadets obtain a higher mark than direct entry. Roughly 35% obtain a score better than 5.0 while it reduces to about 25% for direct entry. It is very significant that close to 20% of the participants of both groups fail the test. This sum is notably larger, almost twice as much, than the ones attained in the precedent examinations.
Due to the results, further investigation has been done and question 16 from the questionnaire ("I often find it difficult to show my affection to those close to me") was selected to illustrate better the data. From Figure 15, similarly to the overall results of emotionality toward other people, 24% of the participants agree on having difficulties to express their emotions to those people next to them. The reasons that bolster these statistics could be that due to the pressure that students face every day and the fact that they do not have private time, they tend to respond with negative energy toward others, failing to succeed in personal relationships.

To conclude with this chapter of results and since there were no sub-themes left within emotional intelligence towards others, it has been decided to analyze it as a whole in terms of academic/military ranking, thus answering the third research question.

The same as when self-control was examined in view of academic/military ranking (in which there was no apparent link between these two variables), it seems that similar conclusions can be drawn from Table 12. The data shown does not seem to follow any particular pattern. Students ranking from 6-10 earned a worse mark than all groups ranking from 26-50. Also, the scores of cadets ranking from 51-60 are all below 4.3. In comparison to other groups, their average is again significantly lower. It is also important to highlight that over 20% of the total number of the fifth-year students fail on emotional intelligence towards other people, getting an average of less than 4.0, as it can be observed in Figure 16.
6. Conclusions and pedagogical implications

The results obtained in this study reveal that emotional intelligence as a whole seems to be high for the students from the Spanish Air Force Academy, who score an average of 5.27. When compared to different studies worldwide (e.g. Øvrebø (2017) or Nikoui (2015)), it suggests that the cadets have somehow developed strong emotional intelligence patterns. Even when it is contrasted with leaders of multinational corporations who are expected to have a higher Emotional Intelligence Score than average people (Goleman, 1998), the cadets acquire better results. Below we will explore the answers to the three research questions formulated in our study.

1. Regarding the progression of students at the academy in terms of emotional intelligence, classes from the fifth and first year were compared and it was observed that overall, first-year students score higher marks than the fifth-year class. Results were not statistically significant but, from looking at them closely, it can be observed that there are some differences. The subfields of well-being and sociability were analyzed and for both areas, the data suggest that they have the potential to decrease with advancement in the academy. The reasons that might support these results are different. For well-being, all the efforts, fatigue and stress necessary to reach the fifth-year as well as the responsibilities that come with having that post might lead students to a state where their optimism and trait happiness have been damaged. The outcomes from item 27 from the questionnaire (“I generally believe things will work out fine in my life”) are again better for the first-year cadets, which indicates that their level of fulfillment and joy at first year is higher. For sociability, results agree with different studies (like Goldberg, Sweeten, Merenda & Hughes, 1996) that prove that sociability is negatively correlated with
2. Concerning the relationship between the nomination process, that is, whether it is a prior enlisted or direct entry student, and emotional intelligence, the results obtained in this paper indicate that a statistically significant association does not exist between these two variables. Nonetheless, it was still evident that overall prior enlisted cadets scored higher marks on emotionality within oneself and towards other people. The reason for this might be that due to their previous experience in the military as well as their extended time away from home, life leads prior enlisted cadets to being more prosperous at relationship skills, emotional expression as well as empathy at the moment of the study.

3. With respect to the possible link between emotional intelligence and academic/military ranking, there is not such a link at the academy. Students who occupy the first positions are often less emotionally intelligent than those occupying the last ones. For both areas studied, self-control and emotional intelligence towards other people, results repeat and no association is found. However, after exploring self-control more in detail, it was found out that a relationship between motivation and academic/military ranking does exist with a moderate to strong degree of association, which suggests that students who rank last suffer from a lack of motivation.

The results obtained in this research carry some educational implications. Although in general terms the students from the Air Force Academy have a high emotional intelligence according to our findings, it would be a good idea that they think in a more positive way. Thus, fifth-year students can increase their well-being and sociability by repeating to themselves: “it is our last year; all the sacrifice and efforts have been worth it”. Likewise, students who occupy one of the last positions in the academic/military ranking would need to reflect on the following idea: “Instead of becoming demoralized, I have to continue working and I am sure I will manage to reach the peak”. This is a task for the student but the instructor or the lecturer should also help him/her accomplish it since, as the American politician Bill Richardson highlighted, “We cannot accomplish all that we need to do without working together”.

7. Limitations and suggestions for future research

The results obtained in this study have offered us interesting findings, but the nature of the research is limited.

It would be advisable to extend the number of participants in a future project so as to obtain more concluding results. In particular, it would have been better if the number of prior enlisted students had been larger, especially in the first-year class, but we had to adapt to the availability (in the year 2017-2018 the number of prior enlisted students arriving at the academy has decreased in comparison to previous years). If this continues to be the tendency in the future, maybe a good approach would be just to focus on direct entry students and enlarge the sample.

On the other hand, it could be suggested that a more detailed analysis of specific items in the questionnaire is offered. However, for the sake of economy, groups have been made in this paper and results for specific items in the questionnaire have only been analyzed as an illustration of broader results.
References


