

# Implementation of a Web System to Improve the Administration Procedures of the Special Forces Division of CEVRAEM

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**Abstract**– *The technological disparity between military human resources management and advanced practices in the business sector is highlighted, illustrated by events such as the fire at the FAP Headquarters in 2016, which revealed deficiencies in document and legal management. This research proposes a specific technological intervention to overcome deficiencies in the management of military personnel, seeking to optimize administrative and operational processes in the Special Forces Component of the CEVRAEM, thus contributing to strengthening its efficiency and effectiveness.*

**Keywords**– *Military Human, Resources Management, Web System CEVRAEM, Special Forces Component.*

## I. INTRODUCTION

The Personnel Department is the department which has the responsibility to manage, administer and control the military personnel under the command of all the armed forces in the world focused on situations, promotions, appointment changes, documentation, records, qualifications, etc., all this according to the current regulations which govern each institution. Likewise, the problems in the Personnel or Human Resources Department, known in the civilian sphere, within the armed institutions are still in force. A clear example was reflected in Latin America, where it is difficult to get the right talent since military life is focused on vocation rather than monetary necessity, however, due to the stability offered by the government to its military members, they are often chosen as an exit point. Likewise, due to the high number of people joining the different military institutions, their control is being affected, since they do not have specialized management programs in spite of the fact that technological progress has been growing exponentially in the world.

It is worth mentioning that the accelerated advance of technology in the world is being focused, by the armed forces, on the attack and/or defense of their own country, as opposed to the sustainability and viability of the human factor, leaving a vacuum in the personnel management bodies of military institutions, as opposed to business organizations, which have a more technological focus in their human resources area, and yet the problems that this entails are not minor.

Armies will be small, entrepreneurially managed institutions staffed by professional workers. [1] From this point of view, where the business environment is compared to the

military environment, the human factor has reaffirmed its importance. In this sense, information technologies for the management of the human factor have had a considerable growth and importance.

In Peru, small and medium-sized companies lack a system focused on the human resources area, often because they do not have the technology to be implemented, lack of knowledge on the subject or simply due to the high prices of these in the market.

The military, which is part of the state, in theory, should not have problems in the management of military personnel under its command, however, the fire at the headquarters of the FAP, in April 2016, showed these shortcomings, since in that incident physical files such as pay slips, records, personnel files, etc., which led to legal and documentary problems. After that incident, the Peruvian Air Force put emphasis on the use of information technology and eventually implemented a web-based personnel system interconnected in all its units in Peru, as well as a Document Management System (SGD), an appointment management system for the Central Hospital of the FAP and different small internal systems. However, in Peru, in the conflict zones or vraem emergency zones, there is no web system for the management and administration of military personnel, either because of the distance or the interest shown by the state.

The Special Forces Component of CEVRAEM, which is a joint armed forces unit, due to its creation a few years ago, suffers from the lack of an IT area. The Personnel Area has been working, for several years, manually (with paper) and using information systems that are not up to date with technological advances (Basic Excel) or at least some technology that helps to optimize processes. As a result of the lack of the use of technology, processes such as control, personnel registration, personnel history and personnel file of the Personnel Area are outdated, demanding time and material consumption, likewise, the lack of knowledge to make use of a cloud service that stores information means that many data will be lost, leaving each military personnel in a vacuum

Due to the aforementioned, the Special Forces Component requires a long time to register personnel who are appointed for a period of 6 months, as well as to search for any information on such personnel or any personnel who have worked at any

time, in order to carry out any procedure in the armed institution of each military personnel. The selection of personnel suffers from a low efficiency, both in recruitment and job designation, at the time of recruiting military personnel, there is no prior knowledge of their file, therefore, at the time of designating them for a special operation job, their additional capabilities are unknown. Likewise, during the permanence of the military personnel appointed to the Special Forces Component, due to the different jobs performed, each personnel may find themselves on commission, special leave, special operation, hospital, etc. Therefore, there is no exact control of the exact location of each military personnel. It is worth mentioning that any activity performed, or any existing data is recorded on paper, which, at the time of requesting the information of any military personnel, may have been lost or misplaced among some other documents can be seen in Fig. 1.

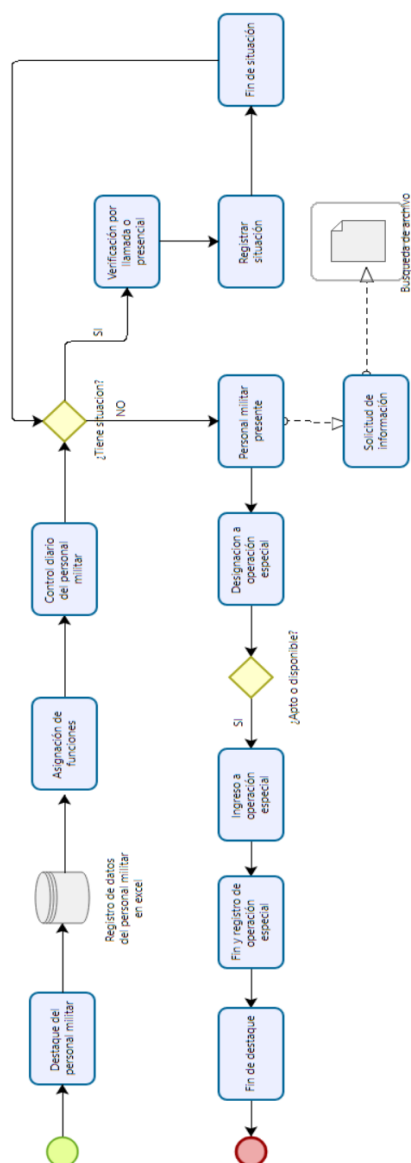


Fig. 1 Diagram of military personnel management process

The formulation of the problem is based on the need to optimize the management of military personnel in the CEVRAEM Special Forces Component by implementing a web system. The general problem raises the question of to what extent this technological tool can improve the current processes of personnel administration and control. In this sense, specific problems are identified:

- ✓ To what extent does the implementation of the Web System allow to reduce the registration time of military personnel?
- ✓ To what extent does the implementation of the Web System allow to reduce the search time of military personnel information?
- ✓ To what extent does the implementation of the Web System allow to increase the efficiency in the selection of personnel?
- ✓ To what extent does the implementation of the Web System allow to reduce the selection time of military personnel?
- ✓ To what extent does the implementation of the Web System allow to increase efficiency in the control of military personnel?
- ✓ To what extent does the implementation of the Web system allow to increase the efficiency of information control?

In response to these questions, the general objective of optimizing the management of military personnel by implementing a web system in the CEVRAEM Special Forces Component is established. To this end, specific objectives are proposed:

- ✓ Reduces the registration time of military personnel.
- ✓ Reduce information search time for military personnel.
- ✓ Increase the efficiency of selection of military personnel.
- ✓ Reduce personnel selection time.
- ✓ Increase efficiency in the control of military personnel.
- ✓ Increase efficiency in the control of military personnel information.

Finally, a general hypothesis is proposed that establishes that the implementation of a web system will optimize the management of military personnel in the CEVRAEM Special Forces Component. The following specific hypotheses are derived from this general hypothesis:

- ✓ If a web system is implemented, then it reduces the registration time of military personnel in the Special Forces Component of CEVRAEM.
- ✓ If a web system is implemented, then it reduces the information search time of military personnel in the Special Forces Component of CEVRAEM.
- ✓ If a web system is implemented, then it increases the efficiency of selection of military personnel in the Special Forces Component of CEVRAEM.
- ✓ If a web system is implemented, then it reduces the personnel selection time in the Special Forces Component of CEVRAEM. If a web system is implemented, then it

increases efficiency in the control of military personnel in the Special Forces Component of CEVRAEM.

- ✓ If a web system is implemented, then it increases the efficiency of information control in the Special Forces Component of CEVRAEM.

The justification of the research is focused on three fundamental aspects: theoretical, methodological and contextual. From a theoretical point of view, the implementation of new technologies, such as a web system, will allow knowledge to be generated from the sources analysed and from the proposed case. This will serve as a basis for demonstrating the effectiveness of these technologies in optimising processes and encouraging future research in this area. In addition, the web system will optimise key processes in the management of military personnel, such as registration, information search, selection and monitoring, which will result in a significant improvement in time and operational efficiency of the administrative area.

Methodologically, the research is of an applied type, since its objective is to study the current context of the personnel administration area in the military base and, based on this, implement a web system that improves internal performance. To do so, the Scrum methodology will be used, known for its effectiveness in software development by facilitating the necessary documentation and constant interaction with the end client. Regarding the delimitation of the study, it will be carried out in the city of Pichari, located in the department of Cuzco, specifically at the CEVRAEM military base. The information collected for this project comes from articles, research and theses from the last ten years, guaranteeing updated and relevant data. Finally, the resources necessary for the research are available in academic and documentary repositories.

## II. THEORETICAL FRAMEWORK

In research titled Development of a web system for personnel management and inventory of weapons and accessories of the security company Unicepri, applying the MVC architecture. This was carried out at the Chimborazo Higher School (Ecuador), the objective of this project was to develop and implement a web application in the security company UNICEPRI, to improve the management of guards and inventory of weapons and accessories. The problem lay in the processes that were carried out in that company, since these processes were carried out manually, which is why the need to have better information management arises so that in this way, the information that is handled lasts in the time as different companies currently do at a global and national level, improving efficiency and productivity, this through the management of information taking advantage of the Internet through a web system. To identify the user requirements, techniques such as interview and observation were used, which were applied to the administrative staff of the company. Likewise, the Scrum methodology was used for compliance and

control of the different activities developed in the company, this allowed communication with the product customer. The technologies and frameworks used in the creation of the web system were VueJS and Laravel, based on the MVC architecture with the PHP programming language and the MariaBD relational database manager.

After an analysis of the results obtained, the author was able to conclude that the creation and implementation of the web system contributed significantly to improving times compared to the manual process carried out by the company. [2]

In a research project titled Development and implementation of a human resources information system in a pharmaceutical company, which took place at the Instituto Tecnológico y De Estudios Superiores de Occident, Jalisco, Mexico. The author describes the problem of the research which is the inefficiency of the processes that were carried out in the organization because these were done manually, which translated into time and loss of money. These problems were basically excessive operational activities, slow and inefficient personnel selection methods, traditional performance measurement, etc. The development and implementation of the web system used different technologies such as HTML, CSS, ASP.NET, JS, etc. Microsoft Azure and a cloud database were used for hosting.

Finally, after carrying out the analysis of the results obtained by the author, he was able to complete the development and implementation, obtaining advantages that are reflected in organizational growth and performance improvement. [3]

In the research, which was titled Design of a web system for human resources management in an SME in the textile sector, this study took place at the University of Sciences and Humanities, in the city of Lima, Peru. The objective of which was to design a web system for human resources management, assigning different modules in order to improve decision making, information management and staff training. The problem presented and described by the author is the absence of a web system in the human resources area of the Pyme Chalicen SAC, the problems that this situation detailed were manual marking to keep track of attendance of the personnel who work in said SMEs, as well as the control of the information necessary to monitor workers, this situation led to loss of data and mistakes in their manipulation, both in data entry and output. In the research, the design of a web system was carried out, this was carried out using the agile Scrum methodology, to have maximum flexibility in development, on the other hand, the programming language used was PHP, the database used It was relational which was MySQL, on the other hand, tools that help the Scrum methodology were used, such as Trello and Balsamiq for the visualization of designs and prototypes.

After analyzing the results obtained, the author was able to model the web system, which in the future will have a great

positive impact on SMEs, providing better control of Human Resources. [4]

In the research entitled Progressive web application with a blockchain system for personnel management of a construction company, whose research was carried out at the Catholic University of Santa María, in the city of Arequipa, Peru, which aimed to develop a progressive web system of human resources that allows payment transfers to be made to the workers of the construction company Investment Idea, real estate developer EIRL The author describes as problematic the result of citizen insecurity, which is reflected in the need to create a module that allows bank transfers to be made , low security in the stored information of the personnel who work in said construction company, among others. The methodology used in this research is Scrum, the technologies used were the VueJS and Codeigniter frameworks, this project was developed in JS, PHP and HTML CSS using MySQL as a database.

After an analysis of the results obtained, the author was able to conclude that the implementation of the system contributed positively to the fulfillment of the objectives set in said research, reducing process times and improving efficiency. [5]

### III. METHOD

The research adopts a pre-experimental design, characterized by the application of an initial evaluation to a particular group, followed by the implementation of an experimental treatment and concluding with a post-stimulus evaluation can be seen in Fig. 2.

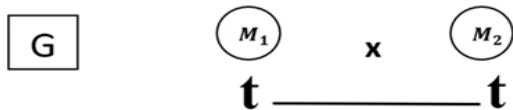


Fig. 2 Case study with a single measurement

It is an approach that is applied to be able to treat practical situations in society that need some solution, in addition to generating an advance in the development of technology that involves the formation of new technologies for employment in production. Since this approach is responsible for delivering data and generating solutions for the problems they raise. [7] can be seen on Fig. 3.

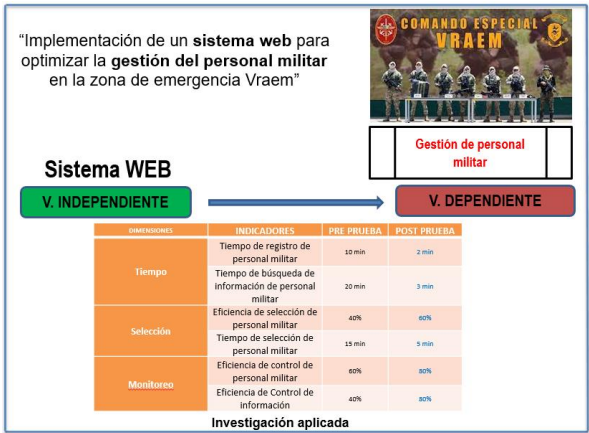


Fig. 3 Organizational scheme

Set of processes that are organized sequentially, being appropriate when it is required to evaluate magnitudes or events of phenomena and thus be able to formulate hypotheses. [8].

The population is defined as the total of instances that meet a specific set of criteria or specifications. [9].

Given that the present analysis lacks the capacity to comprehensively address all processes related to the management of military personnel in the CEVRAEM Special Forces Component, it is ideal to work with a representative sample of the population. However, the feasibility of always addressing the entire military population under consideration is practically limited. In summary, a sample of 30 military personnel management processes has been chosen., which is considered appropriate to meaningfully represent the population under consideration.

Specific group of the population or universe of which one is interested, where timely data can be obtained through which it will serve as a representative of the population and thus be able to give results in a generic way that can be found in the sample of the population. [10]

The sample selection strategy to be applied is based on a random approach, in accordance with the established guidelines. In order to incorporate the 30 military personnel management procedures in the Special Forces Component of CEVRAEM into the random sample, a selection will be made by means of a draw based on the information stored in the database. Then, an exhaustive analysis of each of the selected processes that will be carried out can be seen in Table I.

TABLE I  
POPULATION AND SAMPLE

Sampling unit	Military Personnel Management Process in the CEVRAEM's Special Forces Component
Universe	All military personnel management processes in the Special Forces Component of CEVRAEM.
sample	Military personnel management processes in the Special Forces Component of the CEVRAEM.
	n=30

One of the techniques is observation, it is used to collect information, it involves the systematic, precise and reliable documentation of behaviors and situations that are observable. This is achieved by utilizing a set of carefully defined categories and subcategories. [11].

The direct observation technique was strategically selected to provide a deep and contextualized understanding of the military personnel management processes, as well as to directly evaluate the benefits derived from the implementation of the web system in the Special Forces Component of CEVRAEM.

One of the instruments that will be used will be the observation sheet, it is used for the purpose of quantifying, examining or evaluating a particular objective, seeking to gather relevant information about said object. Its application covers the measurement of both extrinsic and intrinsic situations in individuals, addressing aspects such as activities and emotions. Likewise, it finds usefulness in the evaluation of social networks and in the analysis of management indicators. [11].

Scrum is an agile approach methodology for project management and product development, based on the principles of transparency, inspection and adaptation. Its emphasis is on fostering collaboration, flexibility and incremental delivery of products with high quality standards.

#### A. Phase 01: Startup

In the initial stage of the scrum methodology, the essential fundamentals are identified and assigned to the Stakeholders and the Scrum Master. During this period, the set of professionals that will form the Scrum Team for the execution of the project is defined, and the fundamental narratives (epics), the first prioritized Backlog of the product and the global strategy for the programming of the sprints or the comprehensive presentation of the product are developed. As a result of these activities, a set of significant deliverables is produced, including the convening and execution of the Sprint planning meeting, as well as the formal training of the Scrum Team.

#### B. Phase 02: Planning and estimation

In the framework stage, detailed user needs narratives are generated from the core narratives known as epics. An assessment of the inherent value and priority associated with each of these narratives is carried out, with the purpose of initially committing to develop those that are considered a priority. Subsequently, the specific tasks that will make up the Sprint Backlog are defined, estimated and committed to. As a tangible result of this phase, a set of user stories is obtained that serves as fundamental elements of the process can be seen in Table II, III.

TABLE II  
USER HISTORY PRIORITY

User History	Priority
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<b>Number:</b> 001	<b>User:</b> Common User	high
<b>Description:</b>	<b>I want</b>	VRAEM Users
	<b>Yo quiero</b>	Main menu to show personnel status and fields to help add a new record.
	<b>To</b>	Facilitate the registration of military personnel.

#### Acceptance Criteria:

- Register new military members in the system.
- Receive detailed information
- Display a status panel of the military
- Display the New Registration button

TABLE III  
USER STORY ADMINISTRATOR

User Story	Priority
<b>Number:</b> 002	<b>User:</b> Admin very high
<b>Description:</b>	<b>I want</b>
	VRAEM administrative staff
	<b>I want</b>
	Main menu to view and manage the normal user and administrator.
	<b>For</b>
	Display the list of registered personnel and administrator(s), as well as register, edit and delete registered personnel.

#### Description:

- Select the role to which you belong
- Access the system through a username and password.
- Show the Home button
- Show the User or Personal button
- Display the Administrator button
- Display the list of registered Users or Staff
- Display the list of registered Administrators
- Register a new User or Staff
- Register a new Administrator
- Edit the selected User
- Edit the selected Administrator

#### C. Phase 03: Implementation

The products agreed for the specific period (Sprint) are carefully elaborated, carrying out the daily meeting known as Daily Standup, in which the individual progress of the Scrum team members is analyzed. As a final step in this cycle, the Prioritized Product Backlog is refined. As a result of these operations, a set of deliverables is generated, highlighting especially the specific elements produced during the Sprint.

#### D. Phase 04: Review and retrospective

The evaluation and validation of the initial Minimum Variable Product (MVP) is carried out during the first Sprint. If the validation is confirmed, the project moves on to the next phase of the project; Otherwise, the modifications and corrections previously evaluated by the Stakeholders and the Scrum Master are implemented. The last step in this cycle is the Sprint retrospective, during which possible adjustments or improvements to the Scrum Team's operating methods are

analyzed in detail. The only deliverable of this process is the Sprint retrospective meeting, which serves as an essential tool to continuously improve the efficiency and quality of the work performed.

#### E. Phase 05: Release

The final phase of the Scrum life cycle involves the submission of the deliverables, previously validated by the Scrum Master, to the Stakeholders for verification against the requirements established in the preceding stages. As a concluding step, a retrospective review of the project as a whole is carried out, taking into consideration the lessons learned throughout the project development. The tangible results of this phase include the distribution of the ratified deliverables and the conduct of the daily Scrum meeting.

The methodology for measuring the results of the implementation is based on a systematic approach that allows the evaluation of the impact of the web system on the management of military personnel of the CEVRAEM Special Forces Component. To this end, key performance indicators (KPIs) related to the optimized processes were defined, such as registration time, information search time, efficiency in personnel selection and information control, quantified below.

#### F. Metric 01 (Time of registration of military personnel)

TIDxCP

Where:

TID: Time of data entry

CP: Number of personnel

#### G. Metric 02 (Time to search for information on military personnel)

TR/TPI

Where:

TC: Time of data entry

TPI: Information processing time

#### H. Metric 03 (Efficiency of military personnel selection)

TSPx100/TPS

Where:

TSP: Personnel selection time

TPS: Time foreseen for personnel selection.

#### I. Metric 04 (Time of selection of military personnel)

TDP/TPR

Where:

TDP: Data search time

TVL: Time for file verification

#### J. Metric 05 (Military personnel control efficiency)

TRSx100/TPR

Where:

TRS: Time to record situation

TPR: Predicted recording time

TSIx100/TPS

#### K. Metric 06 (Efficiency of information control)

TSIx100/TPS

Where:

TSI: Time to request information.

TPS: Estimated time of request

#### L. Schedule

The scheduling of activities will be structured so that each phase of the implementation of the web system is carefully planned and executed within defined deadlines. The activities will be presented in a timeline format, detailing the specific tasks to be performed, those responsible for each one and the estimated time for completion, allowing effective monitoring of the project's progress can be seen on Fig. 4, 5.

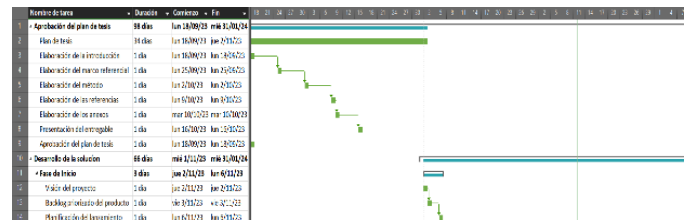


Fig. 4 Project activity schedule 1

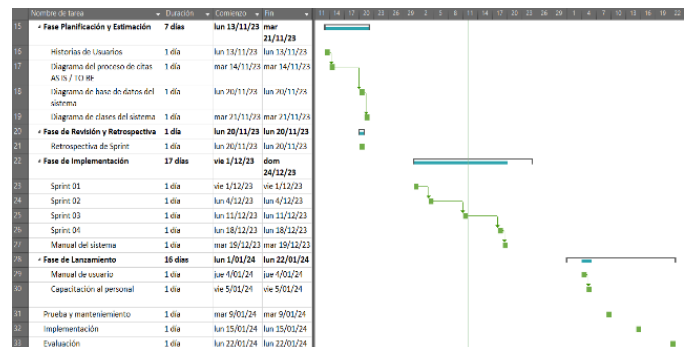


Fig. 5 Schedule 2



### M. Personnel Costs

Regarding direct costs, personnel costs will be addressed, which are detailed in Table 4 below.

TABLE IV  
PERSONNEL COSTS

Equipment	Amount	Time	Cost	Amount
Analyst	1	S/. 3000	3 months	S/. 9000
programmer	1	S/. 2500	3 months	S/. 7500
Designer	1	S/. 2800	3 months	S/. 8400
<b>TOTAL</b>	S/. 24900			

### N. Cost of materials

In terms of direct costs, material costs will be addressed, which are detailed in Table 5 below.

TABLE V  
COST OF MATERIALS

Equipment	Quantity	time	Cost	Amount
computer	1	-	S/. 3500	S/. 3500
server	1	-	S/. 5000	S/. 5000
Internet	-	3months	S/. 150	S/. 450.00
<b>TOTAL</b>	S/. 8950			

### O. IT staff training costs

In addition, indirect costs will be included, which are specified in Table 6.

TABLE VI  
IT STAFF TRAINING COSTS

Consulting	Quantity	time	Cost	Amount
System usage	3	2 months	00.00	S/. 90.00
				S/. 90.00

### P. Personnel Costs

On the other hand, fixed costs will be explained in relation to consulting costs, which are detailed in Table 7.

TABLE VII  
CONSULTING COSTS

Consulting	Quantity	time	Cost	Amount
Technical Consulting	3	2 months	00.00	S/. 90.00
Security Consulting	3	1 month		
Regulatory Compliance Consulting	3	1 month		

### Q. Variable Costs

On the other hand, the project budget is detailed in two parts. The budget for the data collection prototype, which will be financed by the author of the research, and the budget for the automated testing prototype.

Variable consulting costs were not considered for this research. The budget for the estimated costs for the data collection prototype will be funded by the research author

himself. The budget for the estimated costs for the automated testing prototype will be funded by the research author himself.

### R. Results

Although the pretest results showed an average of 33.08 minutes, the results of the posttest revealed a decrease in time, registering an average of 4.71 minutes. This circumstance denotes a significant reduction of 28.37 minutes in proportional terms can be seen on Fig. 6.

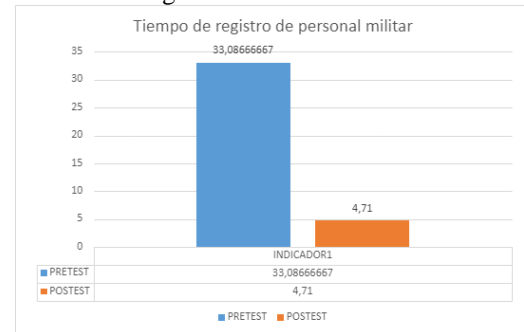


Fig. 6 Result graph – Military personnel registration time

According to the data derived from the pretest and posttest exams, it can be seen from the diagram presented previously that, although the pretest results showed an average of 21.73 minutes, the results of the posttest exams revealed a decrease in time by registering an average of 1.57 minutes. This circumstance denotes a significant reduction of 20.16 minutes in proportional terms can be seen on Fig. 7.

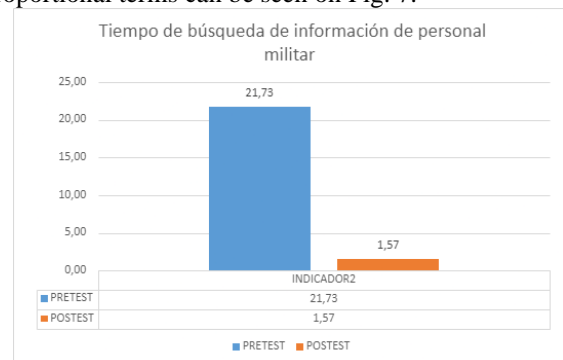


Fig. 7 Result graph – Time spent searching for information on military personnel

According to the data derived from the pretest and posttest exams, it can be seen from the diagram previously presented that, although the pretest results showed an average of 40.41 minutes, the results of the posttest exams revealed a decrease in time, recording an average of 152.78 minutes. This circumstance denotes a significant increase of 112.37 minutes in proportional terms can be seen on Fig. 8.

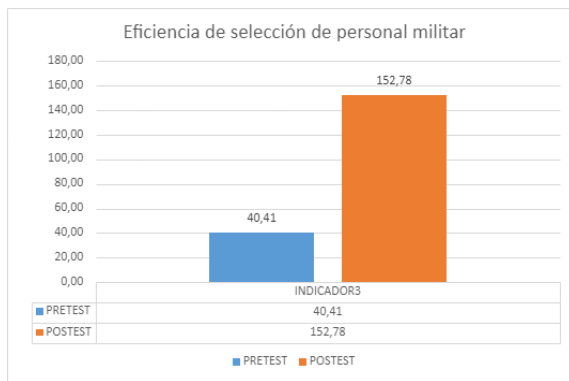


Fig. 8 Result graph – Military personnel selection efficiency

According to the data derived from the pretest and post test exams, it can be seen from the diagram presented previously that, although the pretest results showed an average of 14.92 minutes, the results of the posttest exams revealed a decrease in time, recording an average of 5.25 minutes. This circumstance denotes a significant reduction of 9.67 minutes in proportional terms can be seen on Fig. 9.

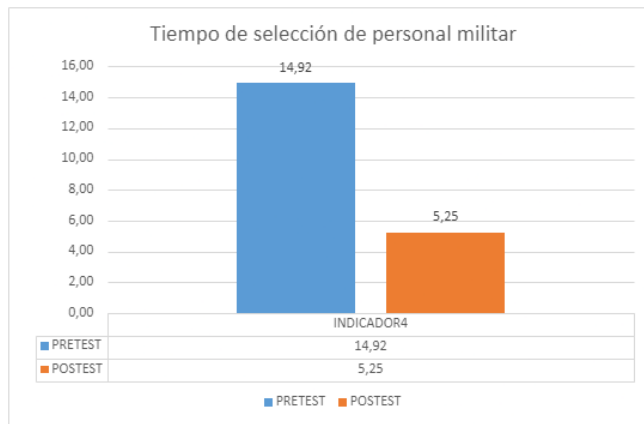


Fig. 9 Result graph – Military personnel selection time

According to the data derived from the pretest and posttest exams, it can be seen from the diagram previously presented that, although the pretest results showed an average of 62.48 minutes, the results of the posttest exams revealed a decrease in time, recording an average of 396.79 minutes. This circumstance denotes a significant increase of 334.31 minutes in proportional terms can be seen on Fig. 10.

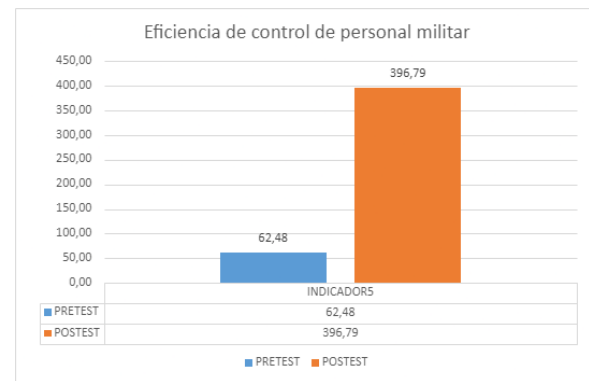


Fig. 10 Result graph – Efficiency of control of military personnel

According to the data derived from the pretest and posttest exams, it can be seen from the diagram previously presented that, although the pretest results showed an average of 40.05 minutes, the results of the posttest exams revealed a decrease in time, recording an average of 328.78 minutes. This circumstance denotes a significant increase of 288.73 minutes in proportional terms can be seen on Fig. 11.

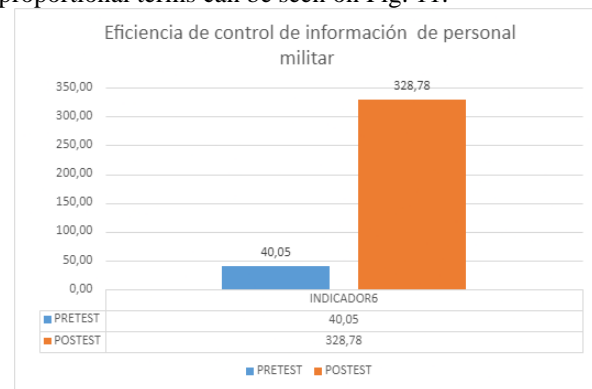


Fig. 11 Result graph – Efficiency of control of military personnel information

## V. DISCUSSION AND CONCLUSIONS

As discussion, with respect to the first specific hypothesis, it was obtained as a result that the Z value (-4,782) is less - 1.96, so it is outside the range of the rejection zone, so the null hypothesis can be rejected and the alternative hypothesis can be accepted, in addition to appreciating descriptively that a significant reduction of 28.37 minutes was achieved in proportional terms. This is related to the results of [12] mentioning that after an analysis of the results obtained, the author was able to conclude that the creation and implementation of the web system contributed significantly to improving the time with respect to the manual process carried out by the company.

With respect to the second specific hypothesis, it was obtained as a result that the Z value (-4,782) is less - 1.96, so it is outside the range of the rejection zone, so the null hypothesis can be rejected and the alternative hypothesis can be accepted, in addition to descriptively appreciated that a significant



reduction of 20.16 minutes was achieved in proportional terms. This is related to the results of [13] who mentions that after performing the analysis of the results obtained by the author, he was able to complete the development and implementation obtaining advantages that are reflected in organizational growth and performance improvement.

With respect to the third specific hypothesis, it was obtained as a result that the Z value (-4,762) is less - 1.96, so it is out of the range of the rejection zone, so the null hypothesis can be rejected and the alternative hypothesis can be accepted, in addition to appreciating descriptively that a significant increase of 112.37 minutes was achieved in proportional terms. This is related to the results of [14] who mentions and says that after the analysis of the results obtained, the author was able to model the web system, which in the future will have a great positive impact on SMEs, providing a better control of Human Resources.

With respect to the fourth specific hypothesis, it was obtained as a result that the Z value (-4,782) is less than - 1.96, so it is out of the range of the rejection zone, so the null hypothesis can be rejected and the alternative hypothesis can be accepted, in addition to appreciating in a descriptive way that a significant reduction of 9.67 minutes was achieved in proportional terms. This is related to the results of [15] mentioning that after an analysis of the results obtained, the author was able to conclude that the creation and implementation of the web system contributed significantly to improving the time with respect to the manual process carried out by the company.

With respect to the fifth specific hypothesis, it was obtained as a result that the significance value (0) is less than 0.05, so it is outside the range of the rejection zone, so the null hypothesis can be rejected and the alternative hypothesis can be accepted, in addition to appreciating descriptively that a significant increase of 334.31 minutes was achieved in proportional terms. This is related to the results of [16] who mentions and says that after the analysis of the results obtained, the author was able to model the web system, which in the future will have a great positive impact on SMEs, providing a better control of Human Resources.

With respect to the sixth specific hypothesis, it was obtained as a result that the significance value (0) is less than 0.05, so it is out of the range of the rejection zone, so the null hypothesis can be rejected and the alternative hypothesis can be accepted, in addition to appreciating descriptively that a significant increase of 288.73 minutes was achieved in proportional terms. This is related to the results of [17] who mentions that after performing the analysis of the results obtained by the author, he was able to complete the development and implementation obtaining advantages that are reflected in organizational growth and performance improvement.

In conclusion, the introduction of a web system to oversee the registration and management processes of military

personnel in the CEVRAEM's Special Forces Component is poised to significantly increase efficiency and accuracy. Through automated processes and streamlined workflows, the likelihood of manual errors and paperwork can be minimized, ensuring real-time updates.

A well-structured web system is anticipated to enhance tactical preparedness by delivering timely and accurate data on Special Forces personnel. This data becomes critical for decision-making, effective resource allocation, and ensuring that personnel with specific skills are readily available for designated missions or tasks.

Implementation of a web-based system is expected to fortify security measures surrounding the management and registration of military personnel. Robust authentication procedures and secure data transmission will safeguard sensitive information, allowing only authorized individuals access to pertinent data.

A comprehensive web system can contribute to more effective strategic planning within the Special Forces Component. By incorporating features such as data analytics and reporting, leadership gains valuable insights into personnel strengths, skills, and training requirements, facilitating informed decisions for long-term planning and resource distribution.

Prioritizing smooth integration with current military systems and databases is crucial for the success of the web system implementation. This interoperability ensures a seamless transition, minimizes disruptions, and enables a holistic approach to information management within the CEVRAEM's Special Forces Component.

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