MODEL FOR THE PREDICTION OF PERFORMANCE WITH ECO-INNOVATION CAPABILITY DEVELOPMENT CRITERIA: A MILITARY LOGISTIC REGRESSION ANALYSIS

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Abstract: This research delves into a performance model particularly relevant to eco-leadership. Additionally, it examines noteworthy improvements in performance outcomes within military systems. It provides valuable insights and potential implications of significant interest to many stakeholders. By leveraging this approach, it is possible to achieve improved levels of efficiency, effectiveness, and overall performance, thereby contributing to the overarching objectives. The chosen approach includes a conceptual synthesis of systematic research on the topic of eco-leadership. The factors representative for the relationship between eco-leadership and wise military action were identified. The study results revealed a new management perspective on military technological systems by systematizing innovative green decision-making. Additionally, the study suggests recommendations for developing future ecological initiatives and interventions in the practice of military supply. Finally, the paper proposes a pragmatic model for the eco-leaders. The proposed model aims to understand all the ecological implications in military decision-making practice.

Keywords: performance model, logistic regression, military eco-leadership, eco-innovation

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Introduction

In today's world, successful leadership involves fostering solid partnerships between industries that deal with liquefying resources. Military management uses case analysis, planning, maintenance, and operation equipment in service for reducing consumption. This concerns eco-innovation, highlighting the importance of organizational innovation in improving local performance within the public sector while expanding its scope to include eco-innovation more broadly. Introducing novel practices, procedures, or technologies in the public sector strives to promote environmental sustainability and optimize efficiency (Brem et al., 2016; Lopes et al.,

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2021; Csikosova et al., 2021; Candido and Kaminski, 2023, Veselovska et al., 2023; Streimikiene, 2023).

The focus of this issue is on the use of resources in engineering processes and their efficiency in the military system. Although resource consumption rates in engineering processes are high, the military system's use of resources raises questions about productivity and efficiency.

Military units follow managerial processes to evaluate tasks. However, innovative measures can be introduced in each decisional phase whereas systemic steps promote a new leading vision. The outline of responsibility includes supplier sourcing, manufacturing, commissioning, site management, and monitoring.

Innovation is crucial for improving processes, products, and manufacturing advancements. To achieve exceptional performance, it is necessary to focus on differentiation strategy, process, and product innovations. The importance of strategy and innovation in driving success is highlighted in the military context through operational decision-making based on business strategy, innovation, employee training and development, customer satisfaction, and differentiation strategy (Wall, 2021).

To develop a better occupational standard that meets current social needs, product innovation and changing the mindset of leaders to implement ecological strategies in decision-making is crucial. We propose that achieving military eco-leadership is a critical issue that must be addressed. This can be achieved by establishing connections with productivity and focusing on key sustainability components.

Current scientific studies emphasize the need for innovative approaches that maximize the courses of action. The scholarly literature highlights the significance of incorporating sustainability factors into core organizational decision-making processes, such allocating resources and formulating long-term plans (Hahn et al., 2015). Innovation potentially tackles the challenges of public sector overload and organizational obstacles. When leaders become more attuned to societal changes and enhance their competence to quickly adapt and respond to environmental changes, they can apply innovative solutions to overcome barriers such as risk aversion, hierarchy, and silos within organizational cultures.

Military institutions are comprised of unique components such as human resources (including personnel, management, education, and training), processes (fundamental principles), organizational structure, and diverse technology and resources (Minculete, 2015).

The concept of the green supply chain involves implementing eco-friendly practices that contribute to environmental sustainability and uphold ethical business principles. These practices aim to minimize waste, reduce the carbon footprint, and protect the environment (Petljak et al., 2018; Rydecki and Chłąd, 2023). Incorporating sustainable practices gives a competitive edge by bolstering its reputation and attracting consumers with environmentally responsible practices. Such measures demonstrate a commitment to environmental stewardship and highlight the dedication to social and environmental expectations.

In other words, within the setting of the greening, a moral leader highlights the significance of green organizational objectives, implants green benchmarks, and creates worker green self-efficacy (Fatoki, 2023; Sathyamoorthi et al., 2023). By embracing sustainable practices, leaders effectively position themselves as responsible corporate citizens, which can strengthen their brand image and foster loyalty. Hence, eco-leaders recognize the potential benefits of adopting and incorporating eco-friendly practices into their operations.
Establishing the operational requirements for eco-innovative technical system design is a complex task, as it necessitates collaboration among multiple system actors (Deja et al. 2023). We believe that leaders can change standards and measure technical system design through a hierarchical approach. Critical desired performances are at the top of the hierarchy, followed by objectives for operational level performance parameters. The satisfaction of critical parameters is achieved at the tactical level. To evaluate performance fulfillment, we must consider the driving experiences that determine whether short-term abilities can meet eco-innovative performance needs. The challenge lies in defining, modifying, and updating eco-innovative needs during the process of determining eco-innovative operational requirements. This article proposes a model for military eco-leadership and identifies key components in decision-making for developing military technology, on a range of empirical and theoretical sources. The findings can aid in determining an eco-innovative strategy to meet organizational performance.
This work is focused on two main directions: eco-innovation - the conceptualization and managerial implications of eco-leaders in the military decision-making process. Hence, there arises a pressing need to develop a theoretical framework that caters to the distinctive performance domains of military establishments, namely a model of military leadership reconciliation.

Literature Review

Amalgamating corporate responsibility and performance measurement efforts ensures sustainable development for all stakeholders involved. Researchers present a well-rounded and justifiable view of a company's performance by acknowledging its strengths and limitations (Man et al., 2021; Oliinyk et al., 2023). CSR is a multifaceted concept that encompasses a range of issues, including but not limited to human rights, corporate governance, employee welfare, environmental sustainability, working conditions, and economic development. Despite variations in the definition and objectives of CSR, sustainability and adaptability are the two key areas that receive the most attention (Hategan et al., 2020; Khan et al., 2023; Betakova et al., 2023). As such, it enables leaders to take accountability for their actions and their impact on society and the environment, thereby conducting to sustainably and ethically (Zvarikova et al., 2023, Belas et al., 2020).
By studying several definitions, numerous researchers interpret eco-leaders, regardless of the organizational context. Certain assessments focus on recycling, while others emphasize reducing waste, consumerism, and expenses, or embracing

an eco-protective mindset as a professional norm. Whether examined at the individual or organizational level, the eco-leader's impact on the environment is contingent on their level of maturity.

In the realm of public sector operations, the implementation of environmentally sustainable and responsible practices can encompass a broad spectrum of initiatives (Ferronato et al., 2019), ranging from streamlining transportation logistics and reducing costs, to sporadic and targeted cost-cutting measures, promoting durability and longevity of resources, and actively engaging in government-sponsored programs aimed at fostering innovative and eco-friendly strategies.

In recent times, there has been a noticeable shift towards environmentally responsible decision-making that uphold transparent management practices. Nevertheless, decision-making in public area, especially with ecological implications, is often influenced by personal criteria instead of standardization.

Organizational policies that prioritize eco-friendly practices can be differentiated through multiple perspectives (Linder, 2016), reuniting at least three viewpoints:

- profit perspective: this pertains to economic efficiency and cost, as well as eco-efficiency and quality. eco-efficiency measures the extent to which the resources offered increase customer value, regardless of institutional factors and strategic decisional information. Two ways to improve eco-efficiency are by regulating resource consumption to reduce total supply cost or to enhance perceived supply quality,
- institutional perspective: this relates to green branding and regulatory support, or the degree to which going green addresses a positive impact, in line with pro-societal norms and valuation (Hartmann, Ibáñezz, Sainz, 2005),
- generative approach perspective: this involves long-term learning and planning on how to minimize ecological risks and maximize competitive advantage by strategically acting on environmental impact. monitoring eco-information can simplify environmental opportunities and reduce operational and regulatory risks, costs, and access to capital.

In contemporary academic literature, associating transformational leadership with organizational performance has received noteworthy attention, especially in green entrepreneurship within the manufacturing industry. This topic holds immense significance in the current scenario and can significantly benefit organizations seeking to enhance their performance and achieve sustainable growth. This underscores the importance of eco-innovation in driving business success and environmental sustainability (Wall, 2021; Krubally et al., 2021; Muangmee et al., 2021; Nicholas et al., 2011).

In most cases, organic product consumption has significantly improved revenue generation across various industries, including nourishment, hygiene, and cosmetics (Esty and Winston, 2006). However, it is concerning to note that many business researchers and logisticians or managers exhibit low scores in ecological sensitivity analyses or pro-environmental values (Westerman, Beek, Whitaker, 2014; Bhattarai et al., 2023).

Despite the challenges in fully implementing European directives, we maintain a positive outlook on the potential for green innovation in the public sector. To achieve this, we recommend the study of eco-leaders and their performance as part of a comprehensive approach in the following stages:

- acknowledging the ecological need and associated issues,
- gathering sustainable information,
- evaluating alternatives,
- intervening in public procurement and institutional supply processes,
- assessing decisions and monitoring purchases.

Subsequent research has unveiled that leadership support and organizational culture are pivotal in shaping organizational performance. Such an influence is direct and indirect, with the latter manifested as innovation. Innovations in the public sector, particularly within local government, are essential for enhancing performance, responsiveness, and efficiency. Local government organizations can effectively improve their performance and better serve their communities by fostering a culture of innovation and receiving leaders' support (Muldrow et al., 2002; Mafini, 2015; Mikoláš and Karpeta, 2015; Moghaddam et al., 2015; Moussa et al., 2018).

Utilizing benchmarking is an invaluable tool for organizations seeking to enhance their performance. It delivers valuable insights into the management techniques that are necessary for success, and mastering these techniques is critical to the organization's overall goals (Vasilev, 2021). However, executing and evaluating benchmarking at a systemic level can be a complex process, particularly when comparing specific indicators. The primary benefit of implementing benchmarking is that it enables organizations to accept or reject research tools based on the quality and quantity of information gathered. Even a limited application of benchmarking can provide significant insight into an organization's capabilities.

We firmly believe that eco-leadership plays a crucial role in enhancing organizational performance. It establishes a shared set of values influencing how a team thinks, feels, and reacts to their surroundings. This is especially significant in promoting the internal alignment and coordination of green strategies.

Similarly, organizational innovation partially mediates organizational culture and performance (Putro et al., 2021; Oláh et al., 2021). Specifically, while leadership can encourage creative innovation, leadership impacts performance more pronounced when it is directly linked to the organization's strategic goals and objectives.

Our ultimate objective is to promote a sustainable working style, cultivate a culture of innovation that harnesses green resources, and foster a green ethos.

Assuming responsibility for overseeing all military operation, interactions is a multifaceted task that requires comprehensive decision-making logistics to supplement worldwide logistics. Evaluating the effectiveness of environmental leaders can enhance the decision-making skills of military logistics personnel as they adjust to contemporary sustainability capacities (Minculete, 2015).

An annual series of supply processes are carried out by a military institution, where decisions are made according to routine or emergency situations, considering the

various events on the institutional agenda and the increase in public requests related to its objectives. To promote sustainability and public activity among decision-makers, the requirement for ecological information is extended to the users or beneficiaries through the information entered in the documents that award the products or services required to achieve the proposed institutional objectives. Eco-leaders focus on topics of corporate responsible behavior, by highlighting the ecological attributes of products or services and referring to economic performance criteria such as the price (Schneider, Stieglitz and Lattemann, 2008).

The presence of environmental leaders is extremely important for organizations because they have a significant impact on an organization's environmental identity. This, in turn, encourages the development and promotion of environmentally conscious behavior and innovation within the organization (Mittal, Dhar, 2016).

In evaluating innovative leaders, Ryszko utilized the scoreboard Eco-IS and the ECO-I-Index to measure five performance dimensions according to the European framework. His research contributes valuable findings to the current academic literature by shedding light on the performance of innovative leaders and the key factors that drive their success. As per Ryszko's analysis, the frequency of eco-innovations determines two vital aspects. Firstly, it reflects the pace at which eco-innovations are launched, indicating the firm's agility in introducing new eco-friendly products and developing ecological processes. Secondly, it influences the quality of eco-innovations, gauged by the novelty of eco-friendly products and processes (Ryszko, 2017).

To promote eco-leadership within an organization, there are specific actions that can be taken. The following examples of indicators showcase the involvement of eco-leaders to foster a safety culture (Moraru et al., 2020). Proactive involvement in promoting eco-leadership can be attained through the following actions:

- the establishment of strategic or operational ecological objectives for one or more military technical systems,
- resource planning that promotes economic efficiency,
- the measurement of both negative and positive eco-innovative indicators,
- continuous improvement in decision-making,
- the ability to adapt to changes in management.

Actions that contribute to the promotion of an ecological consciousness could be achieved through: individual or collective actions that reflect an awareness of eco-leadership; opinions regarding the functionality of eco-innovation in balancing the autonomy of military leaders at the central level and the local institutional level; willing participation in eco-innovative decision-making processes, the freedom to act sustainably without top leaders generating uncertainty over operational leaders in ecological practice.

Koufteros devised a framework to evaluate the competitive abilities by factors such as pricing, customer value, delivery reliability, and production innovation. This investigation utilized quality, conveyance, unwavering quality, item development, price/cost, and advertising time (Koufteros et al., 2002).

Measurement scales have the potential to convert subjective phenomena such as opinions, attitudes, and qualitative facts into objective, quantifiable elements (Costa et al., 2022). The process of assigning a score to each statement submitted by the respondents is a crucial step in determining the degree of contribution of the general ranking dimensions. This methodology is further elucidated in the illustration provided below.

Policy-relevant green growth indicators are indispensable in defining key performance indicators that evaluate the influence of government expenditure on specific policy objectives or programs (Vogelpohl et al., 2021). The design of the eco-innovative technical system depends on:

- the existence of appropriate organizational tasks for eco-innovative technical systems,
- self-regulation of deficiencies through control actions,
- motivation of employees through eco-friendly work tasks,
- innovative military technical systems.

Therefore, our approach's most important factors of interest can be summarized after a questionnaire was designed to support eco-leadership in the military decision-making sphere.

We inspired from this context to create a performance model supported by various variables. In the analysis of eco-leaders, we provided the performance indicators visible in Table 1.

Table 1. Research variables

Indicator	Measures allowed for indicator	Coding	
V1. Sustainable planning	Developing a new type of military leadership capability	PS	1
	The number of sustainable management structures		2
	Military Sustainable Management Responsibilities		3
	Profile of the military eco-leader		4
	Decisions to ensure an eco-innovative material base		5
V2. Eco-innovative supply	Specific requirements regarding the composition, sizing, positioning of new products for eco-innovative objectives	AE	1
	Rules for the supply of renewable consumables		2
	Eco-innovative special requirements on the supply line		3
	Details, requirements, components related to sustainability in procurement documentation		4
V3. Management staff training	A minimum number of decision-making staff on sustainability trends	PP	1
	Positions associated with eco-innovative objectives		2
	Forms of training / specialization / training along the lines of eco-innovative management		3
	Operationalize technical systems and increasing the level of professional competence		4
V4.	Professional failures or errors in professional activities	TE	1

Testing-evaluation	Eco-innovative objectives		2
	Individual evaluation criteria for the implementation of sustainable or innovative actions		3
	Forms of monitoring responsibilities of a sustainable nature		4
	Performance requirements ancillary to individual military tasks		5
V5. Eco-innovative management	Specific requirements for sustainability standardization and interoperability	ME	1
	Eco-innovative decisions		2
	Eco-innovative requirements on the line of safety in the operation of technical systems		3
	Sustainable environmental protection rules, along the lines of minimizing the use in construction and the exploitation of rare materials, limiting environmental pollution, specifying applicable standards in terms of harmful emissions, energy efficiency		4
V6. Eco-innovative information and decisions	Sustainable military supply and storage line decisions	IDEA	1
	Sustainable military decisions along the line of operation and maintenance		2
	Decisional constraints to restrict those activities that harm through the presence of hazardous materials		3
	Innovative ordering activity on the line of material goods records		4
	Innovative command activity along the lines of environmental protection, occupational safety and health, technical supervision, fire protection and legal metrology		5
V7. Supporting eco-innovative training	Sustainable training processes, procedures, techniques used to operate technical systems	SIE	1
	Sustainable training and ensuring the necessary documentation		2
	The formation of eco-innovation in the institutional environment		3
	Training, certification, and use of eco-leaders		4
	Necessary sustainable training equipment and systems		5
V8. Sustainable infrastructure	The operating module of the technical system	IS	1
	Investments for additional administrative and logistical facilities		2
	Investments in training and recreation facilities		3
	Renewable energy / fuel supply facilities		4
	Special facilities for employee safety		5
V9. Packaging, storage, and	Requirements of eco-innovative interest for the transport of technical systems	PPDT	1
	Requirements of eco-innovative interest regarding the containerization of technical systems		2

material transportation	Sustainable marking, with restrictions on handling and transport or recognition of the coding of technical systems		3
	Storage conditions, sustainable handling and transport methods and procedures		4
	Packaging and packaging on the line of environmental protection, reuse, recycling, reuse of waste		5

Source: Own elaboration

Methodological description of the performance instrument

In management studies, performance is analyzed by factors including leadership, organizational identification, and work engagement, and it plays a vital role. It has become one of the significant indicators (Muthuswamy and Tajuddin, 2022).

Organizations evaluate their achievement based on diverse parameters, encompassing but not limited to profitability, expansion, market share, customer contentment, and employee involvement. Evaluating and quantifying organizational performance are fundamental elements of strategic management, as they allow for informed decision-making on resource allocation and future direction (Yamin et al., 1999; Ristyawan, 2020).

This section is devoted to proposing a performance model for managing military-technical systems. By integrating the elements discussed earlier and the dimensions mentioned above, a performance model can assist military establishments in identifying opportunities for performance improvement beyond their current capabilities. If the proposed performance value is dependent upon the performance dimensions, then performance innovation will be centered on stakeholder satisfaction or priorities and the organization's strategic objectives as the desired performance value.

The focus is on the performance generation and the organization's intentions to deliver the proposed performance, identifying the level of capabilities and input in the work processes.

The dimensions represent the elements of performance value creation, indicating the value expected to be received when a performance measurement system is implemented in the organization. The approach of military-technical systems enables us to comprehend the conceptual framework, which can be simplified through structured brainstorming sessions. Thus, stakeholders identify opportunities to achieve military performance.

We suggest exploring the following questions to delve deeper into the chosen topic: How crucial is an eco-leadership model in managing military-technical systems and what are its dimensions? Additionally, how does eco-leadership function within the military organization and how can it drive continuous improvement in essential military technical systems?

By gathering answers to these questions, we can establish a functional framework for understanding the impact of eco-leaders in the military. It is crucial to remember that the effects produced by all workers—not just senior leaders—are complicated.

Therefore, changing the organization is a slow process that evolves over time through lessons learned.
This study takes a bottom-up managerial approach to the military organization, where top military management supports the general interests. An interpretive approach places great emphasis on fostering a collective vision and identification of environmental leaders in the public sector, which is of paramount importance. By prioritizing this approach, we aim to ensure that public sector environmental leaders work unitedly towards common goals while maintaining a common purpose and direction.
The model has undergone several development stages, including an evaluation of performance data, a focus group with military leaders, systematization of an innovative strategic framework, theoretical pretesting in a large military institution, and finalization based on the eco-innovative experiences of the leaders.

Research Methodology

Our aim is to apply a logistic Regression to find out which variables have an influence on the performance of military eco-leaders.
The present methodology seeks to examine the association between a dependent categorical variable and multiple independent variables within a performance model. To accomplish this, a logistic regression analysis is deemed necessary. For this, we selected a categorical dependent variable and several independent variables.
DATAtab software provided the ability to use the linear regression calculator online. The calculator allowed linear modeling of the relationship between two or more variables online.
From the total of 366 previously questioned cases, a percentage of 69.97% answered in favor of the answer option: "Identification of military leaders for the achievement of the eco-innovative objectives proposed annually". Thus, the logistic regression analysis results are presented below for the four answer options pertaining to the primary factors influencing leaders' performance in question 7[Leaders' performance is primarily influenced by:].
The process of calculating multiple regression analysis has been simplified using the DATAtab software, which is available online. By utilizing this tool, we were able to easily select the dependent variable, namely performance, along with the independent variables. Based on this selection, the software automatically computed the Logistic Regression.
We intended to use our data collected at the Land Forces Academy. This scientific method represents a data calculation into the Regression Calculator, for an online regression model created for military leaders. The method implies three necessary steps, respectfully:

- collecting data into the table of the regression analysis calculator,
- selecting the dependent variable,
- selecting the group of independent variables.

An innovative model assesses how changes in the dependent variables affect the performance of the independent variable, providing insights to optimize its effectiveness. This model would facilitate the performance of regression online with ease, thereby furnishing all pertinent statistical values for our data.

Methodology description

In analyzing data using statistical methods, the Regression Calculator provided by DATAtab is an excellent tool to consider. This online resource allowed to easily conduct regression analyses on data and generate a multiple regression model. Using the Regression Calculator, we followed three simple steps:

- step 1: input data into the table provided in the regression analysis calculator,
- step 2: choose a dependent variable from data,
- step 3: select one or more independent variables from data collection.

Once completed, the calculated regression model determined how the dependent variables impact the independent variable. This enabled the conduct of regression analyses online, without the need for specialized software. Whether there is a need to calculate a linear or logistic regression, the Regression Calculator is a convenient and powerful tool to generate results.

The goal is to associate performance with several independent factors, in a certain model. The approach involves utilizing logistic regression, through which we selected variables from the research data set. Our study employed logistic regression as a statistical tool to identify the variables that bear a significant impact on performance. With access to DATAtab software, we accessed an online linear regression calculator that allowed to model the linear relationship between specific variables. Moreover, the regression data calculator provided with all the requisite statistical values for the research. To calculate the regression line, we examined the values in the output table. The software furnished with all the essential figures, including the model summary, the significance test of the entire model, and the coefficients.

Method

Logistic regression constitutes a distinctive form of regression analysis that is employed in situations where the structured variable is nominally scaled. This statistical technique is particularly useful in academic research, as it allows researchers to model relationships between variables that are dichotomous or categorical in nature. This is commonly seen with variables such as a positive value and a negative value.

In contrast to linear regression, logistical regression analysis requires that the structured variable of the regression model be at least interval-scaled. To accomplish this, we collected a dataset that included responses from various employees, as well as scales for agreement that were measured on a slow scale.

In the basic form of logistic regression, dichotomous variables (0 or 1) can be predicted. Specifically, the probability of a feature being present (i.e. having a value of 1) is estimated. This method is commonly used to determine which variables have an impact on performance. For example, if 0 stands for "not totally agree" and 1

stands for "agree," the influence of independent variables on this performance can be examined.

Performing logistic regression involves using the linear regression equation as a starting point. However, this can produce values beyond the desirable range of zero to one, which is problematic since logistic regression aims to estimate the likelihood of an event occurring rather than the value of the variable itself.

To address this, we employ the logistic function f, which ensures that only values between 0 and 1 are possible. The logistic function is derived from the logical function and always produces values between 0 and 1 for inputs ranging from negative to positive infinity. The function for describing probability is:

$$P(y=1).$$

By applying the logistic function to the regression equation, the result ensures that only values between 0 and 1 will be produced, regardless of the x values. The probability is that y, a dichotomous variable, is either 0 or 1 for given values of the independent variable. Once established, we use the equation to make predictions.

Understanding the multinomial logistic regression

Statisticians often opt for the Maximum Likelihood Method when establishing parameters for an equation. This technique is only one of several methods employed to gauge a mathematical model. Linear regression, on the other hand, typically utilizes the widely used least squares method as an estimator.

The Likelihood function L is used in logistic regression to represent the probability of occurrence of observed data. This depends on unknown parameters in the model, summarized by θ, which can change the probability of the observed data.

The Maximum Likelihood Estimator is also applied to estimate parameters. In logistic regression, the goal is to estimate the parameters that maximize the log likelihood function (L). The likelihood function is simply the logarithm of L(θ). Various algorithms, such as the Stochastic Gradient Descent, have been developed for this nonlinear optimization.

When dealing with a dependent variable that encompasses more than two categories, binary logistic regression is not a suitable method of analysis. Instead, multinomial logistic regression should be employed.

In the realm of linear regression analysis, the coefficient of determination R2 is a prevalent and fundamental measure utilized to indicate the degree of variance explained by the model. However, when it comes to logistic regression, the dependent variable is scaled nominally or ordinally. Therefore, it is not feasible to calculate a variance, and the coefficient of determination cannot be applied.

To address this issue, pseudo coefficients of determination, also known as pseudo “R” squared, have been introduced. These measures are designed to range between 0 and 1, like the actual coefficient of determination.

Two commonly used coefficients of determination are the Cox and Snell R-squared and the Nagelkerke R-squared. For calculation, we require the probability L0 from

the null model and the probability L1 from the full model, where the null model contains no independent variables and L1 represents the probability of the model with independent variables.
The Cox and Snell R-squared compares the ratio of the probability function of the null model L0 and L1. A lower ratio between L0 and L1 indicates that the full model is more significant compared to the null model. To compute the Cox and Snell R-squared, we use R squares.
Nagelkerke's "R" squared The Cox and Snell pseudo-determination measure cannot become 1, despite a model with perfect prediction. This issue is corrected with the R-squared of Nagelkerke. The Nagelkerke pseudo coefficient of determination becomes 1 if the model being evaluated provides a perfect prediction with a probability of 1.
McFadden's R-squared is a statistical metric that determines the level of compatibility between a null model and the model under scrutiny. Logistic regression, on the other hand, employs the Chi-square method to ascertain whether the model is statistically meaningful or not. This approach is also useful in comparing two models and assessing if there is a significant variance between them. Should the p-value be lower than 0.05, then the null hypothesis of the two models being the same is invalidated.

Research Results

Logistic regression results can be conveniently and efficiently calculated with DATAtab, akin to linear regression models. Researchers can use the datasets on organizational behavior in the online calculator to illustrate Regression on the desired variables.
The present study employed logistic regression analysis to investigate the influence of 39 independent variables on variable 3.7, which pertains to key positions for organizational eco-innovation, to predict the value "Totally agree." Table 1 and Table 3 illustrate the brief results. The analysis revealed that the model was statistically significant, as evidenced by $Chi^2(42) = 74.98$, $p < .001$, $n = 366$, as represented in Table 2.

Table 2. Case results

Total number of cases		**Correct assignments**		**In percent**
366		287		78.42 %
		Predicted		
		not Totally agree	Totally agree	Correct
Observed	not Totally agree	26	66	28.26 %
	Totally agree	13	261	95.26 %
	Total			78.42 %
Chi^2	**df**	**p**		
74.98	42	.001		

Source: Own elaboration

Table 3. Model brief

-2 Log-Likelihood	Cox and Snell R^2	Nagelkerke R^2	McFadden's R^2
337.75	0.19	0.27	0.18

Source: Own elaboration

Table 3 shows that a higher probability of the dependent variable being "Totally agree" is correlated with an increase in the variable PS1, with a positive coefficient (b) of 0.09. The present statistical analysis reveals that the observed effect size fails to attain statistical significance, as the indicated p-value is 0.748. Nonetheless, it is revealed a marginally positive association between PS1 and the dependent variable "Totally agree," as evidenced by the estimated odds ratio of 1.1.

On the other hand, an increase in *the variable PS2* is associated with a lower likelihood of the dependent variable being "Totally agree", with a negative coefficient (b) of -0.19. Based on the statistical analysis, p-value (0.357) proves a non-statistically meaningful effect. Furthermore, according to the odds ratio, there is a 0.83-fold drop in the probability that the dependent variable would be classified as "Totally agree" for every unit rise in the predictor variable (PS2).

It appears that *the variable PS3* has a coefficient value of 0.04, indicating a positive correlation with the "Totally agree" outcome of the dependent variable. Nonetheless, the p-value of 0.859 marks a non- significant statistical association.

Furthermore, the odds ratio of 1.04 shows that the likelihood that the dependent variable would be "Totally agree" increases by a factor of 1.04 for each unit rise in PS3.

The variable PS4 has a coefficient of b = 0.41, which implies that an increase in PS4 correlates with an increase in the likelihood of the dependent variable being "Totally agree." Nevertheless, a non-statistically significant impact is shown, p=0.089. There is a 1.5-fold increase in the likelihood that the dependent variable will be "Totally agree" for every unit increase in PS4.

PS5's coefficient (b = 0.41) shows an increase in the probability of the dependent variable being "Totally agree." However, the p-value (0.105) suggests no statistical significance. The odds ratio (1.51) indicates that an increase of one unit in PS5 increases the odds of the dependent variable being "Totally agree" by 1.51 times.

AE1's coefficient of b = 0.1 implies that an increase in AE1 corresponds to an increase in the probability of "Totally agree," but the p-value of 0.519 indicates no statistical significance. According to the chances ratio of 1.11, the likelihood of "Totally agree" increases by 1.11 times for every unit rise in AE1.

The variable AE2 has a coefficient of b = 0.51, indicating a positive association with the outcome variable "Totally agree." The odds ratio of 1.67 and the non-significant p-value of 0.119, however, point to a weak association.

We conclude that an *AE3 coefficient* -0.08 indicates a negative correlation between AE3 and the dependent variable "Totally agree." However, the p-value (0.762) suggests a non-statistically significant effect. The odds ratio confirms that an

increase in AE3 decreases the odds of the dependent variable being "Totally agree" by 0.92 times.

Though this impact is not statistically significant, as p = 0.761, an increase in AE4 is linked to a rise of the likelihood that the dependent variable would be "Totally agree." A one-unit rise in AE4 increases the probability of the dependent variable being "Totally agree" by 1.1 times, according to the odds ratio of 1.1.

Variable PP1 has a negative coefficient of -0.2, indicating a decrease in the probability of the dependent variable "Totally agree" with an increase in PP1. The non-significant p-value of 0.172 implies that no statistical association exists. On the other hand, the odds ratio (0.82) shows that the likelihood that the dependent variable would be "Totally agree" will increase by 0.82 units for every unit increase in PP1.

The variable PP2 manifests a positive coefficient of 0.2, indicating that an increase in PP2 corresponds to a simultaneous increase in the probability of the dependent variable classified as "Totally Agree". Nevertheless, the p-value of 0.48 implies that this association lacks statistical significance. Given that PP2 is increasing by one unit, the probabilities of the dependent variable being categorized as "Totally Agree" are also increasing by one unit, according to the odds ratio of 1.22.

The PP3 variable boasts a favorable coefficient of 0.09, implying that an increase in PP3 leads to a higher likelihood of the dependent variable being "Totally agree." Nonetheless, the p-value of 0.635 indicates that this correlation lacks statistical significance. Additionally, a one-unit rise in PP3 appears to translate into a 1.1-unit increase in the probabilities that the dependent variable would be "Totally agree." This is indicated by the odds ratio of 1.1.

The coefficient PP4 has a positive coefficient of 0.19, indicating a corresponding increase in the probability of "Totally agree" with its growth. However, the p-value (0.322) suggests non-significance. The 1.21 odds ratio indicates that a unit rise in PP4 corresponds to a 1.21 increase in the likelihood of "Totally agree."

Variable TE1 has a negative coefficient of -0.04, indicating a decrease in the probability of the dependent variable being "Totally agree" with an increase in TE1. The p-value of 0.779 does not support the statistical significance of the association between the dependent variable ("Totally agree") and the independent variable. It is possible to deduce that a unit increase in TE1 is correlated with a 0.96 rise in the likelihood that the dependent variable will be "Totally agree."

TE2's coefficient is positive (0.2), indicating a higher likelihood of "Totally agree" with an increase in TE2. However, the p-value (0.254) shows no statistical significance. The likelihood that someone will select "Totally agree" increases by 1.23 for every unit in TE2.

TE3 has a positive coefficient of 0.07, indicating a positive correlation with the "Totally agree" dependent variable. It is not statistically significant, though, p=0.733. However, a unit increase in TE3 appears to be associated with a little higher "Totally agree" odds ratio of 1.07.

The coefficient TE4 has a negative correlation with "Totally agree". A higher TE4 value decreases the likelihood of the dependent variable being "Totally agree". A

substantial association is indicated by the p-value of 0.024. The chances ratio of 0.73 means that the likelihood of "Totally agree" drops by 0.73 times for every unit rise in TE4.

TE5's coefficient is 0.04, indicating a positive association with "Totally agree" probability. The statistical significance is not shown by the p-value of 0.799. "Totally agree" is 1.04 times more likely to occur with a TE5 of one unit, according to the chance's ratio of 1.04.

ME1 negatively correlates with the "Totally agree" dependent variable, indicating that higher ME1 values decrease the likelihood of "Totally agree". The p-value of 0.041 suggests the statistical significance. The odds ratio of ME1, which is 0.75, indicates that the likelihood of "Totally agree" would decrease by 0.75 times for every unit rise in ME1.

ME2 has a negative correlation coefficient of -0.19 with "Totally agree". Although the chance of agreement decreases with increasing ME2 levels, the p-value of 0.168 suggests a non-statistical significance. The odds ratio of 0.82 suggests that increasing one unit of ME2 decreases the odds of agreement by 0.82 times.

ME3 has a positive correlation coefficient of 0.04 with "Totally agree". Despite the lack of statistical significance (p = 0.764), the odds ratio of 1.04 suggests that there is a 1.04 rise in the likelihood of "Totally agreeing" with every unit increase in ME3.

ME4 correlates positively with "Totally agree". However, the effect is not statistically significant (p=0.217). Increasing one unit in ME4 increases the odds of "Totally agree" by 1.19 times (odds ratio=1.19).

IDEA1's coefficient value is -0.05, indicating a negative association with the dependent variable "Totally agree". Although "Totally agree" is less likely with a higher IDEA1 rating, the effect is not statistically significant (p-value = 0.814). The chances ratio of 0.95 indicates that the likelihood of "Totally agree" is lowered by 0.95 times for every unit rise in IDEA1.

The IDEA2 coefficient is -0.21, indicating a negative correlation with the "Totally agree" dependent variable. P-value = 0.338 indicates that it is not statistically significant, nonetheless. The odds ratio of 0.81 indicates that the likelihood of "Totally agree" decreases by 0.81 with a rise in IDEA2.

The correlation coefficient for IDEA3 is 0.01. This means that as IDEA3 rises, so does the likelihood that the dependent variable will be "Totally agrees". However, this link is not statistically significant, p=0.949. By raising IDEA3 by one unit, the probability of the dependent variable being "Totally agree" will rise by 1.01 times, odds ratio=1.01.

The IDEA4 coefficient of 0.07 indicates a positive association with the "Totally agrees" dependent variable. Nevertheless, the connection is not statistically significant, p=0.757. Accordingly, the probability of "Totally agree" rises by a factor of 1.08 for each unit increase in IDEA4, odds ratio=1.08.

The dependent variable "Totally agrees" and the IDEA5 coefficient of 0.63 show a statistically significant (p-value<0.001) positive connection. For every unit rise in IDEA5, the likelihood of "Totally agree" increases by a factor of 1.88.

The SIE1 coefficient (0.36) indicates a positive relationship with the dependent variable "Totally agree," but the p-value (0.123) is not statistically significant. The odds ratio (1.44) suggests that increasing SIE1 by one unit will increase the odds of "Totally agree" by 1.44.

The coefficient for *SIE2* is -0.2, indicating that an increase in SIE2 decreases the probability of "Totally agrees." The statistical significance is indicated by the p-value of 0.173. The chances ratio of 0.82 indicates that the likelihood of "Totally agree" drops by 0.82 for every unit rise in SIE2.

The coefficient for *SIE3* is negative (-0.08), indicating a negative association with the dependent variable "Totally agree." The p-value (0.543) indicates no significant relationship. The odds ratio (0.92) suggests that increasing SIE3 by one unit will decrease the odds of the dependent variable being "Totally agree" by 0.92 times.

SIE4 has a coefficient of b = 0.1, indicating a positive relationship with "Totally agree". The p-value (0.698) indicates no statistical significance. The odds ratio of 1.11 suggests 1.11 times increase in the odds of "Totally agree" with a one-unit increase in SIE4.

SIE5 has a coefficient of b = 0.39, indicating a positive association with "Totally agree". The non-significance, however, is indicated, p=0.146. A one-unit rise in SIE5 boosts the probabilities of "Totally agree" by 1.47, according to the odds ratio of 1.47.

IS1 had a positive coefficient of b = 0.05, suggesting a higher probability of "Totally agree" with an increase in IS1. However, the p-value of .8 indicates no statistical significance. The odds ratio of 1.05 implies a one-unit increase in IS1, which increases the odds of "Totally agree" by 1.05.

IS2 has a positive coefficient of b = 0.17, indicating a higher probability of the dependent variable being "Totally agree" with an increase in IS2. As evidenced, p=0.574, the association is not statistically significant. According to the odds ratio (1.18), the likelihood that the dependent variable will be "Totally agree" will rise 1.18 times for every unit increase in IS2.

The variable IS3 has a positive coefficient of b = 0.54, indicating a higher likelihood of "Totally agree" as IS3 increases. Still, the p-value (0.077) suggests no statistical significance. The odds ratio indicates a 1-unit increase in IS3 will boost the odds of "Totally agree" by 1.71 times.

IS4 has a negative coefficient (b = -0.36), which reduces the probability of "Totally agree" in the dependent variable. The p-value (0.162) reveals no statistical significance. The odds ratio (0.7) shows that increasing IS4 by one unit decreases the odds of "Totally agree" by 0.7.

IS5's coefficient b = 0.32 indicates a positive correlation with "Totally agree". Yet, the p-value (.125) suggests statistical insignificance. According to the chances ratio (1.38), the likelihood of "Totally agree" increases by 1.38 times for every unit rise in IS5.

The PPDT1 variable's coefficient was 0.14, indicating that a rise in PPDT1 was associated with a fall in the likelihood that respondents would select "Totally agree."

There was no statistical significance between the variables, as demonstrated by the p-value of 0.531. Furthermore, a one-unit rise in PPDT1 raises the likelihood that the dependent variable will be "Totally agree" by 0.87 times, according to the odds ratio of 0.87.

Further, the coefficient of *the variable PPDT2* was 0.42, which indicated that an increase in PPDT2 resulted in an increase in the probability of the dependent variable being "Totally agree." The resulting p-value of 0.076 indicates that the observed association between the dependent variable ("Totally agree") and the independent variable (PPDT2) was not statistically significant. Nevertheless, the odds ratio (1.53) indicated that the likelihood of the dependent variable being "Totally agree" rose by a factor of 1.53 for every unit rise in PPDT2.

The coefficient of *the PPDT3 variable* was -0.13, meaning that a rise in PPDT3 was associated with a fall in the likelihood that the dependent variable would be "Totally agree." The observed association lacked statistical significance, as evidenced by the p-value of 0.467. Conversely, it is showed that an increase of one unit in PPDT3 was linked to an increase in chances of 0.87 in favor of "Totally agree" as the dependent variable, as odds ratio= 0.87.

In a similar vein, the dependent variable's likelihood of being "Totally agree" increased as *PPDT4* increased, as indicated by the variable's coefficient of 0.01. It is clear from the p-value of 0.968 that there is no statistically significant association. However, the odds ratio (1.01) indicates that the likelihood that the dependent variable will be "Totally agree" will rise 1.01 times for every unit increase in PPDT4.

Finally, *the variable PPDT5's* coefficient was 0.03. This means that as PPDT5 increased, so did the likelihood that the dependent variable would be "Totally agree." The observed association was not statistically significant, as evidenced by the p-value of.911. Furthermore, a unit increase in the predictor variable, PPDT5, was shown to increase the probability of the dependent variable being classified as "Totally agree" by 1.03 times, according to the ratio (1.03).

Table 4. The performance Model

	Coefficient B	**Standard error**	**z**	**p**	**Odds Ratio**	**95% conf. interval**
Constant	-10.96	3.29	3.33	.001	0	0 - 0.01
PS1	0.09	0.29	0.32	.748	1.1	0.63 - 1.92
PS2	-0.19	0.21	0.92	.357	0.83	0.55 - 1.24
PS3	0.04	0.23	0.18	.859	1.04	0.66 - 1.64
PS4	0.41	0.24	1.7	.089	1.5	0.94 - 2.4
PS5	0.41	0.25	1.62	.105	1.51	0.92 - 2.48
AE1	0.1	0.16	0.65	.519	1.11	0.81 - 1.53
AE2	0.51	0.33	1.56	.119	1.67	0.88 - 3.17
AE3	-0.08	0.28	0.3	.762	0.92	0.54 - 1.58
AE4	0.09	0.3	0.3	.761	1.1	0.61 - 1.97
PP1	-0.2	0.14	1.37	.172	0.82	0.62 - 1.09

PP2	0.2	0.29	0.71	.48	1.22	0.7 - 2.15
PP3	0.09	0.19	0.47	.635	1.1	0.75 - 1.6
PP4	0.19	0.19	0.99	.322	1.21	0.83 - 1.76
TE1	-0.04	0.16	0.28	.779	0.96	0.7 - 1.31
TE2	0.2	0.18	1.14	.254	1.23	0.86 - 1.74
TE3	0.07	0.19	0.34	.733	1.07	0.73 - 1.56
TE4	-0.31	0.14	2.26	.024	0.73	0.56 - 0.96
TE5	0.04	0.14	0.25	.799	1.04	0.79 - 1.36
ME1	-0.28	0.14	2.05	.041	0.75	0.57 - 0.99
ME2	-0.19	0.14	1.38	.168	0.82	0.63 - 1.09
ME3	0.04	0.14	0.3	.764	1.04	0.79 - 1.38
ME4	0.18	0.14	1.23	.217	1.19	0.9 - 1.58
IDEA1	-0.05	0.21	0.24	.814	0.95	0.63 - 1.43
IDE2	-0.21	0.22	0.96	.338	0.81	0.53 - 1.25
IDE3	0.01	0.21	0.06	.949	1.01	0.67 - 1.53
IDE4	0.07	0.24	0.31	.757	1.08	0.67 - 1.72
IDE5	0.63	0.17	3.66	<.001	1.88	1.34 - 2.63
SIE1	0.36	0.24	1.54	.123	1.44	0.91 - 2.28
SIE2	-0.2	0.14	1.36	.173	0.82	0.62 - 1.09
SIE3	-0.08	0.14	0.61	.543	0.92	0.7 - 1.21
SIE4	0.1	0.26	0.39	.698	1.11	0.66 - 1.86
SIE5	0.39	0.27	1.45	.146	1.47	0.87 - 2.49
IS1	0.05	0.21	0.25	.8	1.05	0.7 - 1.58
IS2	0.17	0.29	0.56	.574	1.18	0.66 - 2.1
IS3	0.54	0.3	1.77	.077	1.71	0.94 - 3.1
IS4	-0.36	0.26	1.4	.162	0.7	0.42 - 1.16
IS5	0.32	0.21	1.53	.125	1.38	0.91 - 2.07
PPDT1	-0.14	0.22	0.63	.531	0.87	0.57 - 1.34
PPDT2	0.42	0.24	1.78	.076	1.53	0.96 - 2.44
PPDT3	-0.13	0.18	0.73	.467	0.87	0.61 - 1.26
PPDT4	0.01	0.15	0.04	.968	1.01	0.76 - 1.34
PPDT5	0.03	0.26	0.11	.911	1.03	0.62 - 1.7

Source: Own elaboration

When the odds ratio value is greater than 1, it is considered to have a "positive effect" because the odds increase. Conversely, odds ratios between 0 and 1 suggest "negative effects" as the odds decrease. Odds ratios of exactly 1 indicate "no association." It is not possible for an odds ratio to be less than 0. A model's predictive accuracy is measured by its AUC (Area Under the Curve) score ranging from 0 to 1. An AUC of 0.0 indicates completely incorrect predictions, while an AUC of 1.0 indicates entirely accurate predictions.

Logistic regression ROC curves help determine the optimal cutoff point for predicting whether a new observation is a "failure" (0) or a "success" (1). An ideal

ROC curve can effortlessly differentiate between 0s and 1s, and the cutoff for both sensitivity and specificity is 100%. With an AUC of 0.78, the ROC curve is considered acceptable as the general report's AUC value is between 0.7 and 0.8, as seen in Figure 1. Overall, an AUC of 0.78 means that for data points belonging to different classes, the model has a 78% probability of correctly segregating or ranking them, further developed in Table 5.

Table 5. Coordinates of ROC Curve

Positive if greater than or equal to	Sensitivity	1 - Specificity
0.115	1	1
0.131	1	0.989
0.149	1	0.978
0.157	1	0.967
0.176	1	0.957
0.177	1	0.946
0.215	0.996	0.946
0.217	0.996	0.935
0.23	0.996	0.924
0.245	0.996	0.913
0.253	0.996	0.902
0.253	0.996	0.902
0.278	0.996	0.88
0.282	0.993	0.88
0.287	0.989	0.88
0.294	0.989	0.87
0.312	0.989	0.859
0.336	0.985	0.859
0.34	0.982	0.859
0.341	0.982	0.848
0.347	0.982	0.837
0.347	0.978	0.837
0.35	0.974	0.837
0.372	0.974	0.826
0.373	0.974	0.815
0.38	0.974	0.804
0.386	0.974	0.793
0.389	0.971	0.793
0.397	0.971	0.783
0.4	0.971	0.772
0.408	0.971	0.761
0.409	0.967	0.761
0.425	0.967	0.75
0.429	0.964	0.75
0.433	0.964	0.739
0.457	0.96	0.739

0.479	0.956	0.739
0.493	0.956	0.728
0.498	0.956	0.717
0.504	0.953	0.717
0.505	0.953	0.707
0.506	0.949	0.707
0.51	0.945	0.707
0.511	0.945	0.696
0.512	0.942	0.696
0.515	0.942	0.685
0.521	0.938	0.685
0.522	0.938	0.674
0.523	0.938	0.663
0.524	0.938	0.652
0.532	0.934	0.652
0.535	0.931	0.652
0.543	0.931	0.641
0.548	0.927	0.641
0.55	0.927	0.63
0.552	0.927	0.62
0.553	0.923	0.62
0.554	0.923	0.609
0.554	0.92	0.609
0.558	0.92	0.598
0.56	0.916	0.598
0.562	0.916	0.587
0.565	0.916	0.576
0.572	0.912	0.576
0.572	0.912	0.565
0.576	0.909	0.565
0.579	0.905	0.565
0.579	0.905	0.554
0.581	0.905	0.543
0.582	0.901	0.543
0.586	0.898	0.543
0.586	0.894	0.543
0.588	0.891	0.543
0.589	0.887	0.543
0.594	0.883	0.543
0.599	0.88	0.543
0.6	0.88	0.533
0.604	0.876	0.533
0.605	0.876	0.522
0.609	0.876	0.511
0.614	0.872	0.511

0.618	0.869	0.511
0.618	0.869	0.5
0.623	0.869	0.489
0.629	0.865	0.489
0.629	0.865	0.478
0.631	0.861	0.478
0.631	0.861	0.467
0.633	0.858	0.467
0.633	0.854	0.467
0.636	0.85	0.467
0.636	0.85	0.457
0.638	0.847	0.457
0.639	0.847	0.446
0.64	0.843	0.446
0.64	0.839	0.446
0.641	0.839	0.435
0.642	0.836	0.435
0.647	0.832	0.435
0.654	0.828	0.435
0.659	0.825	0.435
0.661	0.821	0.435
0.663	0.818	0.435
0.665	0.814	0.435
0.667	0.81	0.435
0.67	0.807	0.435
0.671	0.803	0.435
0.673	0.799	0.435
0.677	0.799	0.424
0.678	0.799	0.413
0.678	0.799	0.402
0.679	0.799	0.391
0.688	0.796	0.391
0.69	0.792	0.391
0.692	0.788	0.391
0.693	0.788	0.38
0.704	0.785	0.38
0.704	0.781	0.38
0.707	0.777	0.38
0.707	0.777	0.37
0.707	0.777	0.37
0.709	0.774	0.359
0.709	0.77	0.359
0.714	0.766	0.359
0.715	0.763	0.359
0.723	0.759	0.359

0.723	0.759	0.348
0.727	0.755	0.348
0.727	0.752	0.348
0.727	0.752	0.337
0.73	0.752	0.326
0.73	0.752	0.315
0.732	0.752	0.304
0.733	0.748	0.304
0.733	0.745	0.304
0.733	0.741	0.304
0.734	0.737	0.304
0.735	0.734	0.304
0.736	0.73	0.304
0.738	0.73	0.293
0.739	0.726	0.293
0.741	0.723	0.293
0.742	0.719	0.293
0.742	0.715	0.293
0.743	0.712	0.293
0.746	0.712	0.283
0.751	0.708	0.283
0.752	0.704	0.283
0.752	0.701	0.283
0.754	0.701	0.272
0.755	0.701	0.261
0.757	0.697	0.261
0.758	0.693	0.261
0.76	0.693	0.25
0.762	0.69	0.25
0.764	0.69	0.239
0.765	0.686	0.239
0.767	0.682	0.239
0.77	0.679	0.239
0.771	0.675	0.239
0.774	0.672	0.239
0.776	0.668	0.239
0.778	0.664	0.239
0.779	0.661	0.239
0.785	0.657	0.239
0.785	0.653	0.239
0.787	0.653	0.228
0.788	0.65	0.228
0.791	0.646	0.228
0.793	0.642	0.228
0.793	0.639	0.228

0.794	0.635	0.228
0.795	0.631	0.228
0.8	0.628	0.228
0.802	0.628	0.217
0.804	0.628	0.207
0.805	0.624	0.207
0.805	0.62	0.207
0.806	0.617	0.207
0.807	0.613	0.207
0.807	0.609	0.207
0.808	0.609	0.196
0.81	0.606	0.196
0.81	0.602	0.196
0.811	0.599	0.196
0.811	0.595	0.196
0.812	0.591	0.196
0.812	0.588	0.196
0.813	0.584	0.196
0.813	0.58	0.196
0.814	0.577	0.196
0.815	0.573	0.196
0.816	0.569	0.196
0.818	0.566	0.196
0.819	0.562	0.196
0.82	0.558	0.196
0.82	0.555	0.196
0.822	0.551	0.196
0.823	0.547	0.196
0.826	0.544	0.196
0.827	0.544	0.185
0.827	0.54	0.185
0.827	0.536	0.185
0.827	0.533	0.185
0.828	0.529	0.185
0.828	0.526	0.185
0.829	0.522	0.185
0.83	0.518	0.185
0.831	0.515	0.185
0.836	0.511	0.185
0.837	0.507	0.185
0.837	0.504	0.185
0.838	0.5	0.185
0.839	0.5	0.174
0.84	0.496	0.174
0.84	0.496	0.163

0.843	0.493	0.163
0.843	0.489	0.163
0.845	0.485	0.163
0.845	0.482	0.163
0.846	0.478	0.163
0.846	0.478	0.152
0.848	0.478	0.141
0.848	0.474	0.141
0.849	0.471	0.141
0.849	0.467	0.141
0.852	0.464	0.141
0.853	0.46	0.141
0.854	0.456	0.141
0.855	0.453	0.141
0.856	0.449	0.141
0.856	0.449	0.13
0.857	0.445	0.13
0.857	0.442	0.13
0.857	0.442	0.12
0.859	0.438	0.12
0.861	0.434	0.12
0.862	0.431	0.12
0.862	0.431	0.109
0.864	0.431	0.098
0.864	0.427	0.098
0.864	0.423	0.098
0.865	0.42	0.098
0.866	0.416	0.098
0.867	0.412	0.098
0.867	0.409	0.098
0.869	0.405	0.098
0.87	0.401	0.098
0.87	0.398	0.098
0.871	0.394	0.098
0.871	0.391	0.098
0.874	0.387	0.098
0.875	0.383	0.098
0.875	0.38	0.098
0.875	0.376	0.098
0.876	0.376	0.087
0.878	0.372	0.087
0.882	0.369	0.087
0.883	0.369	0.076
0.884	0.365	0.076
0.884	0.361	0.076

0.884	0.358	0.076
0.885	0.354	0.076
0.889	0.354	0.065
0.891	0.35	0.065
0.892	0.347	0.065
0.892	0.343	0.065
0.892	0.339	0.065
0.893	0.336	0.065
0.894	0.332	0.065
0.894	0.328	0.065
0.894	0.325	0.065
0.895	0.321	0.065
0.897	0.318	0.065
0.901	0.314	0.065
0.901	0.314	0.065
0.901	0.314	0.065
0.901	0.314	0.065
0.905	0.299	0.065
0.906	0.296	0.065
0.906	0.292	0.065
0.906	0.288	0.065
0.908	0.285	0.065
0.908	0.281	0.065
0.911	0.281	0.054
0.911	0.277	0.054
0.911	0.274	0.054
0.914	0.27	0.054
0.917	0.266	0.054
0.918	0.263	0.054
0.918	0.259	0.054
0.918	0.255	0.054
0.919	0.252	0.054
0.919	0.248	0.054
0.92	0.248	0.043
0.923	0.245	0.043
0.923	0.245	0.033
0.924	0.241	0.033
0.925	0.237	0.033
0.928	0.234	0.033
0.928	0.234	0.022
0.928	0.23	0.022
0.928	0.226	0.022
0.928	0.223	0.022
0.929	0.219	0.022
0.93	0.215	0.022

0.931	0.212	0.022
0.931	0.208	0.022
0.932	0.204	0.022
0.932	0.201	0.022
0.935	0.197	0.022
0.936	0.193	0.022
0.936	0.19	0.022
0.936	0.186	0.022
0.937	0.182	0.022
0.938	0.179	0.022
0.943	0.175	0.022
0.944	0.172	0.022
0.947	0.172	0.011
0.947	0.168	0.011
0.947	0.164	0.011
0.947	0.161	0.011
0.948	0.157	0.011
0.95	0.153	0.011
0.952	0.15	0.011
0.953	0.146	0.011
0.954	0.142	0.011
0.954	0.139	0.011
0.955	0.139	0
0.955	0.135	0
0.956	0.131	0
0.957	0.128	0
0.957	0.124	0
0.958	0.12	0
0.96	0.117	0
0.96	0.113	0
0.961	0.109	0
0.961	0.106	0
0.962	0.102	0
0.962	0.099	0
0.963	0.095	0
0.963	0.091	0
0.965	0.088	0
0.965	0.084	0
0.965	0.08	0
0.965	0.077	0
0.967	0.073	0
0.967	0.069	0
0.97	0.066	0
0.97	0.062	0
0.971	0.058	0

0.972	0.055	0
0.972	0.051	0
0.973	0.047	0
0.974	0.044	0
0.975	0.04	0
0.975	0.036	0
0.975	0.033	0
0.978	0.029	0
0.979	0.026	0
0.981	0.022	0
0.982	0.018	0
0.983	0.015	0
0.984	0.011	0
0.984	0.007	0
0.992	0.004	0

Source: Own elaboration

The relationship between the variables reflects the core of efficiency measures to maintain military systems within planning parameters. A viable innovation network requires a planning element for network center to coordinate its implementation. The focus on implementing integrated systems leads to sustainable technologies and materials organized at the lowest possible cost that can be adapted to the military technical systems. The makeup of modern leaders includes eco-innovation approaches to solve challenges.

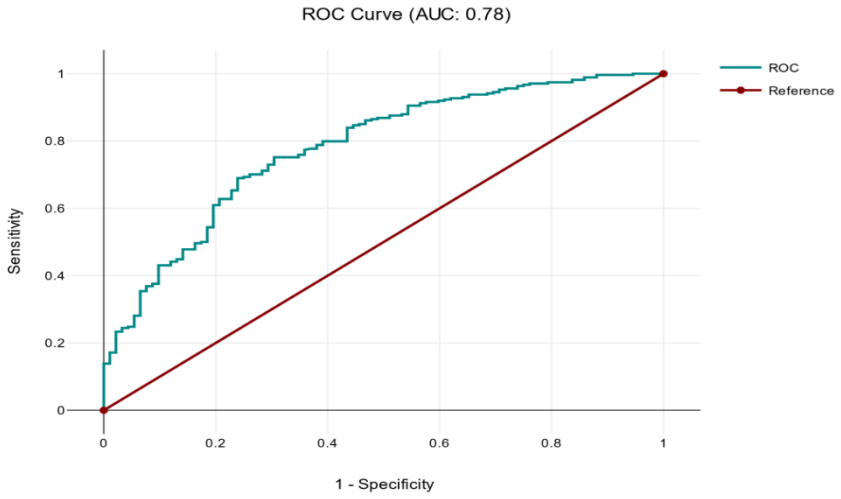

Figure 1: ROC Curve flow for the logistic regression
Source: Own elaboration

Social responsibility objectively evaluates an organization's performance by presenting the benefits and drawbacks (Man et al., 2021). Still, acknowledging employee performance is an essential aspect of leading initiatives. Such eco-innovative programs can facilitate skills development, including leadership and personal growth, and motivate exceptional employees to deliver superior work. In evaluating an entity's performance, partners observe its liquidity, employees consider its size, and investors focus on its profitability. Therefore, performance assessment should be thoroughly examined in light of the factors that affect it (Mura and Kajzar, 2019). It involves scrutinizing multiple components, irrespective of their definition, to ensure evaluation.

A comprehensive approach is necessary to promote environmental sustainability and green practices in different facilities. This should include conservation principles, community empowerment, education, ecological sustainability, damage minimization, and local product utilization (Astawa et al., 2021; Arsawan et al., 2021). A process that integrates an organization's performance measurement with its responsibility activities determines sustainable development goals for all stakeholders.

Conclusion

Leaders may more successfully identify their team members' aims and ways of thinking, as well as draw them closer to the organization. This is made possible by leadership. Additionally, these findings are consistent with Castillo-Vergara, Alvarez-Marin, and Placencio-Hidalgo's earlier research (Muthuswamy and Tajuddin, 2022).

Entities seeking a competitive advantage can leverage their intangible assets, referred to as "green relational capital"(Long and Liao, 2023). This encompasses the relationship between the company, its suppliers, customers, network members, and partners regarding corporate environmental management. By nurturing these relationships, organizations can benefit from their partners' expertise, gain valuable market insights, mitigate risks, encourage green innovation, enhance their reputation, and optimize strategic decision-making processes.

The impact of eco-leadership on military operations can be both positive and challenging. Positive impacts of eco-leadership on military operations include the integration of sustainable practices that reduce the ecological footprint of military activities. The inculcation of environmental stewardship and responsibility by military leaders can foster a sense of pride and purpose among personnel, ultimately leading to enhanced morale and a greater commitment to sustainable practices. Furthermore, eco-leadership can enhance the military's reputation in the public eye, demonstrating a commitment to environmental responsibility and global sustainability goals.

This paper influences the focus of efforts to make organizational processes more efficient at a systemic level. Possible solutions include instructions for transforming

current capabilities, while new operational requirements are achievable if remaining opened to innovation is the first step in organizing a sustainable military network.
The implementation of sustainability practices in the military and the integration of these practices into strategic planning are often influenced by the leadership effect of managers. The promotion and implementation of sustainable practices within the military are of paramount importance, and leaders play a crucial role in this regard.
Additionally, opponents of eco-leadership in the military argue that the emphasis on environmental sustainability may conflict with the traditional values and culture of the military. In a highly structured and mission-focused environment, some argue that prioritizing eco-friendly initiatives might be perceived as a divergence from core military principles and could potentially undermine unity and cohesion within the ranks.
Our research aims to achieve the best possible results through several methods, including:

- conducting focus group sessions that align with ecological themes,
- identifying the categories of personnel who will be directly impacted by the innovation,
- conducting research across several military institutions and consolidating the data to establish general best practices,
- introducing new short and long-term supply rules, while also providing an opportunity for sharing ecological experiences,
- disseminating information to multiple participants and employees from different administrative positions through the implementation of a transversal eco-leadership team,
- updating organizational strategies by adapting to ecological strategic actions.

Ongoing research is still focused on discussing the ambiguity of eco-leaders and their conceptual differences due to various influencing factors. Furthermore, it is important to find solutions using multiple integrative approaches to adapt management strategies towards a culture that prioritizes ecological performance, or to support current ecological practices in the military setting. Establishing a relationship between high-performing eco-leaders and military technical systems is challenging because of traditional behavior formulas and the lack of relevant research. It all depends on leaders' ability to promote these practices and engage all staff categories in the eco-innovation of the decision-making process.
The main challenge remains for leaders who seek organizational change to identify new sustainable solutions to intervene upon the architecture of the managed systems.
Eco-leadership in the military is crucial in addressing environmental sustainability and reducing the ecological impacts of military operations. Leadership is critical in promoting and implementing eco-sustainable practices within the military.
Leaders must navigate the delicate balance between environmental responsibility and operational requirements, ensuring that eco-friendly initiatives do not detract from the military's core mission. By integrating sustainability principles into their

decision-making processes and setting sustainable goals, military leaders can lead by example and drive change towards a greener and more environmentally.
Eco-leadership in the military represents an opportunity for innovative and forward-thinking leadership, bridging environmental responsibility with national security. It necessitates a nuanced approach that acknowledges the complexities of military operations while embracing the imperative of sustainable practices for the benefit of present and future generations.

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MODEL PROGNOZOWANIA WYNIKÓW Z KRYTERIAMI ROZWOJU ZDOLNOŚCI DO EKOINNOWACJI: ANALIZA REGRESJI LOGISTYCZNEJ DLA LOGISTYKI WOJSKOWEJ

Streszczenie: Niniejsze badanie zagłębia się w model wydajności szczególnie istotny dla ekoprzewództwa. Dodatkowo analizuje znaczące poprawy wyników w systemach wojskowych. Badanie dostarcza cennych spostrzeżeń i potencjalnych implikacji ciekawych dla wielu interesariuszy. Dzięki temu podejściu można osiągnąć wyższe poziomy efektywności, skuteczności oraz poprawę ogólnych wyników, co przyczynia się do realizacji nadrzędnych celów. Przyjęte podejście obejmuje konceptualną syntezę systematycznych badań na temat ekoprzewództwa. Zidentyfikowano czynniki reprezentatywne dla związku między ekoprzewództwem a roztropnym działaniem wojskowym. Wyniki badania ujawniły nową perspektywę zarządzania wojskowymi systemami technologicznymi poprzez systematyzację innowacyjnego podejmowania zielonych decyzji. Ponadto, badanie sugeruje rekomendacje dotyczące rozwoju przyszłych inicjatyw ekologicznych oraz interwencji w praktyce wojskowego zaopatrzenia. Na koniec, artykuł proponuje pragmatyczny model dla ekoprzewódców. Proponowany model ma na celu zaprezentowanie wszystkich ekologicznych implikacji w praktyce podejmowania decyzji wojskowych.

Słowa kluczowe: model wydajności, regresja logistyczna, wojskowe ekoprzewództwo, ekoinnowacja