Newsletter

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TECHNICAL FILE

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Editors:
José Fernandes Rodrigues
Rui Matos
Filipe Rodrigues
Miguel Jacinto
Pedro Sobreiro

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01

EDITORIAL

LQRC-CIEQV held another scientific council where the 2022 activity report was approved. As can be seen, the researchers' scientific production reached a significant level of quality (201 articles, 19 books, 54 chapters). The number of international partnerships is quite relevant (109 articles, 75 institutions in projects). Social intervention, with programs and projects, is decisive and impactful. LQRC-CIEQV reached 95 integrated members, of which 19 were PhD students. These indicators reveal the health of LQRC-CIEQV and its potential for research in Quality of Life.

At this moment in the life of Polytechnic Institutes, when they will finally be able to award a doctoral degree through their own doctoral programs, the quality of their research centres is decisive. In this way, LQRC-CIEQV is aligned in its development of a fundamental added value for a doctoral program in Research in Quality of Life with our institutional consortium.

This edition of the newsletter is dedicated to the work of researchers in the scientific area "Organizational Dynamics". Although the number of integrated members is small, its activity is quite interesting, revealing the projects and research produced. It should be noted the obtaining of the doctorate and the financed projects. In this issue, we also have the article "Predicting fitness centre dropout", which proves to be a good indicator of the research carried out.

LQRC-CIEQV coordination can only express its satisfaction for the work carried out in this scientific area and congratulates the authors of the published works and the members who obtained the doctorate. We wish you good readings.

José Fernandes Rodrigues [1,2]

[1] Sport Science School of Rio Maior – Polytechnic Institute of Santarém

[2] Life Quality Research Centre

This year, at the end of February, the LQRC-CIEQV developed the 2nd International Congress on Research Trends in Quality of Life. The research area of Organisational Dynamics, where we pay special attention to the impact on the quality of life of individuals and the collective. To participate in the conference and share his experience, we have invited Professor Jonathan Grix, a Full Professor of Sport Politics and Policy in the Faculty of Business and Law at Manchester Metropolitan University. A world-renowned academic leader in the field of sport policy with more than 8000 citations (Google Scholar).

The presentation addressed existing problems in the implementation of Sport England, which is considered a reference to best practices. However, there are also shortcomings and problems in England. How we can explore these shortcomings and learn from them is imperative to improve the quality of life. There are several indicators of quality of life, including adequate food, adequate housing and environment, social and psychological fulfillment, health, and physical activity. It seems that this is a multidisciplinary problem where it is imperative to explore the importance of sport. Sports have unique features including the ability to:

- Improve young people's physical health and also their mental well-being. Sports can help you make new friends, strengthen existing relationships, and develop social skills;
- Building self-esteem as they allow you to discover new things about yourself, overcome challenges, and achieve goals;
- Prevent or reduce the risk of many chronic diseases, such as cardiovascular disease, diabetes, obesity, and some cancers;
- Handle stress and anxiety by releasing endorphins, which are natural mood enhancers;
- Improve your cognitive abilities, such as memory, concentration, and problem-solving. But also enhance your creativity, learning, and academic performance;
- Improve your fitness, strength, endurance, flexibility, and coordination;
- Improve your sleep quality and quantity by regulating your circadian rhythm, reducing stress, and promoting physical exhaustion.

It seems that this could improve and provide support to increase well-being, and if we address this correctly, probably the investment in well-being (where we should not forget the physical activity) could improve the return on investment by several factors, 2x, 3x, or probably more.

How can we contribute, and how can the research area of organizational dynamics help? This is a million-dollar question. Our members have been working on different issues and researching these problems. But we need to zoom out and connect the dots to understand with a broader perspective.

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How can our differences and interests be an advantage rather than a disadvantage? The key concept is multidisciplinarity, where it seems we are living in times of great opportunities, but also threats. Artificial intelligence, and blockchain technologies, allow us to develop organizational structures that provide the underlying mechanisms to reduce the problems that arise from unsystematized decisions, allow the reduction of bias in decision-making and provide the means to increase transparency.

If we have objectives to improve well-being, the majority of actions should be focused on these objectives, investments should be made directly into priority areas and to ensure economic growth to support that, here the idea is to support the concept that sport is not spending, it is an investment that could boost our lives and our economy. Creativity in dealing with these issues will be crucial, and we believe that if we understand our limitations, explore our heterogeneity and use it as an advantage, we can achieve interesting results, if we can manage that. We are at an important crossroads and, as they say, we should prepare for the worst and hope for the best.

Pedro Sobreiro [1,2]

[1] Sport Science School of Rio Maior – Polytechnic Institute of Santarém

[2] Life Quality Research Centre

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02

ARTICLE

— Predicting fitness centre dropout

Sobreiro, P. [1,2], Gonçalves, C. [3,4], Santos, A. [1,2], Pinheiro, P. [2], Carvalho, P. G. [4]

[1] Sport Science School of Rio Maior – Polytechnic Institute of Santarém

[2] Life Quality Research Centre

[3] Polytechnic Institute of Bragança

[4] Universidade Aberta / Research Center in Sports Science, Health Sciences and Human Development (CIDESD)

Abstract

The phenomenon of dropout is often found among customers of sports services. In this study we intend to evaluate the performance of machine learning algorithms in predicting dropout; in doing so we also look at the effectiveness of adjusting management policies about specific groups at risk, using available data about their historic use of facilities.

Data relating to a sample of 5,209 members, 3,376 males, and 1,833 females, was taken from a Portuguese fitness centre, over the period from June 2014 to October 2017. The information retrieved included the following variables: registration data, payments and frequency, age, sex, non-attendance days, amount billed, average weekly visits, the total number of visits, visits hired per week, number of registration renewals, number of member referrals, total monthly registrations, and total members enrolment time, which may be indicative of members' commitment.

To inform management decisions in fitness centres, the use of machine learning decision trees provides information that can be readily acted upon to identify member profiles of those at risk of dropout, while at the same time giving guidelines for measures and policies designed to reduce it.

Keywords: Sports Management; Sports services; Fitness; Machine Learning algorithm; Dropout prediction; Gradient Boost Classifier.

1. Introduction

Dropout has always been an ongoing concern for fitness centre managers. According to the International Health, Racquet & Sports Club Association (IHRSA, 2010), six causes of dropout have been identified: the high number of members in facilities; dissatisfaction with employees; a lack of interest shown by staff; disappointment with programmes and activities provided, and the inaccessibility or lack of response from individuals in charge. Previous studies have already addressed the difficulties faced by fitness centres in retaining members, in an attempt to reduce high rates of dropout (Grantham et al., 1998; Tharret & Peterson, 2006). The fitness sector is well known for its high incidence of dropout (Avourdiadou & Theodorakis, 2014), and Portugal is no exception where rates of 65% were experienced in 2018 (Pedragosa & Cardadeiro, 2018).

Machine learning can be used as a prediction tool. It is defined as an automated process that extracts patterns from data (Kelleher et al., 2015), enabling the anticipation of events that allows the development of counteractions. Machine learning can be used to inform the development of customer retention strategies based on existing data (Verbeke et al., 2011). To our knowledge, no available studies are using this method applied to members' available data held by fitness centres. Therefore it would be sensible to experiment with it first, using available data to 'train' a model and to make generalizations (Domingos, 2012).

The objective of this research is to predict customer dropout in fitness centres using machine learning algorithms, through the identification of customer profiles, which can then be used to inform management policies designed to increase the profitability of these centres.

2. Methods

Based on a fitness centre customer dataset we applied machine learning algorithms to find useful management information to reduce the incidence of potential dropout.

In this study, data from 5,209 fitness customers were analysed (mean age = 27.87, SD=11.80 years) from a Portuguese fitness centre. The average number of registrations per month was 9.34±8.22. The data was collected from the software e@sport (Cedis, Portugal) between 1 June 2014 and 31 October

2017. The information retrieved covered the registration data, payments made, and frequency of visits. Dropout was defined according to the contractual conditions of membership in the fitness centre; it occurred when the customer gave notice of an intention to terminate the contract or did not pay the monthly fee within a period of up to 60 days.

The data processing was developed with Anaconda and IPython (Continuum Analytics, 2016) using Pandas (McKinney, 2010) and NumPy (Walt et al., 2011) software. The data retrieved is presented in Table 1. The dataset includes 12 variables for 3,381 males and 1,834 females. During the period of the study, only 644 customers remained members; this corresponds to 12.3% of the total.

Variable	Description	Min	Max	Mean (SD*)
Age	Age of the participants in years	9	93	27.88 (11.80)
Sex	Sex (0-female, 1-male)	0	1	0.35 (0.48)
Dayswfreq	Non-attendance days before dropout	0	991	76.40 (101.80)
Tbilled	The total amount billed during the registration period (values in euros)	3.60	3747.20	155.32 (162.45)
Maccess	The average number of visits per week	0.01	10.33	0.89 (0.76)
Entries	Total number of visits to the fitness centre that the customer made during the registration period	1	585	29.06 (41.15)
Cfreq	Weekly contracted accesses	2	7	6.86 (0.72)
Nrenewals	Number of registration renewals	0	4	0.78 (0.90)
Cref	Number of customer referrals	0	2	0.01 (0.08)
Rmonth	Registration month	1	12	6.72 (3.53)
Months	Customer enrolment (total time in months)	0	47	9.35 (8.22)
Dropout	Measurement of customers' commitment (0=active, 1=dropout)	0	1	0.88 (0.33)

***SD** – Standard deviation

Table 1: Variables extracted for each subject of the sample and descriptive statistics.

We investigated and compared the performance of several machine learning classification algorithms: Logistic Regression (LR), Decision Tree Classifier (DTC), Random Forest Classifier (RFC), and Gradient Boosting Classifier (GBC).

3. Results

The mean age of the 5,215 customers was 27.88±11.79 years. These customers accomplished an average number of visits of 0.89±0.76 per month. The total number of visits to the sports facility was 29.04±41.13. The number of registrations per month was on average 9.34±8.22.

We examined the machine learning models and evaluated their performance. The hyperparameter optimisation using grid search on the training data achieved an area under the curve (AUC) score for LR of 0.845, DTC 0.898, RFC 0.947, and GBC 0.965. The performance of the prediction was calculated by comparing the model prediction against the actual observed values. The accuracy, sensitivity, precision, F1 Score, and AUC are presented in Table 2. The algorithm with the best performance was GBC with an accuracy of 0.955, specificity of 0.968, precision of 0.760, F1 Score of 0.819, and AUC of 0.873. The GBC algorithm was only surpassed by the RFC algorithm regarding AUC (0.890, Table 2), which in our study represents the lower capability to distinguish dropout and non-dropout.

Performance	**LR**	**DTC**	**RFC**	**GBC**
Accuracy	0.785	0.839	0.920	**0.955**
Sensitivity	0.785	0.842	0.938	**0.986**
Specificity	0.786	**0.819**	0.790	0.735
Precision	0.963	**0.970**	0.969	0.963
F1 Score	0.865	0.901	0.953	**0.975**
AUC CI* (Lower, Upper)	0.786 (0.759,0.812)	0.830 (0.807,0.853)	**0.865** (0.845,0.884)	0.860 (0.840,0.881)

* AUC 95% Confidence Interval (CI)

Table 2: Comparison of the performance of the machine learning classification models using holdout validation.

The algorithms DTC, RFC, and GBC allow the visualisation of the trained model to understand the decision tree used to predict dropout (1=yes or 0=no); this makes it possible to identify the variables more clearly, by simplifying the representation of trees to three levels.

In Figure 1, the decision tree used to train the algorithm DTC is shown, showing ‘free_use’ as the first criterion, followed by ‘months’ and days without attendance. In the decision tree used in DTC, ‘tbilled’

was the first node used, followed by ‘tbilled’ and ‘dayswfreq’ and ‘months’, which reflects the binary decision used in the model. It is possible to extract if-then-else rules to identify a dropout profile related to customers that have lower ‘tbilled’ ≤ 365.025, ‘dayswfreq’ > 7.5, age ≤ 42.5, and ‘dayswfreq’ > 15.5 to represent 1045 customers that dropped and 11 that didn’t. This allows us to identify the rule (‘tbilled’ ≤ 365.025) and (‘dayswfreq’ > 7.5) and (age ≤ 42.5) and (‘dayswfreq’ > 15.5).

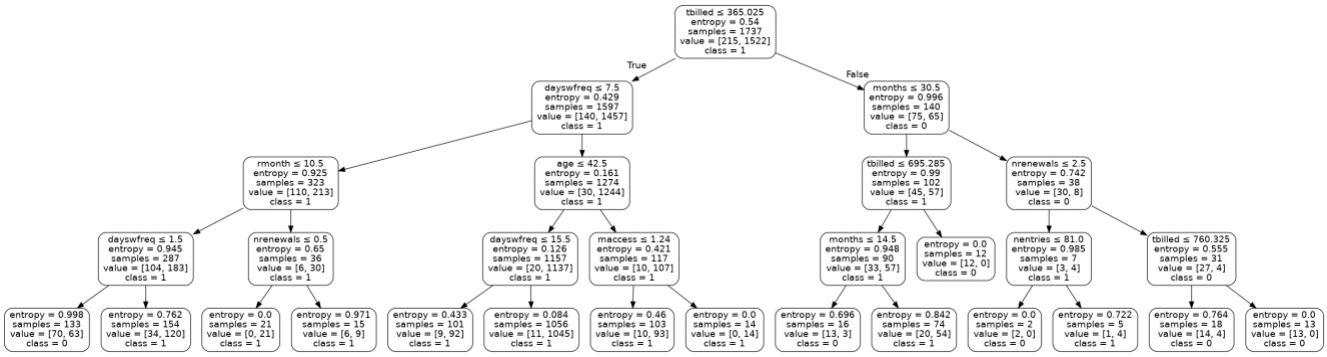

Figure 1: Example of a decision tree using the DTC algorithm.

4. Discussion

The best performance algorithm may be used to identify the risk of dropout, using data from its information systems. This enables the development of management countermeasures to reduce dropout. These indicators should trigger actions related to self-motivation and goal theory, following existing studies (Cervelló et al., 2007). The results give us guidelines about which variables fitness managers should consider concerning the importance attributed to the algorithms’ performance such as ‘dayswfreq’, ‘months’, ‘tabilled’, ‘nrenewals’, ‘free_use’, and ‘age’ as variables to monitor periodically. The tree-based models select the variable importance based in the minimization of the impurity of the nodes, which led to a similar result in the importance of the variables.

The use of decision trees allows us to extract actionable information (Kim et al., 2001; Pan et al., 2007). Several studies have tried to predict dropout from fitness centres (Emeterio et al., 2016, 2019) but the use of decision trees wasn’t adopted. The exception is the study of Pinheiro and Cavique (2018), which suggested the use of decision trees to identify workflows to increase retention. Our study contributes to this discussion since have analysed the performance of algorithms that allows the generation of decision trees.

5. Conclusion

According to our study, sports managers are invited to analyse these variables regularly if they want to improve retention and reduce dropout; furthermore, it also recommends the use of machine learning algorithms based on decision trees to help managers extract actionable knowledge and rules to inform workflows to reduce dropout, using the decision trees and the dropout risk to create if-then-else rules to support the definition of workflows with countermeasures according to customer characteristics.

Forthcoming studies should aim at replicating this study in other fitness centres and health clubs, to validate the results in other contexts.

Funding information: Portuguese Foundation for Science and Technology, I.P., Grant/Award Number UIDP/04748/2020.

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03

NEWS – PROJECTS UNDER DEVELOPMENT

— Project 1:

TIME2ACT@SD: Time to act through sustainable experiences for higher education students

(Project ID: 2022-1-PT01-KA220-HED-000087984)

Susana Leal[1,2], Ana Loureiro[3], Cláudio Barradas[1], Inês Messias[3], João Nascimento[1], Sandra Oliveira[1,2]

[1] School of Management and Technology of Santarém – Polytechnic Institute of Santarém

[2] Life Quality Research Centre

[3] School of Education of Santarém – Polytechnic Institute of Santarém

TIME2ACT@SD aims to act in the learning environments supporting higher education (HE) teachers and students in developing knowledge, skills, and attitudes in the field of Sustainable Development (SD) and Sustainable Development Goals (SDGs). Sustainability should be addressed in all higher education institutions (HEIs), regardless of the field of study and curricula of the courses, and the student's background.

TIME2ACT@SD aims to develop a pack of open educational resources and promote a set of initiatives to address the lack of knowledge and skills, and to change attitudes and actions towards SD among students attending HEIs. Through innovative educational practices (MOOC – Massive Open Online Courses, and gamification strategies) and active methodologies (workshops and bootcamps as experimental activities), the project aims to promote the target group's SD/SDG literacy and behavioural changes in terms of individual preferences, SD awareness, consumption habits, and lifestyles. The project outcomes will be developed to enhance the three levels of acquisition of sustainability competencies: knowledge (conceptual learning), know-how (practical skills), and do (linked to the demonstration in action and its transferability to real-life situations).

Main objectives

- To identify knowledge and skill gaps in the field of SD and SDGs, involving both HE students and teachers, to provide inputs for the development of innovative resources for the HE teaching-learning process.
- To develop innovative tools and interactive content, based on the use of gamification concepts, for formal and non-formal education of HE students, in the field of SD and SDGs, through a transdisciplinary and student-centred approach, that can be used by HE teachers, in all curricula, for HE students at all levels.
- To develop innovative methodologies, based on the use of gamification that will integrate skills and knowledge on SD and SDGs, to empower HE teachers and encourage HE students to learn by doing.
- To promote the organisational improvement of seven institutions and strengthen the collaborative partnership between them through the development, dissemination, and exploitation of innovative tools and methodologies created in the field of SD/SDG for HE.

Work packages

Time2act@SD will be implemented through five work packages (WPs):

- WP1 – Project Management;
- WP2 – Transnational studies with HE students and teachers;
- WP3 – Development of interactive content and digital/innovative tools;
- WP4 – SD/SDG training Workshops and Bootcamps;
- WP5 – Strengthening the cooperation partnership & dissemination and exploitation of the project's results.

Project financing

The project Time2act@SD is funded by the Erasmus+ KA220-HED – Cooperation Partnerships in Higher Education with a value of 250000 Euros.

Project partners

The Time2Act@SD project is coordinated by the Instituto Politécnico de Santarém in Portugal, with the following partners:

- UCLAN Cyprus (Cyprus)
- Thomas More Mechelen-Antwerpen (Belgium)
- Learnmera Oy (Finland)
- Galileo.it (Italy)
- Rosto Solidário – Associação de Desenvolvimento Social e Humano (Portugal)
- Gazi University (Türkiey).

Project duration: The Time2Act@SD project will run for 36 months.

Project website: https://time2act.ipsantarem.pt/

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— Project 2:
INT4FURN: Enhancing internationalisation capabilities of micro-SMEs in furniture sector through ECVET compliant innovative training course

(Project ID: 2022-1-TR01-KA220-VET000089008)

Susana Leal[1,2], Ana Loureiro[3], João Nascimento[1], Sandra Oliveira[1,2]

[1] School of Management and Technology of Santarém – Polytechnic Institute of Santarém

[2] Life Quality Research Centre

[3] School of Education of Santarém – Polytechnic Institute of Santarém

The INT4FURN project aims to promote entrepreneurship among micro-SMEs and young people, thus creating high-quality employment and internationalisation opportunities. The internationalisation training course will be designed to provide micro-SMEs and young micro-entrepreneurs in the furniture sector with basic business skills and digital business opportunities in an international environment to develop their business by using a self-assessment tool through Digital Learning Hub.

Main objectives

The main objectives of the INT4FURN project are to:

- support participating micro-SMEs in VET and further training activities in the acquisition and the use of knowledge, skills, and qualifications related to internationalisation in the furniture sector.
- develop an ECVET-compliant dedicated internationalisation course including curriculum, training content, and materials that will allow the target groups to learn (remotely) at their location.
- develop an innovative self-assessment tool to measure the readiness to enter global markets and identify required competencies.

- support the curriculum and course with instructive, engaging training videos and training materials hosted on the Digital Internationalisation Learning Hub.
- develop innovative online and mobile ICT-based tools to support the training course.
- improve cooperation between institutions and enterprises.
- reduce the risk of failure for micro-SMEs in the furniture sector when entering international markets.
- To raise the awareness of micro-SMEs and young people about entering new markets and trading in an international environment.

Work packages

The work necessary to achieve the objectives of the INT4FURN project is divided into five work packages which were planned and will be implemented.

- Work package 1: Project Management
- Work package 2: ECVET compliant Internationalisation Training course for inclusion in VET entrepreneurship training
- Work package 3: Creation of Self-Assessment Tool for learners
- Work package 4: Digital Internationalisation Leaning Hub
- Work package 5: Dissemination and exploitation.

Project financing

The project INT4FURN is funded by the Erasmus+ KA220 – Cooperation partnerships in vocational education and training – with a value of 250000 Euros.

Project partners

The INT4FURN project is coordinated by the Gazi University in Türkiey (Prof. Alper Güzel), with the following partners:

- Instituto Politécnico de Santarém (Portugal)
- International Labour Association: ILA (Netherlands)
- Ankara Ticaret ODASI (Türkiey)
- Huemaniser OÜ (Estonia)
- Institute of Entrepreneurship Development (Greece)
- Instituto Ikigai, Asociación Española para el Emprendimiento y el Desarrollo Personal y Profesional (Spain).

Project duration: The INT4FURN project will run for 24 months.

04

PUBLICATIONS

Frontini, R., & Carneiro, L. (2023). Importância dos fatores psicológicos no apoio ao rendimento. In F. M. Clemente (Ed.). *Treinar para render*. Um Guia Completo de Metodologia do Treino e Estratégias Complementares para os Desportos Coletivos. PrimeBooks. ISBN 978-989-655-507-8.

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05

R&D ACTIVITIES

- **Invitation for publication in International Journal of Environmental Research and Public Health (IJERPH)**

The researcher Prof. Dr. Nuno Loureiro, Prof. Dr. Rafael Oliveira and Prof. Dr. Fernando Santos are the guest editors of a special issue with the topic: *Football Related Injury and Health Problems*. Deadline for manuscript submissions: 20 April 2023. More information **SEE MORE**.

- **Invitation for publication in International Journal of Environmental Research and Public Health (IJERPH)**

The researcher Prof. Dr. João Brito with researcher Prof. Dr. Rafael Oliveira are the guest editors of a special issue with the topic: *Wellness, Fitness, Body Composition, Training and Performance Monitoring to Improve Athletes Life Quality*. Deadline for manuscript submissions: 23 April 2023. More information **SEE MORE**.

- **Invitation for publication in International Journal of Environmental Research and Public Health (IJERPH)**

The researcher Prof. Dr. João Brito with researcher Prof. Dr. Rafael Oliveira are the guest editors of a special issue with the topic: *Exercise Monitoring, Testing and Prescription Strategies to Improve Quality of Life in Athletes and Non-athletes*. Deadline for manuscript submissions: 31 May 2023. More information **SEE MORE**.

- **Invitation for publication in the journal of Education Sciences:**

The researcher Prof. Dr. Susana Franco with researcher Prof. Dr. Vera Simões are the guest editors of a special issue with the topic: *Contemporary Research in Sport, Physical Activity, and Physical Education*. Deadline for manuscript submissions: 1 July 2023. For more information **SEE MORE**.

- **Invitation for publication in Behavioral Sciences journal**

The researcher Prof. Dr. Filipe Rodrigues, Prof. Dr. Diogo Monteiro and Prof. Dr. Raul Antunes are the guest editors of a special issue with the topic: *Current Opinion in Sport Psychology*. Deadline for manuscript submissions: 30 September 2023. For more information **SEE MORE**.

- **Invitation for publication in Healthcare journal**

The researcher Prof. Dr. João Brito with researcher Prof. Dr. Rafael Oliveira are the guest editors of a special issue with the topic: *Exercise Testing and Prescription Strategies to Improve Quality of Life*. Deadline for manuscript submissions: 23 October 2023. More information **SEE MORE**.

- **Invitation for publication in Healthcare journal**

The researcher Prof. Dr. Rafael Oliveira is the guest editor of a special issue with the topic: *Supporting Athlete Development: The Role of Supporting Structures*. Deadline for manuscript submissions: 31 December 2023. More information **SEE MORE**.

- **Ph.D. degree**

Researcher Prof. Mauro Miguel defended his doctoral thesis on March 24, entitled: *"Control de la Carga del Entrenamiento y Competición en el Fútbol Aficionado: La Evaluación del Periodo Competitivo"*. Congratulations Prof. Dr. Mauro Miguel!

- **Ph.D. degree**

Researcher Prof. Pedro Sobreiro defended his second doctoral thesis, entitled: “Customer dropout prediction using machine learning hybrid survival models”. Congratulations Prof. Dr. Pedro Sobreiro!

- **I&D Projects in the scientific areas of LQRC-CIEQV**

For more information **SEE MORE**.

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CALLS AND FUNDING

- Calls for support to *Turismo,* START-PME. Status: open. More information **SEE MORE**.
- Calls for support to *Programa de Desenvolvimento Rural,* START-PME. Status: in preparation. More information **SEE MORE**.
- Calls for support to *Plano de Recuperação e Resiliência*, START-PME. Status: open. More information **SEE MORE**.
- Calls for support to *Programa ATIVAR.PT,* START-PME. Status: open. More information **SEE MORE**.
- Calls for support to *Apoio à Produção Nacional*, START-PME. Status: open. Deadline: to be defined. More information **SEE MORE**.
- Calls for support to *Programa de Incentivo para os Açores*, START-PME. Status: in preparation. More information **SEE MORE**.
- Calls for support to *Apoios à contratação – IEFP*, START-PME. Status: open. More information **SEE MORE**.
- Become an EFSA expert. Deadline: 3 April 2023. More information **SEE MORE**.
- Advanced Computing Projects Contest (3rd ed.): A0 Experimental Access (lot C). Deadline: 4 April 2023. More information **SEE MORE**.
- Advanced Computing Projects Contest (3rd ed.): A1 Preparatory Access or Development (lot C). Deadline: 4 April 2023. More information **SEE MORE**.
- BiodivMon – 2nd European Biodiverse Partnership Competition+. Deadline: 5 April 2023. More information **SEE MORE**.
- Biodiversa+ Transnational Calls. Deadline: 5 April 2023. More information **SEE MORE**.
- European Digital Skills Awards. Deadline: 8 April 2023. More information **SEE MORE**.
- Eureka – Innovation beyond borders. Deadline: 13 April 2023. More information **SEE MORE**.
- *Plano Nacional Energia e Clima 2030* (PNEC 2030). Deadline: 14 April 2023. More information **SEE MORE**.
- Sustainable Blue Economy Partnership (SBEP): 1st Joint Transnational Competition. Deadline: 14 April 2023. More information **SEE MORE**.
- The 13th Edition of the Summer School on Nuclear Decommissioning and Waste Management. Deadline: 16 April 2023. For more information **SEE MORE**.

- Calls for proposals – Promotion of agricultural products. Deadline: 20 April 2023. More information **SEE MORE**.
- SNS Call for Proposals 2023 – Information Day. Deadline: 25 April 2023. More information **SEE MORE**.
- Parceria 'Smart Networks and Services' JU. Deadline: 25 April 2023. More information **SEE MORE**.
- Seedbed Incubator. Deadline: 26 April 2023. More information **SEE MORE**.
- ACADEMIA GRACE – *Concurso sobre Sustentabilidade e Responsabilidade Social*. Deadline: 28 April 2023. More information **SEE MORE**.
- The European Media and Information Fund (EMIF) opened three calls for proposals for projects in Europe aiming to fight disinformation. Deadline: 28 April 2023. More information **SEE MORE**.
- Call: European green leaf award. Deadline: 30 April 2023. More information **SEE MORE**.
- Training and Capacity Building at JRC Laboratories. Deadline: 30 April 2023. More information **SEE MORE**.
- Key Digital Technologies JU opens 3 concurrent Calls in 2023. Deadline: 3 May 2023. More information **SEE MORE**.
- European Driving Urban Transitions Partnership (DUT) 2022 Competition. Deadline: 3 May 2023. More information **SEE MORE**.
- 6th edition of the Arquivo.pt. Deadline: 4 May 2023. More information **SEE MORE**.
- PRIMA WEFE Nexus Award 2023. Deadline: 22 May 2023. More information **SEE MORE**.
- Public Administration Award. Deadline: 31 May 2023. More information **SEE MORE**.
- Healthcare of the future – THCS European Partnership Competition, Deadline: 13 June 2023. More information **SEE MORE**.
- *Programa Cidadãos Ativ@s* – Bilateral Cooperation Initiatives of the *Fundação Bissaya Barreto* and *Fundação Calouste Gulbenkian*. Deadline: 30 June 2023. More information **SEE MORE**.
- European Commission – Competitive calls and calls for third parties. Areas of interest: Food; Energy Transition; Climate; Mobility; Digitization. Deadline: 22 July 2023. More information **SEE MORE**.
- Sustainable Blue Economy Partnership (SBEP): 1st Joint Transnational Competition. Deadline: 13 September 2023. More information **SEE MORE**.
- Marie Skłodowska-Curie Actions (MSCA) Postdoctoral Fellowships 2023. Deadline: 13 September 2023. More information **SEE MORE**.
- EIC Accelerator – Challenges 2023. Deadline: 4 October 2023. More information **SEE MORE**.
- Call Hop On 2023. Deadline: 4 October 2023. More information **SEE MORE**.

- Funding networking activities – Open call. Deadline: 25 October 2023. More information **SEE MORE**.
- Diseases 2023 Best PhD Thesis Award. Deadline: 31 October 2023. More information **SEE MORE**.
- HORIZON-EURATOM-2023-NRT-01. Deadline: 8 November 2023. More information **SEE MORE**.

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AGENDA

- **Young L2 learners and Games Conference,** 31 March – 1 April 2023, online. More information **SEE MORE**.
- **XII Congresso Português de Sociologia – Sociedades polarizadas? Desafios para a sociologia.** 4-6 April 2023, Convento de São Francisco, Faculty of Economics, University of Coimbra. More information **SEE MORE**.
- **Special Issue Launch | Reflecting on Freire: A praxis of radical love and critical hope for science education**, 20 April 2023, University of Leeds. More information **SEE MORE**.
- **[save the date] XPERIMENTA 2023**, 26-28 April 2023, University of Aveiro, Portugal. More information **SEE MORE**.
- **10º Congresso da Sociedade Científica de Pedagogia do Desporto**, 27-28 April 2023, Polytechnic of Porto, Portugal. More information **SEE MORE**.
- **3rd International Conference on Water, Energy, Food and Sustainability – ICoWEFS 2023,** 13-12 May 2023, Leiria, Portugal. More information **SEE MORE**.
- **CBE JU Info Day 2023,** 20 April 2023, online. More information **SEE MORE**.
- **MedSport Crposs Talks**, 27-28 April 2023, Porto Portugal. More information **SEE MORE**.
- **SALP | *Seminário Aconselhamento no Luto em Portugal***, 5 May 2023, University of Aveiro, Portugal. More information **SEE MORE**.
- **Congresso Internacional *"Desporto para Crianças e Jovens"* – PortugalFootball School,** 5-6 May 2023, presencial. More information **SEE MORE**.
- **Chapter 4 – Conference on Food Science, Nutrition & Public Health (FNPH-2023)**, 8-9 May 2023, online. More information **SEE MORE**.
- **Workshop the Future of Energy Materials,** 13-14 May 2023, online. More information **SEE MORE**.
- **IV Simpósio de Economia e Gestão da Lusofonia**, 16-18 May 2023, Kimpa Vita University, Angola. More information **SEE MORE**.
- **Biennale des doctorants,** 30 May 2023. More information **SEE MORE**.
- **European Conference on Networks and Communications & 6G Summit 2023,** 6-9 June 2023, Sweden. More information **SEE MORE**.
- **European Youth Event,** 9-11 June 2023. More information **SEE MORE**.

- **EuroNanoForum Save the date,** 11-13 June 2023, Sweden. More information **SEE MORE**.
- **ICNF2023,** 19-21 June 2023, Funchal, Portugal. More information **SEE MORE**.
- **II *Conferência de Ciência de Dados para as Ciências Sociais*,** 19-23 June 2023, Manaus and Itacoatiara, Amazonas, Brazil. More information **SEE MORE**.
- **WEd5.0 2023 – 1st Workshop on Education 5.0,** 20-23 June 2023, University of Aveiro, Portugal. More information **SEE MORE**.
- **9th International Conference of the Immersive Learning Research Network**, 18-20 May 2023 (online) and 26-29 June 2023, San Luis Obispo, California, USA. More information **SEE MORE**.
- **10th International Conference of EDiLiC | From Early Childhood to Adulthood: Transitions, Continuity, and Disruptions in Plurilingual Education,** 28-30 June 2023, University of Copenhagen, Denmark. More information **SEE MORE**.
- ***V Congresso Nacional de Educação para a Saúde,*** 31 May 2023 and 1-2 June 2023, Évora University. More information **SEE MORE**.
- **European Conference on Networks and Communications & 6G Summit 2023,** 6-9 June 2023, Barcelona, Spain. More information **SEE MORE**.
- **EuroNanoForum Save the date,** 11-13 June 2023, Sweden. More information **SEE MORE**.
- **Data meets Infrastructure at the Edge,** 13-15 June 2023, Sweden. More information **SEE MORE**.
- **6th International Conference on Natural Fibers,** 19-21 June 2023, Funchal, Portugal. More information **SEE MORE**.
- **9th International Conference of the Immersive Learning Research Network**, 18-20 May 2023, online (iLRN Virtual Campus & Across the Metaverse), 26-29 June 2023, San Luis Obispo, California, EUA. More information **SEE MORE**.
- ***V Congresso Nacional de Educação para a Saúde***, 31 May, 1-2 June 2023, Évora. More information **SEE MORE**.
- **EYE (European Youth Event),** 9-11 June 2023, Strasbourg. More information **SEE MORE**.
- **9th International Conference on Higher Education Advances,** 19-22 June 2023, Valencia, Spain. More information **SEE MORE**.
- **WEd5.0 2023 – 1st Workshop on Education 5.0,** 20-23 June 2023, University of Aveiro, Portugal. More information **SEE MORE**.
- **ESREA Life History and Biography Network meeting 2023 | Exploring belonging and meaning: Lifescapes – Landscapes – Timescapes,** 22-25 June 2023, Trondheim. More information **SEE MORE**.

- **International Conference "The Lusophone World and its Diasporas",** 28 June – 1 July 2023. York University Toronto, Canada. More information **SEE MORE**.
- **EERA Summer School 2023 – Participatory approaches in educational research**, 26-30 June 2023, Faculty of Psychology and Education Sciences of the University of Porto. More information **SEE MORE**.
- **6º Colóquio Internacional de L'ARCD**, 27-30 June 2023, Switzerland. More information **SEE MORE**.
- **10th International Conference of EDiLiC – From Early Childhood to Adulthood: Transitions, Continuity and Disruptions in Plurilingual Education**, 28-30 June 2023 University of Copenhagen, Denmark. More information **SEE MORE**.
- **ISATT Conference 2023 – Living and Leading in the Next Era: Connecting Teaching, Research, Citizenship and Equity**, 3-7 July 2023, Bari, Italy. More information **SEE MORE**.
- **AIESEP International Conference.** 4-7 July 2023, Santiago, Chile. More information **SEE MORE**.
- **CIAIQ2023 | 12º Congresso Ibero-Americano em Investigação Qualitativa**, 11-13 July 2023, hybrid. More information **SEE MORE**.
- **44th International Conference of the Stress, Trauma, Anxiety, and Resilience Society (STAR)**, 19-21 July 2023, hybrid. More information **SEE MORE**.
- **SMBE2023 – Science for everybody: education and outreach in molecular biology and evolution,** 23-27 July 2023, Ferrara, Italy. More information **SEE MORE**.
- **II Encontro Nacional de História da Química | Múltiplas facetas na história da ciência química**, 8-9 September 2023, online. More information **SEE MORE**.
- **14ª Conferência Lusófona de Ciência Aberta (ConfOA)**, 18-21 September 2023, Federal University of Rio Grande do Norte, in Natal, Brazil. More information **SEE MORE**.
- **5th EMCEI**, 2-5 October 2023, Rende (Cosenza), Italy. More information **SEE MORE**.
- **11th ICESD International Congress of Educational Sciences and Development**, 18-20 October 2023. More information **SEE MORE**.
- **VI Simpósio Europeu de Português como Língua de Herança (VI SEPOLH) | Português como Língua de Herança: da Gestão à Formação,** 23-25 October 2023, University of Aveiro, Portugal. More information **SEE MORE**.
- **IUFRO Forest Environment DIV8 Conference 2023,** 24-27 October 2023, Évora, Portugal. More information **SEE MORE**.
- **13th International Conference on Health and Social Care ICT (HCist 2023)**, 8-10 November, Porto, Portugal. More information **SEE MORE**.

- **27as Jornadas de Endocrinologia e Diabetes de Coimbra,** 10-11 November 2023, Coimbra, Portugal. More information **SEE MORE**.
- **ICCE Global Coach Conference**, 29 November – 3 December 2023, Singapore, Singapore. More information **SEE MORE**.