

H2020 SOCIETAL CHALLENGES

Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy

The Industrial Problem

Analysis, design and implementation of adequate statistical methodology to respond to the improvement requirements of the ICT (Information and Communication Technologies) tool developed by the iAuditoria company in the performing of audits and / or inspections.

Research group



Instituto
Tecnológico
de Matemática
Industrial



Center for technological research in the field on Industrial Mathematics: Modelling, Simulation, Optimization & Big Data (MSO & Big Data).

Company

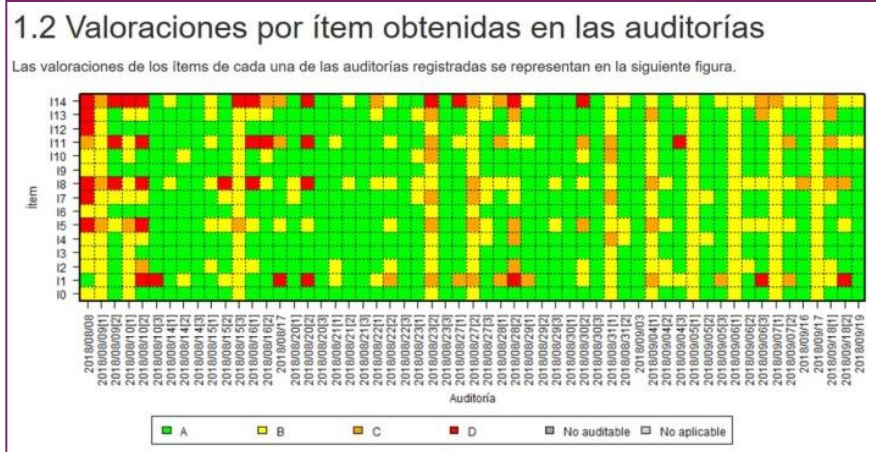


iAuditoria

iAuditoria, it is a company whose main activity is computer consulting.

Challenges & Goals

- Through the use of predictive models, value is added to the ICT tool, making it more attractive for potential iAuditoria clients.
- The iAuditoria's clients will be able to obtain statistical results on which to support their decision-making, based on their own history data or information from similar clients.

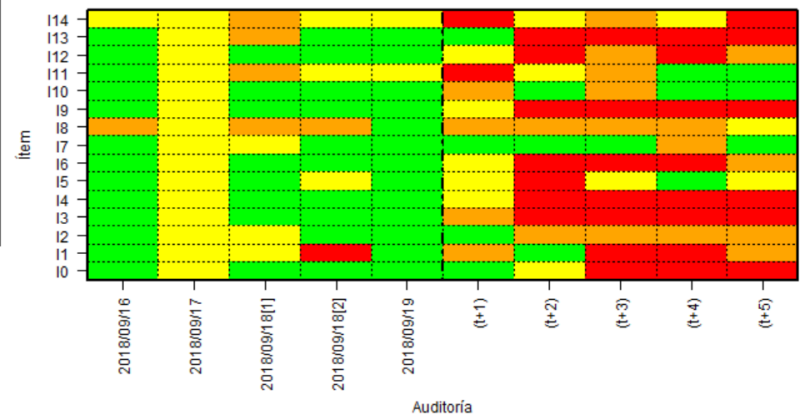
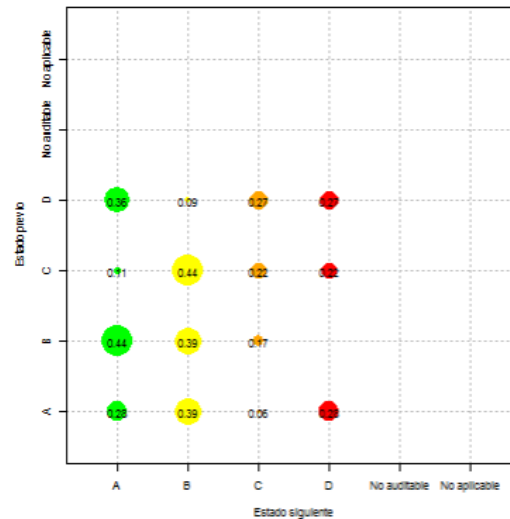


Valuations of the items (by row) of each recorded audit (by column)

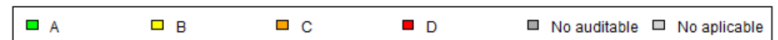
This project was co-funded by GAIN and IGAPE in the framework of IFI INNOVA call.

Mathematical and computational methods and techniques applied

- Use of **Predictive models**, to predict response variables from observations: **univariate** and **multivariate Markov chains**.

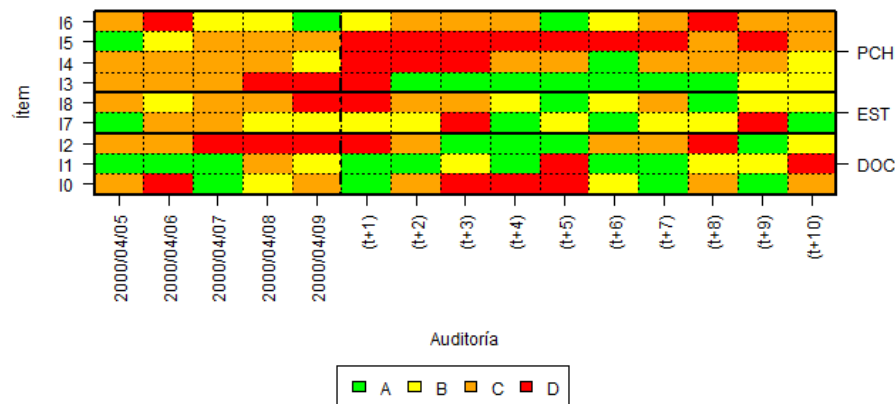


Estimated transition matrix from different audit results for a certain item (left). Results of valuations by recorded audits (right)



Results & Benefits to the Company

- Increase the efficiency and improvement of the ICT tool.
- Once an inspection and / or audit has been carried out, the application allows the generation of reports that, in addition to multimedia content, can include statistical results that allow iAuditoria clients to detect opportunities of improvement and anticipate possible risk situations.
- In general, the results provided by these reports have been improved, which facilitates decision-making in the companies and client organizations of iAuditoria.
- Value is added to the ICT tool, making it more attractive to potential iAuditoria clients.



Valuations of the items (by row, grouped by blocks) of each recorded audit (by column). (t+x) times indicate predicted outputs, based on all the historical information available

Improve the efficiency of the ICT tool for inspections and / or audits, which facilitates decision making

