KNOW-HOW IN MASSIVE PROCESSING OF SOCIO-ECONOMIC AND BUSINESS DATA

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RESUMEN

A team of researchers from the **Accounting and Finance Research Group** has developed a series of programmes for import and massive processing of socio-economic and business data.

This know-how allows the elaboration of reports on the business company of any geographical area and sector of activity and, in general, any type of socio-economic data.

We are looking for a business partnership, town councils or other public or private organisations interested in this type of studies.



INTRODUCCIÓN

The degree of digitisation of information in today's society has developed at breakneck speed and, in many cases, it has exceeded the processing capacity available to the entities responsible for its management.

There are many public and private organisations that have huge amounts of data that are not being exploited to extract useful information from them, so the University of Alicante offers its knowledge in the **massive processing of socio-economic and business data**, as well as its experience in **analysis and interpretation to provide valuable information** to any public or private institution.

For example, the massive processing of the information in the annual accounts acquires a complexity that is practically unmanageable without the appropriate technical and economic resources.

a) On the one hand, having this data available without a programme that manages it in an automated way implies a great deal of work that discourages town councils, business groups and other types of public and private institutions from considering this type of study, which would improve their economic management by gaining first-hand knowledge of the situation of the companies operating in their area of action.

b) On the other hand, although the annual accounts of companies can be obtained directly from the Mercantile Registries, it is essential to resort to databases marketed by companies that compile and systematise this information for downloading via computer files. The limitation, in this case, comes from the high cost involved in acquiring this type of database. However, given that these databases are available at the University of Alicante for teaching and research purposes, the possibility of using them for transfer issues would allow society to benefit from studies and reports such as those proposed by this research team.

The combination provided by the resources of the University of Alicante and the software developments of the research team of the Accounting and Finance Research Group allows, at this moment, the **personalised elaboration of all types of reports on companies** based in any geographical area, with activity in any sector or belonging to any group. In this way, for example, local councils could analyse how companies based in their municipality have evolved in response to the implementation of municipal measures, or how their solvency, liquidity, profitability, turnover or number of employees have been affected by external events such as the Covid-19 pandemic.

Therefore, If it is desired to extract or summarise the information contained in large datasets, the collaboration offered would allow the **development of tailor-made works** so that each entity could **improve its services through a more precise knowledge** of

what it is happening under its sphere of influence.

DESCRIPCIÓN TÉCNICA

The programmes developed by the research team are based on the R free software language. The origin of the programmes lies in the research work for scientific journals with a high degree of demand in the handling and statistical treatment of the information. These publications required the acquisition of a series of skills and knowledge that were later applied to teaching and the management of final degree projects until, at present, programmes able of reading and systematising information from thousands of different files to **facilitate its processing and conversion into useful information for decision-making**.

The main utilities that can be developed on the basis of this available software are:

1. **Simultaneous downloading** of thousands of annual accounts deposited in the Mercantile Registries with **automated reading** of the downloaded spreadsheets, and systematisation in an R-Data dataset.
2. Organisation, aggregation and systematisation of several datasets with **unified output in the formats desired** by each entity.
3. **Automated quality check** of the systematised information by cross-checking data and analysing internal consistency.
4. **Automated descriptive statistics** of the variables that are of interest to each organisation.
5. **Semi-automated report** generation (profiled according to the requesting organisation).

Based on the output generated by the software developed, an **economic-financial analysis of the situation of the companies involved** can be carried out, or a **statistical report on any set of socio-economic data** that each city council or organisation requires according to its objectives and needs.

VENTAJAS Y ASPECTOS INNOVADORES

ADVANTAGES OF THE TECHNOLOGY

The main advantages of this type of report for public or private institutions are the following:

- **Cost savings** with respect to in-house development.
- **Time savings** (due to the data processing capacity once the information is available in the databases).
- **Improved efficiency in municipal, provincial or wherever appropriate management** due to the detailed knowledge of the situation.
- **Improved general knowledge about the data of interest** by members of clusters or population of a municipality.
- Possibility to **measure the impact of measures and events** on important magnitudes in the management of the municipality or any organisation.

INNOVATIVE ASPECTS OF THE TECHNOLOGY

The main innovation contributed by the software developed is the fact that it opens up the possibility of **accessing this type of report** for local councils or private entities of any size in a **simple and fast way**.

ESTADO ACTUAL

The software is in its final stage of development. Demonstration reports with anonymised data can be **generated in less than a month**.

The available developments, together with the experience of the research team, constitute only a basis on which to customise and adapt each report or study to the needs of each requesting entity. These are not standardised reports, but rather a know-how that can have an **infinite number of applications** for many entities or institutions.

APLICACIONES DE LA OFERTA

Reports that can be produced on the basis of the software developed can be applied in **any sector of activity**, as well as being extensible to **any database** in order to systematise it and extract useful information from it.

COLABORACIÓN BUSCADA

Technical assistance agreements are sought with public and private organisations interested in this type of reports.

DERECHOS DE PROPIEDAD INTELECTUAL

The developed software and know-how belong to the University of Alicante and is available for the development of the reports.

PERFIL DEL GRUPO DE INVESTIGACIÓN

The research team has more than twenty years of experience, having carried out a multitude of academic works as well as important projects for companies and other institutions. This guarantees extensive experience and excellence in the massive processing of data, as well as in its analysis, interpretation and application.

SECTORES DE APLICACIÓN (1)

Economic Studies