The use of data mining to influence social entrepreneurship and territorial dynamics.

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Abstract.

The digitalization of the economy is a trendy phenomenon that is transforming the micro and macro-economy, evolving at a record pace and directly impacting the performance and social entrepreneurship of organizations in various sectors around the world. Organizations must therefore face vast waves of data to follow the news and facilitate territorial intelligence. This world of data is defined by the collective name of data mining, the processing of which is usually carried out by artificial intelligence technology. Entrepreneurship creates spaces of solidarity, mutual aid and coalition between social groups suffering from poverty, precariousness and even precariousness, with the aim of ensuring equitable distribution for the benefit of all. In this context, Morocco has embarked on structural changes, strengthened its modern and competitive economy, facilitated the creation of growth and encouraged entrepreneurship, and has committed itself to national commitments to territorial development.
To get a broader and clearer idea of the impact of data mining and economic intelligence on territorial intelligence and social entrepreneurship, we seek to answer the following questions: How does social entrepreneurship promote territorial dynamics through artificial intelligence, particularly in the Fez-Meknes region?

Keywords: Data Mining, economic intelligence, social entrepreneurship, smart territories, Territorial dynamics, Artificial intelligence, Big Data.

1 Introduction

Over the decades, entrepreneurship has established itself as an unavoidable modern phenomenon. It is the main driver of growth, restructuring, structural development, innovation and job creation. Entrepreneurship represents a space of solidarity, mutual aid and coalition of social groups suffering from poverty, precariousness, with the aim of ensuring an equitable distribution for the benefit of all citizens, dignity fighting for values such as, profit, and power in all regions of the kingdom.
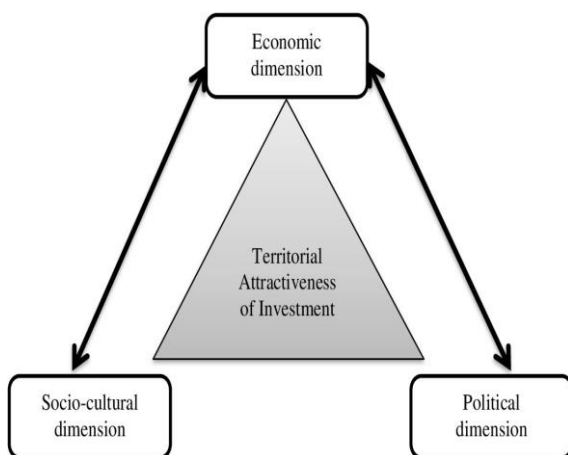
In this context, Morocco has embarked on structural changes, strengthened its modern and competitive economy, facilitated the creation of growth and encouraged entrepreneurship, and has committed itself to national commitments in favour of linked territorial development.

Social entrepreneurship acts as a catalyst. Source and destination, and this triggers the dynamics of the territory.

To simplify the study, we have formulated the following problem. By what means does social entrepreneurship promote regional dynamics, particularly in the Fez-Meknes region and what impact will the integration of datamining have on solving this problem?

Since then, we have understood the interest and effectiveness of establishing a business intelligence strategy based on data mining to ensure consistency in data processing and pursue the trajectory of improving territorial intelligence.

This article first presents the specific literature on the subject, then questions the sustainability of the introduction of data mining to improve regional intelligence through social entrepreneurship, and links it to the Fez-Meknes region subject to the results

2 Methods

Interest in territorial information is increasingly reflected in the promotion and strengthening of social entrepreneurship. Morocco had implemented important reforms to reduce territorial and social disparities, diversify its economy and encourage investment and human development in order to achieve economically and socially productive territorial development. However, this should be complemented by the use of technology that uses data mining and business intelligence to properly process big data. This section lists the material we need to prepare our article before proceeding with data processing in the next section. Therefore, we address social entrepreneurship by leveraging the following four elements: business intelligence, big data, data mining and territorial intelligence.

3 BUSSINESS INTELLIGENCE

Business Intelligence (BI), also known as "business intelligence" or "business intelligence", includes IT solutions including end-of-line reports and dashboards that provide decision support to experts and enable analytical and prospective monitoring of the activity [1].

The idea emerged in the late 1970s with the emergence of the first information centers. A system that sends requests directly to a production server. This proved to be very dangerous for the latter. In the 1980s, the advent of relational databases and client/server separated the processing of production data from the decision engine. In the years that followed, players

began to define a "business" analysis layer with the aim of obscuring the complexity of data structures. Since the 1990s and 2000s, decision support platforms have revolved around data warehouses (or data warehouses) to integrate and organize information (by extraction, transfer and integration, or ETL). Objective: Streamline the response to requests for reporting tools and dashboards with downstream indicators provided to operations managers [2].

Fig.1. Business Intelligence component for the enterprise

Business intelligence is the technological process of analyzing data to provide actionable insights to executives, business leaders, and other users so they can make more informed decisions.[3]

Business intelligence includes a variety of tools, applications, and methods that enable organizations to collect data from internal systems and external sources, prepare it for analysis, develop queries, and apply that data. From there, various views and visualization modes such as reports and dashboards are created to make the analysis available to decision makers and business stakeholders [4].

BI data can include both historical information and new data captured during the generation of the source system. BI analytics can therefore support strategic and tactical decision-making processes. Originally, BI tools were primarily used by IT professionals, especially data analysts [5].

They performed analysis and created reports on query results for business users. Today, with the development of self-service datamining and BI tools [6], management and operational teams are increasingly using BI software. The information environment is becoming more complex and more and more data is flowing rapidly. BI tools help you integrate real-time information to draw the right conclusions and capitalize on business opportunities. The information collected is accurate and reliable. Track business-related metrics. Simplified graphical displays make it easy to read information, whether it's short-term business data or forecasts.[7]

Business Intelligence suffers from a real lack of knowledge, practice and communication around the world [8]. And if you don't know the field well, how do you understand it before you even put it into practice?

BI has traditionally focused on accounting issues (consolidation and budgeting), but over time, BI has expanded to cover all major business areas, from customer relationship management to supply chain management to human resources. Professional publishers have

defined ready-to-use libraries of indicators to track these different activities. Finally, the emergence of new web technologies (HTML5, JavaScript graphical interfaces, AJAX, etc.) has also led to the emergence of new players offering BI approaches in cloud or SaaS mode[9].

Business intelligence (BI) is increasingly used by business leaders. This area of data science can help us make the right decisions in areas related to business operations to increase sales.[10] BI is based on the collection, processing, analysis and modeling of data collected by a company. Its purpose is to obtain relevant information so that management can make the right decisions [11]. BI is generally divided into three phases: periodic data extraction, data restructuring to present relevant information, data modeling, semantic data design, and expert data analysis.

4 BIG DATA

"Big data" is a collective term for the strategies and technologies used to collect, organize, process, and analyze large amounts of data. Big data is the art of managing and using large amounts of data. This section presents the definition of big data, its main use cases, and its basic concepts [12]. Before defining big data or big data, it's important to understand what data is. This term defines a set, character, or symbol on which a computer performs operations. Data is stored or transmitted in the form of electrical signals and recorded on mechanical, optical or magnetic media [13]. The term "big data" refers to large amounts of data collected by companies that can be leveraged and analyzed to generate actionable insights or used for machine learning projects. Big data is often defined by the "3Vs" that characterize it: volume and variety of data, speed of generation, collection and processing. This is the difference between "big data" and traditional data [14].
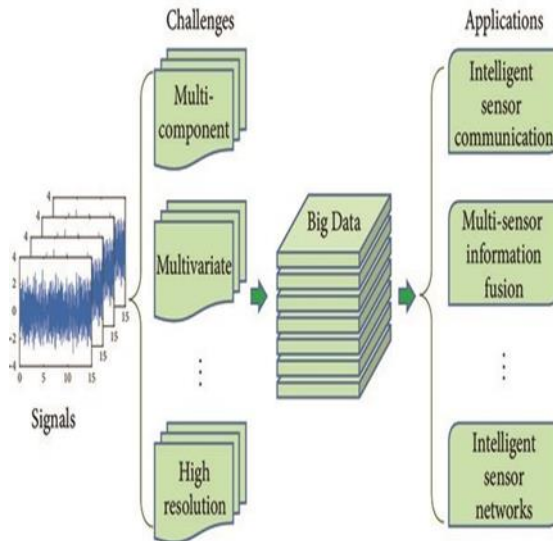

Fig.2. Data Mining components

Thanks to big data, companies can gain a competitive advantage over their competitors who do not use data. They can make faster, more accurate decisions based directly on information.

5 DATA MINING

Data mining is the process of analyzing large amounts of data or big data from different angles to identify relationships between data and turn them into actionable insights. This

system is part of business intelligence, designed to help companies solve problems, reduce risk, and identify and seize new business opportunities [15]. Data mining is an inseparable process of big data analysis, predictive intelligence, and data mining. Data mining is not a new concept. Already in the 17th century, people were looking for ways to analyze data to identify common features. One of the first vestiges of the concept of data mining dates back to 1936. That year, the British mathematician and cryptographer Alan Turing proposed the idea of a machine capable of performing calculations similar to those of modern computers [16]. Turing's research is part of the foundations of programming and computer science.

A variety of statistical data analysis techniques allow users to see patterns, trends, and relationships that were not apparent initially. Using the results of various sequential analyses, we can predict what will happen and take action to influence and maximize business outcomes. Effective use of data mining can give companies a significant advantage over their competitors. It helps to better understand customers, develop effective marketing strategies, increase sales and reduce costs. The use of data mining in the enterprise requires knowledge of many concepts, tools and techniques centered on this idea:

Data cleansing and preparation: This is the data transformation phase for analysis and operational processing. For example, eliminating errors or identifying missing information.

- Artificial intelligence (AI): Systems that mimic human thinking to perform analytical activities, such as learning, reasoning, and problem solving.

- Association rules learned: These are tools for finding relationships between variables in a data set. This allows companies to identify products that customers typically buy together.

- Grouping: This is the process of dividing a dataset into clusters (subsets) to allow the user to understand the grouping of previously unknown data and facts.

- Classification: This technique is used to classify or categorize information in a data set in order to make predictions.

- Data analysis: The act of evaluating digital information and using it wisely.

- Data warehousing: literally storing data to help organizations make the best decisions. This is an integral part of large-scale data mining.

- Machine learning: This is a computer programming technique that uses statistical probabilities to give computers the ability to "learn". Machine learning and artificial intelligence are two related concepts.

Therefore, we can say that it is not enough to store large amounts of data in special databases, data warehouses or big data, we must use them. This is the role of data mining, and if used correctly, it can learn from large amounts of data that statistical tools alone cannot satisfy. Let's look at the principles, methods and tools used, and concrete examples that highlight the importance of data quality.

6 SOCIAL ENTREPRENEURSHIP AT THE SERVICE OF TERRITORIAL INTELLIGENCE

A social entrepreneur is simply a founder of a social enterprise. Unlike entrepreneurs, the main goal of social entrepreneurs is not to make a profit, but to contribute positively to society. Since its emergence in the 1990s, the concept of social entrepreneurship has continued to evolve and is characterized above all by a desire to prioritize economic performance according to criteria of general interest. Profit is no longer the end goal of a company, but a means to achieve broader goals that put society, society and the environment

first. As such, they are a natural synthesis of the principles of CSR and sustainable development and can also be the subject of specific approaches by companies in traditional economies. Unlike traditional businesses, social enterprises are not profit-driven. Their main objective is to carry out projects with high social benefits, for example, when it is necessary to carry out projects that are economically unfeasible but highly beneficial for society and the environment. Social enterprise projects cover topics such as professional integration, disability assistance, sustainable development, organic farming, circular economy and mobility support. Social entrepreneurship creates social or environmental value within traditional businesses. This facilitates new management approaches such as partnership agreements and financial donations, particularly related to corporate social responsibility (CSR). This makes it possible to recover a significant part of their contributions for social purposes. And as consumers become more and more sensitive to goods and services that correspond to certain values, the social and solidarity economy will tomorrow be an integral part of everyday life. Social entrepreneurship is the act of entrepreneurs who find innovative solutions to social problems.
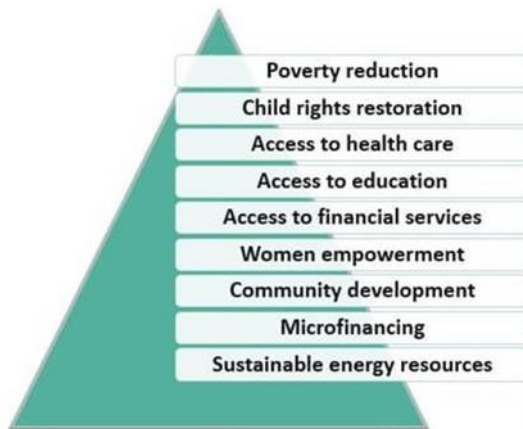

Fig.3. Target areas of social entrepreneurship

The term is used to describe any social economy enterprise or non-profit organization with a strong social mission. Social entrepreneurship emerged in the United States in the 1980s and in Europe in the 1990s. So it's not new, but like any novelty it took time to develop and make itself known. Over the years, we have witnessed the emergence of a new entrepreneurial spirit with a social vocation, including the enactment of legislation adapted to social entrepreneurship, the establishment of new support mechanisms and the emergence of new networks in these reinvigorated areas. This is another way of doing business in social entrepreneurship that is not just about making a profit. Entrepreneurs see economic efficiency as a service to society and the environment. The term "social entrepreneurship" is more general and includes the concept of social economy. Social entrepreneurship is the organization of activities aimed at the common good (social or environmental), but with viable economic projects aimed at profit.

Social entrepreneurship is a socio-economic enterprise that must generate a minimum of profit. Social entrepreneurship is really about creating business opportunities that have a positive impact. It's about making good use of business, considering the role of business in this world, and understanding how it can make a positive difference. Social entrepreneurship aims to balance economic and social gains. In other words, social entrepreneurs seek to meet the needs of groups and solve social problems through sustainable economic activity. Social

entrepreneurship is based on a deep motivation to put the public interest before individual interests, especially economic ones. In fact, the goal of social enterprises is not to generate profits and enrich themselves, but to reinvest the profits so that they can have a positive impact on a larger scale. A link can therefore be established between the intelligence goals of the field and social entrepreneurship. The territory has been at the center of attention for two decades because it is at the heart of the expression of the complexity that surrounds us. And while it's primarily the space around us, the term is too neutral to characterize what we perceive as more sophisticated. The territory has gradually replaced this concept (space), combining what could also be called the environment, what surrounds us in a very global sense: the physical, natural and developed environment, it gives more depth to things. But in a subtle way, the territory turns out to be much more than the space, the environment or the people who inhabit it. It's more than that, but in the end it no longer corresponds to what is used. After all, definitions overlap, space is geographical, territory is geospatial, environment is all of these, but it's a little less, and humans are often actors rather than actors refers to space (geographical space) and what refers to an actor.

The concept of territorial intelligence (IT) is commonly defined as the application of the principles of economic intelligence to public policies that contribute to the development of local economies and industries. A decision-making tool for local authorities. From this point of view, territorial intelligence has a key role to play in the development of multidisciplinary knowledge and information essential for sustainable development. Territorial knowledge is essentially generated in an academic setting, and for "territorial science" to emerge, there has not yet been an increase in intersections, conflicts and organizational arenas of territorial knowledge at the university level. The use of basic methods and common tools for analysing territory and territorial information remains uneven according to the laboratories and the different disciplines involved.

Territorial intelligence has many definitions, but all experts agree on the basics. Territorial intelligence is an emerging concept for applying the principles of economic intelligence at the territorial level to improve competitiveness. By facilitating the fluid flow of information, territorial intelligence must allow economic agents not only to master strategic intelligence, but also to improve their competitiveness.

Economic entities have an obligation not only to manage strategic information, but also to facilitate its protection and the implementation of impact measures.

7   RESULT

The Fez-Meknes region aspires to integrated, sustainable and inclusive development that benefits all regions of the region. To achieve this, several challenges related to strengthening the competitiveness of enterprises, developing regional innovation, protecting natural resources, reducing territorial and social inequalities, and enhancing cultural and historical heritage must be addressed. To achieve this integrated development, a development vision has been formulated to consolidate existing sectors and foster the emergence of new growth sectors such as industry, the digital economy, services and the knowledge economy. With strategic socio-economic assets, the Fez-Meknes region faces five major challenges to increase its competitiveness and industrial diversification. The region's strategy is based on the development of high-potential areas. In this context, we make the best use of the available data to see how social entrepreneurship drives local dynamics using machine learning and business intelligence. Regarding the research methods used in this study, we first collected as much data as possible on the platforms and websites of the competent authorities such as the High Commission for Planning, Regional Investment Centers and local authorities. We then used data mining techniques using R to manipulate the data and extract the results.
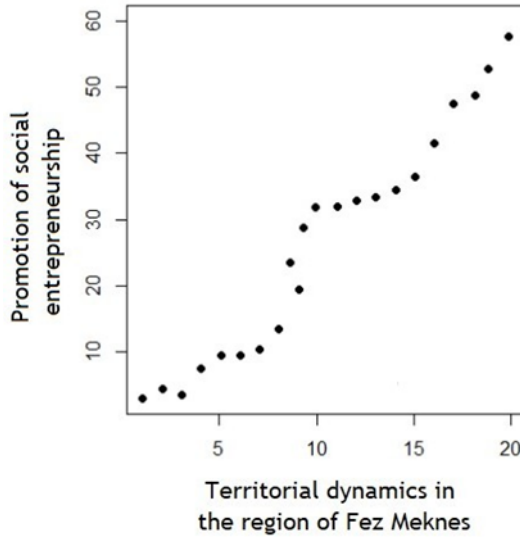
Fig.4. Machine learning using SVP to measure the impact of promoting social entrepreneurship on the territorial attractiveness of Fez and Meknes.

In this section, we used a data mining tool, the confusion matrix, to work on predicting the territorial attractiveness of the Fez-Meknes region from available data on projects and social entrepreneurship. This is a post based on data available on the website of the Regional Investment Center and other information available on statistics of the Fez-Meknes region, including social entrepreneurship and local attractiveness.

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The results show a strong relationship. Therefore, the more the competent authorities encourage social entrepreneurship, the more efforts will be made to strengthen and improve the territorial attractiveness of the Fez-Meknes region.

8 CONCLUSION

Although the application of data mining to the management of the promotion of social entrepreneurship is in its infancy, the research directions are promising and can allow emotional improvements in territorial intelligence in forms of government. Future research activities aim to develop new frameworks and criteria for the use of technological tools to increase the effectiveness of social entrepreneurship. New and sophisticated technologies are being explored to solve the problems of speed and efficiency needed to influence the actions of entrepreneurs and regulators.

The study reveals that the use of data mining techniques has a very positive impact on improving social entrepreneurship and community dynamics, particularly in the Fez-Meknes region. The results of this study clearly identified the benefits of data processing conditions and the simplification of decisions to be made.

9 LEARNING LIMITS

This study tested the introduction of data mining techniques to improve social entrepreneurship and territorial dynamics in the Fez-Meknes region and assessed its need and impact. However, this study has some limitations. At the same time, we needed to increase the sample size to test data mining and perform quantitative analysis. The study did not address issues such as the strategies that digital authorities should pursue or the role of government in launching digitization programs.

10 PROSPECTS FOR THE FUTURE

Social entrepreneurs who value their achievements as much as their impact on the environment and society. These two inseparable aspects are the raison d'être of a social enterprise. We go beyond the sole social and environmental responsibility (CSR) of a company because, as Business points out, CSR is the very essence of the company, without which no company can exist. In this regard, this research paper attempted to test the maximum variables using data mining tools. We were able to identify several key factors related to increasing the attractiveness of the region through social entrepreneurship in the Fez-Meknes region, which is an advanced smart solution that simplifies data processing. Our future research activities will therefore focus on the development and deployment of intelligent solutions adapted to this situation.

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