

UNLOCKING INSIGHTS: NATURAL LANGUAGE PROCESSING ANALYSIS OF CASE STUDIES IN THE OREN PROJECT

G. Tsaples

Intelligent Decision Support Systems - IDS S.M.P.C (GREECE)

Abstract

Case studies play a crucial role in vocational training, providing participants with the opportunity to draw parallels between their businesses and similar scenarios, thereby identifying factors that can impact efficiency and sustainability. This is particularly pertinent in the context of rural entrepreneurship, where businesses encounter comparable challenges across diverse geographical regions. This paper aims to demonstrate the application of Natural Language Processing (NLP) algorithms in analyzing case studies to generate valuable insights.

Conducted within the framework of the OREN project (E+ 2021-1-IT02-KA220-ADU-000033510), an Erasmus+ initiative, the research focuses on developing an interactive learning platform tailored to agricultural entrepreneurs. The platform integrates sustainable rural business models, simulation tools, and managerial courses to enhance participants' advanced skills in business management.

To investigate the socio-political dynamics of rural models, case studies were collected from various European countries. Standardized variables were identified to create a repository with consistent formatting, facilitating easy searchability. Data were categorized into (1) General Data on the partner country's area of interest and (2) Specific data on rural organizations. Machine learning algorithms in Python were then applied to cluster the case studies.

The analysis revealed noteworthy insights. Mediterranean countries prioritize innovation and technology for rural development, while northern countries emphasize the organic aspect of agriculture and the role of rural enterprise associations. A common obstacle across regions is the lack of resources for rural enterprises, irrespective of economic development levels.

Specific insights for certain European countries emerged:

- Germany: Focus on bio-organic aspects, concerns about resources, land, and water scarcity, and recognition of stakeholder importance.
- Belgium: Emphasis on the entire food supply chain, acknowledgment of the importance of land and water, leading to thoughts of production diversification.
- Bulgaria: General lack of resources, poverty associated with rurality, and focus on the entire food supply chain and land.
- Greece: Importance of innovation and technology despite rural poverty.
- Spain: Emphasis on innovation, technology, and diversification for competitiveness, with concerns over water scarcity.
- Italy: Consideration of innovation and technology, perception of resource scarcity hindering rural entrepreneurship, and association of rurality with poverty.

Keywords: Case Studies, rural entrepreneurship, Erasmus+, Natural Language Processing.