

Title: A Qualitative Causal Loop Diagram Representing the Drivers and Barriers of the Industrial Hemp Market in Ireland, Developed in NVivo & Vensim using Purposive Text Data from a YouTube Video Transcript.

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Extended Abstract

This extended abstract provides a comprehensive overview of a research study that aims to understand the drivers and barriers affecting the industrial hemp market in Ireland. Using a System Dynamics (SD) approach, the research employs qualitative data analysis techniques, including word frequency queries, sentiment analysis, and concept mapping, to develop a Causal Loop Diagram (CLD) that captures the complex dynamics of this system. The study identifies subsidies and sustainability as key drivers and negative perceptions and unsubstantiated claims as significant barriers to the growth of the industrial hemp market. The developed CLD shows the interrelationships between various variables and highlights the feedback loops that shape the market's behaviour. This research contributes to the understanding of Ireland's industrial hemp market and lays the groundwork for further investigation and decision-making in this domain.

Introduction

The industrial hemp market in Ireland has been experiencing growth in recent years, driven by various factors such as changing regulations, increased consumer demand for hemp-derived products, and the potential economic and environmental benefits associated with hemp cultivation. Understanding the drivers and barriers influencing this market is crucial for decision-makers and stakeholders seeking to optimize its growth and address any challenges that may hinder its development. This research employs a SD approach to analyse the complex dynamics of the industrial hemp market in Ireland and identify the key drivers and barriers.

Methods

The study utilises qualitative data analysis techniques to gain insights into the industrial hemp market. Word frequency queries in NVivo are employed to identify frequently occurring words and concepts, aiding in the identification of potential themes. Sentiment analysis is conducted to assess the positive and negative sentiment expressed in the data, providing an additional layer of understanding. Concept mapping in NVivo is utilized to visualise the connections and relationships within the data. These qualitative analyses serve as the foundation for developing a comprehensive CLD that captures the feedback loops and interdependencies within the industrial hemp market system.

Findings

The developed CLD comprises 19 reinforcing loops and 12 balancing feedback loops, illustrating the complex interdependencies within the system. The CLD highlights the relationships between variables such as subsidies, sustainability, land cultivation, farmers' adoption, market size, profits, regulations, and environmental effects. By visualising these

relationships, the CLD provides a comprehensive understanding of how various factors interact and influence the industrial hemp market in Ireland.

The research findings reveal that subsidies and sustainability are key drivers of the industrial hemp market in Ireland. Subsidies contribute to greater sustainability, leading to increased subsidies and fostering a reinforcing loop. However, negative perceptions of hemp and unsubstantiated claims act as significant barriers, hindering market growth. These barriers can result in more prohibition and less perception, impeding the development of the hemp market.

Limitations

The study acknowledges several limitations, including subjective interpretations of qualitative data and the challenges of incorporating qualitative variables into quantitative models. The open-loop view of causation, delays between actions and reactions, and the presence of nonlinearities and systemic impacts pose challenges in accurately modelling the system dynamics. Future research should address these limitations and refine the CLD through stakeholder engagement and quantitative simulation modelling.

Conclusions

This research contributes to the understanding of the drivers and barriers affecting Ireland's industrial hemp market through a SD approach. Subsidies and sustainability are identified as key drivers, while negative perceptions and unsubstantiated claims act as significant barriers. The developed CLD provides a visual representation of the intricate relationships within the system, offering valuable insights for decision-makers and stakeholders. By leveraging qualitative data analysis and SD modelling, stakeholders can make informed decisions to foster the growth of the industrial hemp industry in Ireland. Further research and refinement of the CLD will contribute to enhancing the understanding and potential of Ireland's industrial hemp market.