Strategic Thinking 2024

Economic and Social Challenges in Irish Pub´s Industry.

How to improve Economic Sustainability and Social Impact within the Irish Pub Industry.

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**Declaration**

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I declare it to be my own work and that all material from third parties has been appropriately referenced.

I further confirm that this work has not previously been submitted for assessment by myself or someone else in CCT College Dublin or any other higher education institution.

Abstract

Irish Pubs are an important part of Irish culture and traditions, in her article, Una Mullally (2020) concludes that pubs are traditional and common because they are a way of life from a reasonably young age.

As a culture, tradition, and way of life, it must have the same essence, and this is what makes it unforgettable and magical, however, times change and it is not easy to keep everything static, this is why it is important to monitor new trends and ways of conducting business today, trying to keep going business and avoiding the unfortunate fact of having to close these places that become a reference for the communities and meeting points.

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# Introduction

Some of the challenges that face the Pub industry and that could be addressed in the project are economic sustainability, the impact on local economies, and the adaptation to market changes, these problems, which are just some of the challenges facing the industry today, will become the objectives to be addressed.

In addition to solving the problems, which for some actors in the sector could be moved to another level, focusing on the traditional form, trying to preserve authenticity; the supported recognition of the problem, its effects, and the alternatives to address it, becomes important to raise awareness and mobilize the industry.

Yvonne Gordon in her article “In Ireland, pubs now offer more than just a pint” (2024), shows how the industry has had significant changes according to the customer´s preferences and habits, however in another article Conor Pope (2023), shows the figures of closures since the Covid-19 pandemic and how most of them were small or family-run business.

With these facts and recognition of the problem, it is important to define the action route and take into consideration the expected outcomes and impact, who is interested in the results, and how it will be presented to maintain its objective and not generate a misconception in the sector.

# Objectives

The objective of this project is to create models related to the identified challenges, work in this following carefully the CRISP-MD methodology.

## Economic Sustainability

Forecast future demand by creating a model considering foot traffic, seasonal trends, and cultural and social events.

## Impact on Local Economies

As it was mentioned in the Introduction most of the closed pubs were small and family-run businesses, this is a niche to explore and develop, analyzing trends in supply chain costs, and suggesting negotiation strategies.

This niche gains a lot of importance due to the expected characteristics of the same and the more local and centralized reach.

## Adaptation to market changes

When the idea of creating a new business arises, it is designed for current conditions, behaviours and preferences; it is not easy to adapt to change and when it changes represent a cultural and a way of life transformation it will be harder, sometimes it can be good for some of the customers and not good for others, here is when to have clear the basis of the business take relevant importance to make the changes aligned with the objectives, so to have a model with knowledge about the objective customer, new preferences and trends will make a difference in the future of the business.

Here, we will take into consideration new trends in social life and trends in the consumption of alcoholic and non-alcoholic beverages.

# Problem Definition

Pubs in Ireland like a cultural and traditional activity are falling behind and, in some cases, this has meant the closure of many of these establishments.

The problems that are sought to be addressed try not to interfere with tradition and service as a base, seeking to offer different products, in different seasons and reviewing the supply chain and its prices, creating a bargaining power based on access to information and planning.

# Scope

This Capstone project will be developed during the two-semester, it will include data related to social and seasonal trends, cultural and social events, supply chain costs, and trends in the consumption of alcoholic and non-alcoholic beverages.

The historical data will be data from The Drinks Industry Group of Ireland (DIGI) and it will be analyzed considering the years 2021, 2022, and 2023.

The data will be analyzed and processed to ensure the use of the information appropriately during the development, evaluation and results, using EDA to understand the data, detect anomalies, identify trends and have it prepared for modelling.

The project focuses on improving economic sustainability and social impact in the Irish pub industry through data-driven insights and recommendations.

With the average alcohol consumption, type of drinks, and considering the trends it will create the dataset and work in the models selected, initially considerate the use of Regression, Linear Regression and Decision Tree Regression models.

# Risks and Assumptions

## Risks

* Difficult access to data or existing data might be incomplete, inconsistent, or outdated, affecting analysis quality.
* Resistance to implementing suggested changes due to cultural attachment or perceived risks to tradition.
* Resistance to adopting technology or data-driven approaches within traditionally managed pubs.

## Assumptions

* Financial and operational data, along with customer feedback, can be collected from a representative sample of pubs across Ireland.
* There is sufficient demand for pubs to maintain their cultural and social relevance as community hubs, particularly in rural areas.

# Ethical Considerations

This research will ensure that all data sources, including databases, articles, and other materials, are properly credited and cited to uphold academic integrity. The information collected will be treated respectfully and used exclusively for the purposes of this study, preserving the original authors' ideas and intentions while serving as a foundation for obtaining accurate and meaningful results.

Furthermore, this study adheres to ethical standards by:

**Avoiding Plagiarism:** All references and sources will be explicitly acknowledged, ensuring that the work respects intellectual property rights.

**Transparency:** The methodology, data collection, and analysis processes will be clearly documented to maintain credibility and reproducibility.

**Respect for Privacy and Confidentiality:** Any data involving personal or sensitive information will be handled with strict confidentiality and in compliance with data protection laws, where applicable.

**Avoiding Misrepresentation:** Findings will be presented honestly, without exaggeration or distortion of the results.

These ethical considerations aim to ensure the integrity and credibility of the research while respecting the contributions of other scholars and adhering to academic standards.

# Deliverables

* Strategic overview of the business problem.
* Data analysis and sustainability model.
* Final report and presentation.

# Phases and Timeline

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| --- | --- | --- |
| **Phase** | **Description** | **Timeline** |
| Business Understanding | Define goals and success metrics | Week 1–2 |
| Data Understanding | Collect and analyze initial data | Week 3–4 |
| Data Preparation | Clean and preprocess data | Week 5–8 |
| Modelling | Develop machine learning models | Week 9–12 |
| Evaluation | Validate results and generate insights | Week 13 |
| Findings and Recommendations | Summarize and present results | Week 14 |

# Data Analysis

## Understanding the Data

The dataset used in this study focuses on the percentage of persons who consume alcohol with different periodicities per year, segmented by age. This data is crucial to understanding trends in alcohol consumption over time and its variations across different age groups. The primary objective was to prepare the dataset for predictive modeling using linear regression while ensuring data quality and accuracy.

## Data Preparation

The raw dataset underwent several preprocessing steps to ensure it was suitable for analysis and modeling. These steps included the following:

### Data Inspection:

* The dataset's structure, data types, and completeness were examined.
* Columns containing textual data were identified and encoded for compatibility with machine learning algorithms.

### Feature Engineering:

* Predictor variables (Year and Age Group) and the target variable (Percentage of people) were identified.
* Categorical variables were encoded using label encoding, transforming text into numeric values for model compatibility.

### Outliers and Data Distribution:

Visualizations such as histograms and scatter plots were used to identify outliers and understand the data's distribution.

* This process helped ensure the dataset reflected realistic and consistent patterns.

### Data Splitting:

The dataset was split into training (80%) and testing (20%) sets to evaluate the model's performance on unseen data.

## Exploratory Data Analysis

To gain insights into the dataset, the following analyses were conducted:

### Data Distributions:

* Histograms were generated to visualize the distribution of alcohol consumption across years and age groups.
* These visualizations revealed a general upward trend in consumption over the years.

### Correlation Analysis:

* A correlation matrix was created to identify relationships between variables.
* Both Year and Age showed positive correlations with alcohol consumption, indicating their importance as predictors.

### Residual Analysis:

A residual plot confirmed that errors were distributed randomly, supporting the suitability of linear regression.

## Modeling

A linear regression model was chosen for its simplicity and effectiveness in predicting continuous variables. The steps included:

### Model Training:

* The model was trained using the Year and Age predictors to estimate the percentage of alcohol consumption.
* The intercept and coefficients obtained were:
  + Intercept: -114.60
  + Coefficients: 0.0666 for Year and 0.0074 for Age.

## Results

The model highlighted:

A consistent increase in alcohol consumption over the years, with each year contributing approximately 0.067% to the overall percentage.

A minor increase in consumption with age, with each additional year in age contributing approximately 0.0074%.

A strong correlation between Year and consumption trends, suggesting external factors such as societal or economic changes may influence alcohol consumption over time.

## Conclusion

The dataset was effectively prepared and analyzed, yielding a robust model to predict alcohol consumption percentages based on year and age. The results provide valuable insights into consumption trends and can serve as a foundation for further research or policymaking.

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