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**Assessment Cover Page**

***Stimulating Ireland’s Innovation Ecosystem: Adapting to a New Geopolitical Era***

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**Declaration**

By submitting this assessment, I confirm that I have read the CCT policy on academic misconduct and understand the implications of submitting work that is not my own or does not appropriately reference material taken from a third party or other source.

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.

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# Introduction

In a world shaped by rapid geopolitical shifts, Ireland finds itself at a crossroads. With global political dynamics, particularly the policies under leaders like Donald Trump, influencing international trade, technology, and economic relationships, Ireland must adapt to remain a leader in innovation. This study delves into how Ireland can stimulate its innovation ecosystem, ensuring it not only competes but thrives in this new era. By embracing the crisis as a catalyst for creativity and innovation, we explore the importance of fostering startups driven by scientific knowledge, research think tanks, and cutting-edge technological trends. The analysing process aims to investigate how Ireland can stimulate its innovation environment to remain resilient and competitive.

# **Problem Definition:**

Ireland’s innovation ecosystem stands at a precarious crossroads. As geopolitical tensions escalate spurred by Brexit, protectionist policies, and global power struggles Ireland’s reliance on international markets, cross-border collaborations, and foreign talent is increasingly at risk. The country’s ability to maintain its competitive edge, attract high-level investment, and foster groundbreaking startups hinges on navigating these turbulent waters. However, without effective strategies to adapt to these geopolitical challenges, Ireland may face a gradual erosion of its innovation-driven economy. As the global dynamic becomes more unpredictable, Ireland’s innovation ecosystem could suffer from stagnation, leaving its startups and industries vulnerable to external shocks.

# Objectives:

**General Objective:**  
To identify and evaluate specific policy interventions through data driven analysis of external factors, using **Python** for data processing to access and query relevant datasets, ensuring the continued growth of knowledge-based startups and innovation-driven industries.

**Objective 2:**  
To explore and assess emerging technological trends, by analysing datasets related to technology adoption and its effects on innovation, using **Python**, **Jupyter Notebook** to model these trends and propose actionable strategies for fostering innovation.

**Objective 3:**  
To explore and assess emerging technological trends, and their potential to foster Ireland’s innovation ecosystem. This will involve analysing relevant datasets to understand the impact of these technologies, using **Python** and **Jupyter Notebook** for data processing and modelling.

# Literature Review

Government policies, investments in education, and Ireland's strategic EU positioning have shaped its innovation ecosystem (European Commission, 2023). However, challenges like Brexit and the need for industrial diversification present both risks and opportunities. Brexit has disrupted trade and innovation with the UK, highlighting the need for market diversification (The Guardian, 2025). Ireland’s EU membership remains crucial for research collaboration. Emerging technologies, such as blockchain, offer growth potential, as seen in Ripple’s partnership with Trinity College Dublin, though challenges like scalability remain (Neuron Expert, 2025; TecnoHispano, 2025). Internal policies must foster innovation in sectors like AI, blockchain, and renewable energy, requiring investment in talent and infrastructure to sustain Ireland's global competitiveness. Strengthening ties with partners like the United States and promoting local entrepreneurship are key to building a resilient economy (Taoiseach, 2021; Irish Government, 2021; Eurofound, 2021).

References

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# Scope Methodology

|  |  |  |  |
| --- | --- | --- | --- |
| ****Project**** | ****Description**** | ****Time**** | ****Actions**** |
| Phase 1: Business Understanding | Define the project objectives, stakeholders’ needs, and key questions. | 1st month | Initial literature review, identification of key questions. |
| Phase 2: Data Understanding | Gather relevant datasets from sources like Eurostat, OECD, WIPO, and ECB. | 2nd month | **Python**, **GitHub** |
| Phase 3: Data Preparation | Clean and prepare data for analysis. Handle missing values, outliers, and errors. | 2nd month | **Python** (Pandas), **Jupyter Notebook**. |
| Phase 4: Modeling | Apply machine learning models (regression, classification) to predict trends. | 3rd month | **Python** (Scikit-learn, TensorFlow), **Jupyter Notebook**. |
| Phase 5: Evaluation | Evaluate model performance using accuracy metrics and refine models. | 3rd month | **Python** (Scikit-learn, metrics libraries). |
| Phase 6: Deployment | Develop actionable insights and policy recommendations. | 3rd month | **Jupyter Notebook**, **Git, GitHub** |

# Out of Scope:

We won’t be going out into the field to do **primary data collection,** that means no surveys, interviews, or any form of hands on data. Our focus will be entirely on using **existing, publicly available datasets**. Also, we won’t be doing any **data identification** or creating new datasets.

# **Data Sources:**

Data will be sourced from **Eurostat, OECD, WIPO, ECB, EEA, and the UN SDG Database**, covering economic, innovation, patent, financial, and environmental indicators. Historical data from the past 5 years will be analysed using **Python (Pandas, NumPy) in Jupyter Notebook**, with **GitHub for version control**. All datasets are **open-access**, requiring no special permissions. These sources will provide a comprehensive foundation for assessing Ireland’s innovation ecosystem within the European and global context.

# Ethical Considerations

As we move forward with the project, ethical considerations are key to ensuring the integrity of our research and its outcomes. Here’s how we’ll address them:

* **Data Privacy & Anonymity**: All datasets used will be **publicly available** and **anonymized.**
* **Avoiding Bias & Misrepresentation**: Committed to using **validation techniques** to ensure that our analysis is free from biases.
* **Compliance with GDPR & EU Regulations**: The project will comply with all necessary regulations, especially the **General Data Protection Regulation (GDPR).**
* **Transparency & Objectivity**: Ensure full transparency in the methods and data used, providing a clear rationale for each decision made throughout the process.
* **No Harm Principle**: The goal is to create recommendations that **benefit all stakeholders**, ensuring that the insights and strategies without causing harm to businesses or communities.