

Supervisor Project Idea

Supervisor

Insert a brief CV and/or external link, the total number of publications, the ORCID link, 5 of the most significant/recent publications, and a list of funded projects and awards. **max 300 words**

Prof. Marco Cucculelli (PhD) - Professor in Applied Economics (<https://orcid.org/0000-0003-0035-9454>, Scopus: 56 papers, 1627 citations, h-index 20). Coordinator of the PhD in Economics at Univpm; Secretary General of the Italian Economic Association; Fulbright Distinguished Chair at the University of Pittsburgh (USA).

Marco Cucculelli works in the fields of innovation, technology, corporate finance and entrepreneurship. He is an Associate Editor in several international journals (JSBM Associate Editor of the Year in 2014) and has chaired several ICSB World Conferences. He is the coordinator of the Annual Conference of the Italian Economic Association. He is in the Top 2% Scientists ranking by Stanford University - Elsevier.

He participated as principal investigator to EU-funded projects and worked for the Italian Ministry of University. He is a founding member of the Industry Studies Association (USA) and the Asian Entrepreneurship Association. He was Director at-large at the International Council for Small Business, Washington, D.C. (USA).

1. Linying Li; Raza, M.Yousaf; Cucculelli, Marco (2024). Electricity generation and CO2 emissions in China using index decomposition and decoupling approach, *Energy Strategy Reviews*, Volume 51
2. Raza, M.Y., Cucculelli, M. Sustainable energy changeover in Pakistan: prospects, progress, and policies, (2024). *Environmental Science and Pollution Research* 31
3. Bahoo S. Cucculelli M. (2023). Artificial intelligence and corporate innovation. A review and research agenda. *Technological Forecasting & Social Science*, Volume 188
4. Lena D. Pasurka C. Cucculelli M. (2022), Environmental regulation and green productivity growth. Evidence from Italian manufacturing firms. *Technological Forecasting & Social Science*, 4
5. Cucculelli M. Peruzzi V. (2020). Innovation over the industry life cycle. Does ownership matter? *Research Policy*, Volume 49, Issue 1

Recent European fundings:

- **TaskforCome** – Interreg Central Europe - Skills and entrepreneurial competences for advancing economic and social innovation – 2019-2022
- **AdriHealthMob** – Health and mobility in the Adriatic microregion (2016)

National fundings:

- **Firms within networks of words: Using text data to measure proximity between firms and firm performance**, 2023-2025
- **IT-compatible business models for technology transfer**, 2018-2021
- **Competences for SMEs' growth in innovative and eco-sustainable sectors. Gaps and policy options**, 2018-2022

Research Group Description

Provide the name of the reference department and a brief description of the research group, including external links, and available instrumentations and infrastructures. max 300 words

The research group consists of senior researchers, postdocs and PhD students from the Department of Social Sciences and Economics at Università Politecnica delle Marche and a group of researchers from partner universities: University of Brussels (innovation and technology analysis), Shandong Technology and Business University (energy and environment), ZEW Mannheim (technology management), University of Bologna (patent analysis) and Perugia (innovation). The participating researchers have different and complementary skills and abilities, as well as specific expertise in the use of data management tools for empirical analysis. All researchers are outstanding scientists with specific expertise in patents, innovation, energy and environmental economics and policy, technology foresight and industrial scenarios. In addition, there are research links with private national research centers (Istituto Tagliacarne - Italian Association of Chambers of Commerce) and with research departments of national and international organizations (Confindustria and OECD). The research group has access to several public databases on company accounts and patents, as well as proprietary datasets on surveys and field studies conducted by members of the Department.

Title and goals

Provide the title of the topic and a short summary of the project idea. max 200 words

Technological trajectories in STEP and NetZero sectors. Industry and corporate analysis using web-mining and patent data.

The Strategic Technologies for Europe Platform (STEP) is the European action to support EU industry and promote investment in critical technologies in three areas: digital technologies and deep-tech innovation, clean and resource-efficient technologies, and biotechnologies. In line with this framework, the Net-Zero Industry Act (Green Deal Industrial Plan) aims to promote investment in the production capacity of products that are central to achieving the EU's climate neutrality targets.

In this scenario, the research project aims to investigate how industries and sectors are developing in these technological areas and how these technological trajectories impact the positioning and performance of companies. Insights from the analysis will be used to inform the industrial policy. Technological trajectories can be identified as accumulated chains of knowledge that represent the dominant long-term developments in a specific technology.

The research team has made extensive use of patents and citations to examine innovation outcomes at individual and sectoral levels. Global key root and main path analysis will be used to assess trajectories. New data from the Internet will provide a complementary perspective to patents for analyzing strategic technologies. Overall, patents and web analytics will help identify technologies, industries and players (companies) that are on the technological frontier, and track innovation trends and opportunities over time. Research findings will be used to provide evidence-based guidance to companies and institutions and to inform the industrial analysis and policy.

Prof. Marco Cucculelli (PhD)
Department of Economics and Social Studies
Università Politecnica delle Marche
Piazzale Martelli, 8 – 60121 Ancona
m.cucculelli@univpm.it
www.univpm.it/marco.cucculelli