

# THE POLITICAL ECONOMY OF RESEARCH AND INNOVATION

## Context and Rationale

The proposed research is motivated by academic, professional, and personal interests. It stems from my background as a Political Economy student, my work as a practitioner of Research and Innovation Actions (RIAs) in Europe and the Middle East, as well as my personal interest in emerging technology and global governance. As such, **it is intended to continue my academic growth, develop my professional capacities, and sate curiosity.**

In 2019, I submitted a PhD application to the University of Urbino. Unsuccessful in attaining a position with a scholarship, I regrettably had to decline the offer of admission. Since then, however, I have gained professional experience as a Researcher, Grant Proposal Writer, and Business Development Expert in European Research and Innovation Actions (RIAs). In those capacities, I have participated in projects funded by Horizon2020 and its successor Horizon Europe, including schemes such as the EIC Accelerator, the EEA and Norway Grants, Erasmus+, and EuropeAid, as well as bilateral cooperation agreements between international organizations such as Oxfam and, for example, my home country of Egypt.

As my professional experience in RIAs increased, so did my knowledge about emerging technologies—namely, Artificial Intelligence, 3D Printing, Blockchain technology, and the Internet of Things (IoT). **I noticed that policy is becoming increasingly demanding of science and innovation to fix generation-defining challenges concerning health, the environment, and global governance.** As such, and in parallel, my academic interest in the explanatory power of the Political Economy of Research and Innovation (PERI) grew as regards the global and collective organization of political and economic rules. In this PhD application, I maintain the same academic focus insofar as the political economy element is concerned. **However, I intend to look at the PERI as an explainer of changes in international economic policy and global governance.**

The specific dependent variables and means of measuring policy and governance are yet to be fully developed, primarily as the proposed research lies at the intersection between orthodox economic studies, Behavioural Political Economy (BPE), and International Political Economy (IPE) and its parent scholarship of International Relations (IR) theory. While further research is required to do justice to this massive intersection of knowledge, initial formulations would have me place **focus on international trade rules and trading routes (especially US-China), the treatment of global warming as a ‘public good’ rather than a ‘market externality,’ and the growing demand for global health governance.**

The proposed PhD thesis below intends to look at the shifting relationships between corporations and consumers and policymakers and voters/lobbyists to understand the changing relationship between the state and markets, reconceptualising epochal challenges and phenomena such as those aforementioned in terms of the PERI, with the ultimate goal to test the hypothesis that too-big-to-ignore challenges are forcing states and markets to provide Innovation Economies the world over *de facto* policy-making capacities.

Armed with two years of practical experience in Research and Innovation (R&I) management and academic experience in political economy topics, I believe I am at a further stage of professional and academic maturity to undergo and benefit from this PhD program, the themes of which perfectly match my academic and professional aspirations, as well as my personal interests—as set out above.

## State of the Art

People and nations, and the policies that represent and govern them, are becoming increasingly demanding of science that it responds to epochal and universal crises, while also “driving and reshaping a troubled global economy” (Tyfield et al., 2017: 1). The emergent Political Economy of Research and Innovation (PERI) is thus being evoked as an explainer of the global political and economic policies, mechanisms, and institutions emerging during an age of global crises (Tyfield, 2012).

Fundamental changes in governance, policy, and policymaking—not least concerning their internationalisation—have, for decades, called into question orthodox economic studies’ explanatory capacity (Sen, 1977; Walker, 1980; and Hall, 2003). Multiple ‘forks’ have taken place in the literature to complement economic studies with knowledge from other disciplines, ultimately allowing economic analyses to more accurately reflect the complexity of modern economies. Behavioural Economics employs knowledge from sociology and psychology to replace the rational thinker model with more agentic models (See the early works of Daniel Kahneman, Amos Tversky, and Richard Thaler *circa* 1980s for information on the founding of modern behavioural economics); Political Economy studies aim to merge Political Sciences and Economics to explain phenomena that have their causes at the intersection of political and economic interest.

For example, classical economics treats ‘global warming’ as an “externality” of markets, whilst modern policy treatments of environmental change increasingly and implicitly define it in terms of a ‘global public good’ as concerns the consorted management of GHG emissions (Nordhaus, 2017). As such, the causes and consequences of global warming policy have fundamentally changed, insofar as their interaction with markets is evolving. It is becoming increasingly vital for businesses in sectors such as logistics and transport to be expertly aware of changing public and political sentiments concerning the environment—and the resultant policies.

Orthodox economic studies also want for explanations as to why trade interdependence is being heavily challenged across supply and Global Value Chains (GVCs) today. US-Chinese trade relations in particular have been the subject of much debate, as US bans on some high-tech Chinese products continue to increase, affecting global socioeconomic interdependence in ways unexpected and unexplainable by traditional economic studies. While there is more free trade and associated agreements today than ever before, there is a great deal of ‘re-routing’ of trading lanes that economic theory is ill-suited to explain. In a 2019 Economic Modelling study, the authors posit that the policy relationship between the two economic superpowers is increasingly “driven by political factors rather than economic motives” (Zhang et al., 2019: 47), calling upon political economy explanations for:

- How and why modern economic policy is formulated;
- How it reinforces consumer trends and behaviours;
- How it is (re)directing resources to maximise future economic positions rather than modern, immediate gains;

Insofar as the role of innovation is increasingly exerting influence on laws, regulation, and policy, as well as everyday life, a multi-disciplinary approach is essential to understand the impact of the PERI on modern economic policy, especially international policy. The academic reason for this is quite simple: since the 1980s when the term *innovation* began receiving the scholarly attention it deserves, it has been studied as a multi-disciplinary topic. According to a 2003 “guide to the [innovation] literature” by Jan Fagersberg,

research on the role of innovation in economic and social change has proliferated in recent years, particularly within the social sciences, and often with a bent towards cross-disciplinarity. It is argued that this reflects the fact that no single discipline deals with all aspects of innovation, and that in order to get a comprehensive overview of the role played by innovation in social and economic change, a cross-disciplinary perspective is a must (Fagersberg, 2003: *abstract*).

As such, a multi-disciplinary approach will be taken in this study, as well as a Mixed Methods Nested Methodology. Collectively, the different literatures and methods will be used to study the impact of the PERI through focusing on 3 global crises and 4 innovation technologies with the market power to respond →

## Research Aims and Objectives

The primary aim of the proposed study is to determine to what extent the PERI can explain global political and economic policies, mechanisms, and institutions emerging during an age of global crises. As such, three 'crises' (fields of innovation) are identified, alongside 4 innovative technologies →

### Global Crises (Fields of Innovation)

1. Environmental change and the need for Renewables to have a larger share of the energy mix
2. Global governance and the need for decentralised economic rules and institutions to govern the new era
3. Community health management, and the need for guards against the spread infectious disease

### Innovative Tech

Artificial Intelligence (AI)  
3D Printing  
Blockchain Technology  
Internet of Things (IoT)

### Research Question

Does the Political Economy of Research and Innovation (PERI) play a role in determining international economic policy in an age of global crises? To what extent can PERI explain trends in global in(ter)dependence, global governance, and global income distribution?

### Primary Academic Literatures

International Political Economy (IPE)  
Political Economy of Research and Innovation (PERI)  
Comparative Politics

### Secondary Academic Literatures

Behavioural Economics  
Behavioural Political Economy (BPE)

### Tentative Hypothesis 1

Spurring added demand for 'Health Tech', the Covid\_19 Pandemic, in turn, accelerated the global adoption of emerging technologies in multiple public and private sectors and functions and the associated structures, institutions, and mechanism of global governance.

### Tentative Hypothesis 2

Modern economic innovation is increasingly more dependent on rapid and decentralised policy instruments, as the market power that underwrites applied economic innovation is increasingly dependent upon *positive law* and Intellectual Property Laws.

### Tentative Hypothesis 3

The Innovation Economy distributes income and advantages more equitably than orthodox market structures— i.e. PERI is more democratic and egalitarian in current practice (specific attention will be paid to youth unemployment and female participation in the labour force and SME participation within innovation economies).

## Proposed Methodological Framework

The proposed study means to derive new explanations for policy formulation during an era of multiple and overlapping global crises.

To that end, the project adopts a **Mixed Methods Nested Approach** wherein qualitative and quantitative tools are used in conjunction to (1) obtain, (2) analyse, and (3) relay different forms of data. Nested approaches allow one instrument of investigation to inform the others in an agile-esque feedback loop →

*Process Tracing* will be used in a comparative setting to investigate the origins of modern international economic policy, identifying causal effects and mechanisms originating in the PERI.

*Game Theoretic Analyses* will be used to bring Behavioural Economics into the fold. The role of agency in policy formulation is well documented, and the management of the Covid\_19 Pandemic by different public actors and policies, each responding to different societal pressures, is ripe for examining the role of the PERI in governance. Game theory also allows the deviation from prescriptive norms (*ought, should, would, could*) in favour of descriptive observation (*does, is*).

*Regression Analysis* will be used as a final instrument to compare macro data between origin geographies of different economic policies, adding quantitative robustness and comparability value.

## Expected Research Results and Contributions

The expected results of the proposed study can be described in terms of (1) advancing agents' understanding of economic policy formulation in a time of overlapping, global crises, (2) advancing non-partisan and cross-disciplinary research and methodologies, and (3) advancing the utility and uptake of research by policy makers.

### Functional Contribution

In an era of increased global interdependence and massive, multinational corporate and government structures, it is easy for the voter/consumer to feel disenfranchised by the rules that govern him and her. Understanding the role Science, Technology, and Innovation (STI) plays in shaping the rules of government, both politically and economically, is key to greater civic engagement and economic participation. **Thus, there is a functional contribution expected as part of this study, as experts in STI and researchers, SMEs, entrepreneurs, incubators, accelerators, and other members of the innovation ecosystem realise and capitalise on their newfound capacity as policy drivers.**

### Academic Contribution

As discussed in State of the Art, calls to reconceptualise orthodox economic studies have never been louder. As the barriers between politics and economics become increasingly blurred, so much we, as scholars and academics, respond by advancing non-partisan, multi-disciplinary approaches to studying new phenomena or the novel merger of existing phenomena. **The proposed study will contribute to the literatures of IPE, BPE, PERI, and, ultimately, IR Theory by doing just that. As a proponent of multi-disciplinary and mixed methods approaches, it is my hope to use my PhD to demonstrate the explanatory power of *shotgun marriages* between structure and agency, politics and economics, and quantitative and qualitative tools of data attainment and analysis.**

### Policy Contribution

The proposed study has some obvious and some not-so-obvious policy implications. Putting aside normative judgment—whether it is better or worse for the innovation economy to direct policy formulation—the fact that it may be enough to disrupt state-voter and market-consumer relations—positively, I believe. The connection between academia and policy, in the European context for example, is wanting for more. Europe funds billions of euros worth of research every year, a great degree of which has no potential for uptake. **Investigating the role of the PERI in policy formulation will have knock-on effects as concerns Public-Private Dialogue (PPD) and the role of civil society in political affairs by directly demonstrating a link for the update of academic research by policy.**

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