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**Strengths and weaknesses  
related to various empirical methods in  
interdisciplinary fields like  
International Political Economy**

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**Ole Gunnar Austvik:**

## **Strengths and weaknesses related to various empirical methods in interdisciplinary fields like International Political Economy**

Abstract:

This paper discusses strengths and weaknesses related to empirical methods in interdisciplinary fields like International Political Economy. Firstly, the role of empirical research methods in social research is addressed. Secondly, quantitative and qualitative research methods are compared. Thirdly, particular aspects of interdisciplinarity and International Political Economy are outlined. Fourthly and finally, strengths and weaknesses of empirical methods in interdisciplinary research like International Political Economy are discussed.

Key words: Research methods, interdisciplinarity, International Political Economy.

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## 1. Introduction

Empirical research methods are ways of collecting empirical observations in order to answer particular research questions. The purpose of the research is to test a theory, and possibly to refine it to try to explain and/or predict what happens in the real world. In some cases, research is also conducted to develop theory. In an interdisciplinary field like International Political Economy (IPE) *research questions* to be answered could for example be:

- The role of the G-10 governments in creating a new WTO-deal.
- What is the role of Turkey in realizing the Nabucco gas pipeline?
- How can the causes behind the financial crisis in Iceland best be understood?

To be empirically tested, the research question will need to be transformed into a *theoretical model*. This consists of identifying latent variables, causal relationships and measures of observable variables. Usually, the theoretical model is developed based on analysis of the literature.

For example, in my thesis the analyses of the literature explores how the maneuvering room and policy options for a state's industrial entrepreneurship are affected by international economic integration processes, with an emphasize on economic integration in the EU.

The theoretical model forms the basis both for the collection and analysis of data and it may be modified as a result of the research. The research attempts to create or validate theories through data collection and data analysis, in order to explore, describe and explain. The theory describes causal relationships between independent variables and dependent variables (which the research is trying to explain).

Based on the causal relationships developed in the theoretical model, *propositions* or *hypotheses* can be formulated that defines an expected relationship between the variables which can be empirically tested.

The selection of an appropriate research method is thus critical to the success of any social research project. It must be driven by the research question, the state of knowledge in the area being studied, and the attributes and accessibility of data. Interdisciplinarity does not differ in these respects from unidisciplinary social research, but it inhibits, as these, some particularities to be taken into consideration.

## 2. Quantitative and qualitative research methods

Empirical social research methods are usually divided into two broad categories.

- *Quantitative methods*, which attempt to quantify phenomena and collect and analyze numerical data using statistical methods. They usually focus on links between smaller numbers of characteristics, or attributes, across many cases.
  - Among the most important quantitative methods are: statistical experiments and observations, surveys, questionnaires, use of secondary statistics analyzed cross sectional or as time series.
- *Qualitative methods*, (which) emphasize interpretation and evaluation rather than quantification, and collect and analyze qualitative data using qualitative data analysis methods. Qualitative data analysis is more subjective than the quantitative, and relies heavily on the researcher's knowledge and experience to identify patterns, extract themes and make generalizations. Qualitative methods focus on links among a larger number of attributes across fewer cases than quantitative methods.
  - Among the most important methods generally counted as qualitative are: Case studies (as a superstructure), interviews and observations. Historical and archival methods are most often counted as qualitative but are sometimes also quantitative.

These two broad categories of social research methods are different in many aspects, but both involve a systematic interaction between theories and data. While quantitative methods are based on a positivist model of testing theory often in a hypothetical deductive model, qualitative methods are focused on the interpretation of data and to generate theories and accounts. Quantitative approaches traditionally seek to minimize intervention by the prejudice of the researcher in order to produce valid and reliable statistics through some sort of partial analyses. Qualitative approaches traditionally treat intervention as something that is necessary, in order to grasp a proper understanding of the research questions set up.

While *quantitative* methods tend to result in more convincing scientific evidence, they are generally more difficult to apply in a real world context. The mathematical science of statistics is pertaining to the collection, analysis, interpretation or explanation, and presentation of data. It also

provides tools for prediction and forecasting. In addition, patterns in the data may be modeled in a way that accounts for randomness and uncertainty in the observations, and are then used to draw inferences about the process or population being studied. Descriptive, predictive, and inferential statistics comprise applied statistics.

The two major types of causal (statistical) studies, *experimental studies* and *observational studies*, both observe the effect of differences of an independent variable (or variables) on the behavior of the dependent variable. The difference between the two types lies in how the study is actually conducted.

An *experimental* study involves taking measurements of the object under study, manipulating the object, and then taking additional measurements using the same procedure to determine if the manipulation has modified the values of the measurements. It differs from non-experimental methods in that it involves the deliberate manipulation of one variable, while trying to keep all other variables constant. Partial studies in economics fall into this category.

A main problem with all non-experimental methods is lack of control over the situation. The experimental method is a means of trying to overcome this problem. One of the biggest disadvantages of experiments is however their artificiality. There is always a question whether the things we learn in a controlled laboratory-like setting will hold in the real world. Also, while experiments are strong in terms of explanation, they are weak in terms of description.

An *observational* study (as opposed to experimental methods) does not involve experimental manipulation. Instead, data are gathered and correlations between relationships are investigated. Observational research is a social research technique that involves the direct observation of phenomena.

This differentiates it from experimental research in which a partial environment is created to control for factors not wanted to be included in the analysis, and where at least one of the variables is manipulated as part of the experiment.

*Qualitative* methods on their side tend in general to be applied more easily in real world settings than quantitative methods. On the other hand, they often lack internal validity (such as alternative explanations of results) and external validity (especially when concerned with a single case which limits the generalizability to other settings). Also, interpretation of data is by nature much more subjective than quantitative methods; it is easy to fall into the trap to read what you want into them.

Case study is one method usually considered as one of the more important among the qualitative methods, often used in studies of IPE. They can be performed in many different ways. In the literature we find case studies to being disciplined interpretive, hypothesis-generating, focus on least-likely and most-likely cases, to deal with special deviant cases and others.

Case study research means both single and multiple case studies, and can well include quantitative evidence, rely on multiple sources of evidence and benefits from the prior development of theoretical propositions. Case studies can actually be based on any mix of quantitative and qualitative evidence, in spite of the fact that it as a superstructure must be classified as qualitative.

Case study methods involve an in-depth examination of a single instance or event: a case, rather than using samples and following a rigid protocol to examine limited number of variables. They provide a systematic way of looking at events, collecting data, analyzing information, and reporting the results. As a result the researcher may gain a sharpened understanding of why the instance happened as it did, and what might become important to look at more extensively in future research. Case studies lend themselves to both generating and testing hypotheses by denying or confirming them.

It can from this be argued that qualitative methods tend to be more appropriate in early exploratory stages of research and for theory building. Quantitative methods tend, on the other hand, to be more appropriate when theory is well developed, and for purposes of theory testing and refinement. While statistical methods might be able to deal with situations where behavior is rather homogeneous and routine, case studies are needed to deal with creativity, innovation, and context.

For example, when in my thesis I study the dynamism of the Norwegian state as a political entrepreneur in creating and developing the Norwegian petroleum industry and a national gas strategy as part of this, and discusses how is influenced by the EEA agreement and EU gas market liberalization, I have considered a case study to be appropriate.

Detractors argue that case studies are difficult to generalize because of their inherent subjectivity and because they are based on qualitative subjective data in a particular context, generalizable only to this context.

Straight-forward generalization of the Norwegian petroleum experience in my study as a single case to experiences of other countries is also a problem of this reason.

In practice, however, no research method is entirely qualitative or quantitative (Yin 1994). For example, a survey may collect qualitative data using open questions as well as quantitative data asking for specific measurable elements; a case study may incorporate qualitative data and discussions of these, as well as quantitative data to study more isolated aspects more closely. My study has thus incorporated a number of quantitative analyses of single elements contributing to the answers to the overall research question set up.

A combination of research methods may be most effective in achieving a particular research objective across disciplines. For example, when a subject area is not well understood, or when it is typically influenced by many qualitatively different and hence incommensurable factors and forces, qualitative methods may be used to build theory and define testable hypotheses. This theory may then be tested using quantitative methods like surveys and experiments.

Such *triangulation* of qualitative and quantitative research methods exploits the two groups of approaches' complementary strengths, and has potential for achieving a more comprehensive understanding of a phenomenon than single methods can.

### **3. Interdisciplinarity and International Political Economy**

Now turning to the interdisciplinary fields where the empirical methods shall be applied. Are there characteristics of interdisciplinarity that should lead us towards applying more the one than the other group of empirical methods?

There are more types of inquiry that is referred to as "interdisciplinary", combining two or more disciplines in a research project; inter-, multi, cross- and other-disciplinary approaches. I will here concentrate on the two most commonly used in studies of IPE: interdisciplinarity and multidisciplinary.

*Interdisciplinarity* as understood, attacks a subject from various angles, and blends practices and assumptions of each discipline involved in a common core of concepts and methods. Consensus definitions are however not yet established in the field. A key question is what new knowledge (of an academic discipline nature), which is outside the existing disciplines, is required to address the research question.

When aspects of the challenge cannot be addressed easily with existing distributed knowledge, new types of knowledge become an important sub-goal for interdisciplinary research.

*Multidisciplinarity* is, on the other hand, a non-integrative mixture of disciplines where each discipline retains its methodologies and assumptions, unaffected by changes and developments in other disciplines. Two disciplines may study various aspects of an object and integration is achieved by combining the two studies, or by taking conclusions from one discipline and using them as input factors in the research of the other.

Tanya Augsburg (2005:56) wrote: "In a multidisciplinary approach, disciplines are combined by aggregation". With a multidisciplinary relationship the cooperation between the disciplines "...may be mutual and cumulative but not interactive". This is what I have attempted in my thesis.

A key question is how well the challenge at hand can be decomposed into nearly separable subparts. The lack of shared vocabulary between disciplines and communication overhead is an additional challenge. However, if a topic can be properly decomposed, a multidisciplinary approach can be efficient and effective.

The extent to which it is possible to combine qualitatively different values and motivations between actors in a common core of concepts in an interdisciplinary approach is not always clear. The nature of the challenge, either its scale or complexity, requires that many people have interactional expertise to improve their efficiency working across multiple disciplines as well as within the new interdisciplinary area. Interdisciplinarity is therefore a more demanding approach than multidisciplinarity.

*International Political Economy* (IPE) as an inter- and/or multidisciplinary field of study represents both the past and the future of social science. In the past because it represents a return to the origins of social science, before the study of human social behavior became fragmented into discrete fields of economics, political science, sociology, history, and philosophy. In the future because, in today's complex world, most important social problems have an international or multinational aspect that is best understood through an integrated study drawing on various tools and perspectives.

IPE emerged as a heterodox approach to international studies during the 1970s with the 1973 world oil crisis and the breakdown of the Bretton Woods system. It alerted academics of the importance, contingency, and weakness of the economic foundations of the world order.

IPE scholars asserted that studies of international relations had placed too much emphasis on law, politics, and diplomatic history.

Similarly, neoclassical economics was accused of abstraction and being ahistorical.

IPE scholars proposed a fusion of economic and political analysis. In this they objected to the reliance on the territorial state and microeconomic actors within the states as the only units of analyses, and stressed their interaction and the role of the functioning of an increasingly integrated international system.

This should certainly be true also when we study the present international financial crisis and its effects of today.

IPE is hence a *set of issues* to be investigated. It consists of three main elements:

1. *The international / global affair* part that deals with cross-national border issues and relations between nation-states.
2. *The political* part that deals with the use of state power and organization to make decisions about who gets what, when and how. It is concerned with the understanding of collective choice, drawing in competing and often conflicting interests and values of different actors.
3. *The economic aspects* that deal with how scarce resources are allocated, most often through decentralized market processes.

Often political science and economics study the same issues. Economic analyses focuses however more on issues of income and wealth creation and individual interests, and less on state power, national interests and institutional apparatus than do political scientists.

To understand an issue, social and cultural environments must also be considered along with the values of the different actors, being economic or political. The historical development of important issues cannot be ignored either. IPE thus defines itself as the study of problems and issues that require an interdisciplinary and multilevel approach.

This is certainly also true when studying the evolution of the Norwegian state's political petroleum entrepreneurship.

The academic boundaries of IPE are flexible, and along with acceptable epistemologies the subject of robust debate. Most scholars concur however that IPE is ultimately concerned with the ways in which political forces (states, institutions, individual actors, etc.) shape the systems through which economic interactions are expressed, being local, national or

international – or by sector. Conversely IPE is also concerned with the effects that economic interactions (including the power of common markets and individuals acting both within and outside them) have upon political and administrative structures and outcomes.

Hence, IPE scholars are at the center of the debate and research surrounding globalization, both in the popular and academic spheres. Topics that command substantial attention among IPE scholars are international trade (with attention to the politics surrounding trade deals, but also examining the results of trade deals), economic development in both developing and industrialized countries, the relationship between democracy and markets, questions surrounding international finance (such as the present financial crisis), behavior of global markets, bi- or multilateral cooperation in solving trans-border economic problems, the combined economic and political balance of power between and among states and institutions, and the understanding of energy markets and energy policy.

Unlike conventional theory of international relations in political science, power in IPE is understood to be both economic and political, and interrelated in complex manners.

Unlike conventional economics, market behavior and market outcome is understood also in relation to the different strategic types in political and state behavior and ideology, and not only among market participants.

Scholars of international political economy often discuss three main types of ideology in relation to economic activity and international relations: liberalism (by different scholars), realism (by some called economic nationalism) and historical structuralism (by some phrased Marxism). Increasingly, constructivism is included as a perspective also, saying that preferences are not necessarily exogenously given but endogenously defined depending on institutions, identities and the social environment. Under constructivism social goals can be in flux.

Although somewhat differently phrased and defined in the literature, the alternative perspectives intend to demonstrate how different ideologies can lead to different policy and economic strategy in situations which in other respects are considered the same. Orthodox liberalists (e.g. classical economists) consider the role and goal of the state to be fundamentally different than supporters of a historical structuralist perspective (e.g. Karl Marx) and a realist / economic nationalist perspective (if I may include Russia's Vladimir Putin in this group). And yet, different from interventionist liberals (e.g. John M. Keynes).

Such ideological divisions are found in different political practices, and must be understood to explain what happened in a specific area, why it happened and what may happen in the future. The ability to innovate, develop and design policy and economic strategy depends on traditions and values related to development, and/or the active *creation* of visions and ideology. This was particularly significant when the Norwegian petroleum sector was established with the strong state hand.

Critics have asserted that there is now too much variation in the different view points grouped into each category of ideological perspectives. Also the names can be considered misleading for the general public. The point here for the understanding of the interdisciplinary IPE field is however that different ideology can provide different optimal mixes of the roles of the state and the private industry in an economy, state-industry relations can be different and the reasons for policy choice can be mixed. It is not only a question of more or less governmental involvement in economic activity, but also its form and justification.

Different understandings of economic integration processes are also important to understand economic and political developments on both national and international levels.

The liberal *neo-functional* theory of regional and EU integration set out by Ernst Haas in 1958, supported the idea that lower levels of integration lead to higher levels and more comprehensive common or harmonized policies across member states.

*Intergovernmental* theorists have on the other hand claimed that neo-functionalists underestimate the resilience of the nation-state, and that these states resist the gradual transfer of supranational authority to EU institutions. The bargaining and consensus-building techniques of the Community method were instead considered to be refinements of intergovernmental diplomacy, rather than the ultimate transfer of power to supranational EU institutions.

In addition to these differences, there are also variations in administrative traditions to be understood, such as the divisions between the Continental, Anglo-Saxon and Scandinavian models.

In studying all these different types of forces, factors and understandings, a main consequence for the choice of appropriate empirical methods is that in interdisciplinary fields, qualitatively different and often incommensurable values and data comes together in the analysis more explicitly than in unidisciplinary approaches.

Some of these data cannot be measured quantitatively at all, and, for sure, they cannot be put together without subjective evaluation.

#### **4. Strengths and weaknesses of empirical methods in interdisciplinary research like International Political Economy**

Taken together; Qualitative methods appear as invaluable for the exploration of real world phenomena, while quantitative methods are important to facilitate the discovery and treatment of quantifiable information.

Simply spoken, in economics quantitative methods dominate, while in political science, qualitative methods tend to be more important. Econometrics has many advantages over qualitative analyses, but it may on the other hand include an opportunity cost. If the assumptions they are based on are not qualified for the problem at hand, important information is lost.

If econometrics is however used within a properly considered framework, for example by the help of an initial qualitative analysis, it can be used and has established itself as a helpful tool for many political scientists in their research to empirically study political behavior and institutions.

Economists may also implement qualitative analyses as an outset for their work, albeit the journals of economic literature over the past couple of decades has been strongly colored by quantitative methods and econometrics. In many articles, the ability to deal with complex quantitative methodology and deductive theory may even be seen as more important than to provide new knowledge about the social or economic problem at hand.

Some political scientists also take comparative statics analyses from economics. In doing so, they can add other methods to understand the dynamics of change and the actual behavior of actors. Processes when a country for example changes policy from a high protective tariff to a lower tariff or are establishing or reorganizing institutions are often *path-dependent* to historical socio-economic traditions and models.

Where a new equilibrium actually ends up is partially a function of the sequence of actions and their context that the equilibrating process consists of and within.

The changes in the initial and exogenous factors and the comparative statics method are alone insufficient for fully understanding how the old

equilibrium changes to a new one. "Where you end up depends actually how you got there".

The path-dependency in an economic theory-setting demonstrated in the writings of last years economics Nobel laureate Paul Krugman about geography and trade and his descriptions of regional economic developments emphasize the agglomeration of external economy of scale, are also fruitfully implemented and further developed by some political scientists.

The point here is that the traditional divisions between the two disciplines are not necessarily fully meaningful any more. In this process, the interdisciplinary field of IPE intends to cover a bridge between the two.

Research within the field of IPE has however heavily relied on qualitative methods. These methods offer several advantages as well as some disadvantages compared to "harder" statistical methods.

Especially case studies have been used to develop and critique diverse theories and to analyze specific cases, although the term qualitative about case studies is often used by scholars who disagree on epistemological basics.

These cases represent single instances of events or phenomena. They can be very different and are flexible according to the subject. One could for example select three cases defined as decisions by three different countries to raise trade tariff barriers. Or three events in the history of a single country to raise trade barriers could also be defined as three cases. Or three different ways of organizing the petroleum activity in a country, naturally. All fits well with the complexity and dynamics of the field of IPE.

The case study method is used widely in analyzing political and industrial decision making. Harvard Business School relies for example almost entirely on case studies in their teaching and largely also in their research.

The strengths of case studies relative to statistical methods in the field of IPE are several, but some severe weaknesses can also be identified. I take the strengths first, and then the weaknesses.

*First*, qualitative studies are equal or superior for *generating theory* that is valid for the issues to be studied. They give a more comprehensive and detailed description of the events and behavior among actors about which we wish to generalize. It also stimulates the development of concepts, typologies, and hypotheses.

The ultimate goal is valid theory for the issue to be studied, not just any theory. In this way case methods are also vehicles for refining established theory. A single case study of an event already analyzed can also uncover alternative views that force a rethinking of the received interpretation.

*Second*, case studies are generally better than the alternatives for *documenting processes*. The world political economy is marked by significant processes such as innovation, competition, equilibration, influence and bargaining, communication, conflicts, institutional change, regional integration and disintegration, and politics.

Statistical methods tend to bias theory away from processes and toward structures. Although structures are important, they alone are unable to explain much variation that occurs within the same structures.

*Third*, case methods allow stronger empirical grounding for the formulation of *propositions* and *hypotheses* for the cases studied. They allow greater confidence in the validity of these than statistical methods can provide for the same cases. Statistical methods restrict us to observing a limited part of an issue. We cannot see any of the facts that had to be omitted.

*Fourth*, a thorough case study preserves and reports additional *information* about a case better than a statistical study covering the same case. Fuller reporting makes it more likely that readers will construct alternative interpretations of the same events and generate new propositions and hypotheses. Reporting this information also provides researchers with materials that can be used later to construct quantitative indicators.

Even a case study that claims no explicit theoretical implications always conveys a much fuller understanding of the instance studied, with richer evidence and reasoning about process and context, than is possible with statistical methods. This is especially valuable for key events that turned the tide of history, blocked some possible future paths, and selected the one along which later events evolved.

Among the different case study designs, *comparative case studies* offer some additional advantages as compared with single case designs. Variation in the cause and the effect, plus the elimination of some competing interpretations by case selection, supplies more rigorous support for a causal hypothesis than most single case studies, or multiple case studies that have not been selected to control for competing interpretations.

On the other hand, case methods also entail several disadvantages relative to statistical methods.

*First*, a case could be atypical and *unsuited for generalization*; their representativeness is usually not known. A claim that the theory is valid in general cannot normally be considered established without having observed other cases.

*Second*, most case methods are weaker than statistical methods for *testing a theory*. When a case or set of cases suggests a new hypothesis, the same cases naturally cannot be regarded as an unbiased test of this idea.

*Third*, qualitative methods are *less precise* in their descriptions, claims about magnitudes of causal effects, and claims about the relative importance of different causes, than statistical methods. Vagueness is not a plus, other things being equal.

However, qualitative methods could be deployed with greater precision to repair for these weaknesses. Key concepts can be defined in an operational manner and ordinal scales for measuring their variations qualitatively can be made. They can even be set up in a table.

A process under study could, for instance, be divided conceptually into stages. A description of one case in this process, accomplished by coding that case with rules could contribute its method also to later studies on different cases. Greater precision would allow more convincing comparisons and contrasts across cases, and it would become possible to look for general patterns.

For many the problem is time and resources to do both qualitative and quantitative research. This comprises the balance between acquiring sufficient knowledge about the various methods as well as learning enough about the empirical characteristics of a special case. That is at least one reason why scholars often end up as been either “quantitative” or “qualitative”, each ending up to defend the position and language of its own tribe.

Disciplines offer “homes” and bases of different cultures and identities developed over time, often as competitors. Quantitative researchers tend to consider quantitative methods as more advanced, and criticize the qualitative ones to be loose and imprecise. Qualitative researchers tend on their side to criticize the quantitative ones as doing work outside the scope of the issue at hand, without proper inclusion of important subjective and unquantifiable factors and forces.

This conflict is in my view however artificial. The two groups of methods are complimentary, not alternatives. Empirical research in social science should be made with the help of both qualitative and quantitative methods, using more methods in interaction. Neither approach is as such superior to the other.

In an IPE research work the methodologies established in economics or political science can continue to be applied. But their combination needs a qualitative judgment, because, among other things, data are often incommensurable, whether it is done in a multi- or interdisciplinary way. This is a main reason why IPE studies often uses case methods at least as superstructure.

Qualitative case study methods offer appealing advantages, but also suffer from limitations relative to statistical methods. With many different types of factors to draw into the analyses, different types of mechanisms that in their turn interact with each other, a qualitative understanding of the situation appears as even more vital in interdisciplinary studies such as IPE than in unidisciplinary social research.

Thus, a mixture of qualitative and quantitative methods appears to be far more fruitful than relying on only one of them in either case. Combining the strengths of both approaches in *triangulation* can be proposed as valuable (even though it may appear as a demanding exercise).

If research is limited to only one method of enquiry, restrictions will be placed on the development of knowledge.