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Approaching "Relationality" from Economics

A Conceptualisation, Application and Discussion

David Stadelmann and Frederik Wild, 2025

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Institute of African Studies

Director: Prof. Dr. Gabriele Sommer
Vice-Director: Prof. Dr. Stefan Ouma

University of Bayreuth
Universitätsstr. 30
D-95440 Bayreuth

Phone: +49 (0)921 556902
www.ias.uni-bayreuth.de
IAS@uni-bayreuth.de

Africa Multiple *connects*

As the Working Paper publication series of the Africa Multiple Cluster of Excellence, **Africa Multiple *connects*** offers a forum for research conducted by researchers affiliated therewith. The series features diverse papers such as guests' lectures, workshop contributions, and conference papers.

The Africa Multiple Cluster of Excellence was established in January 2019 through the Excellence Strategy of the German Federal and State Governments. Building on the well-established programme of African Studies at the University of Bayreuth, the Cluster pursues an innovative agenda as expressed in its subtitle – *Reconfiguring African Studies*. It has almost hundred and sixty members, from three continents, who represent a diverse range of academic disciplines and cooperate with partner institutions in Africa, Europe, Asia, and the Americas. Our understanding of the reconfiguration of African Studies focuses on stimulating new theoretical approaches and the creation of new forms of interdisciplinary collaboration. In addition to the University of Bayreuth, the Cluster is made up of four further African Cluster Centres (ACCs): the Universities of Lagos (Nigeria), Joseph Ki-Zerbo (Burkina Faso), Moi (Kenya), and Rhodes (South Africa).

Our key concepts are *multiplicity, relationality,* and *reflexivity.* We employ them to capture the dynamic interrelationship of diversity and entanglement that characterize African and African diasporic ways of life and world-making. In the "Knowledge Lab", we connect our theoretical, epistemological, and methodological issues. Our "Digital Research Environment" integrates analogue and digital data into a common, digital research platform. Through the Bayreuth Academy of Advanced African Studies, the Cluster coordinates an international fellowship programme for junior and senior researchers, including artists. Bayreuth International Graduate School of African Studies (BIGSAS) offers research-oriented training for doctoral students.

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University of Bayreuth
Universitätsstr. 30
D-95440 Bayreuth

https://www.africamultiple.uni-bayreuth.de
africamultiple-international@uni-bayreuth.de

About the Authors

David Stadelmann studied Economics (MA/BA) and Mathematics (MSc/BSc) at the University of Fribourg (Switzerland), where he received his PhD in Economics and Social Sciences in 2010. Since 2013, he has been a professor at the University of Bayreuth (Germany). Prof. Stadelmann is a dedicated educator. He was a founding member of the DFG funded Cluster of Excellence EXC 2052/1 Africa Multiple. Prof. Stadelmann's research interests span political, public, and institutional economics, as well as growth, development, federalism, and global factor mobility. He has authored over 120 scientific publications in journals such as Nature Communications, Journal of Economic Behavior and Organization, British Journal of Political Science, Public Choice, and the Journal of Comparative Economics. In addition to academic publications, he communicates policy-relevant research findings in popular outlets including newspapers, blogs, and magazines, with over 250 contributions. He is a frequent speaker at international conferences worldwide and holds research fellowships at institutions such as CREMA (Center for Research in Economics, Management and the Arts, Switzerland), BEST (Centre for Behavioural Economics, Society and Technology, Australia), the Ostrom Workshop and Indiana University, and the IWP – Institut für Schweizer Wirtschaftspolitik (Switzerland). Prof. Stadelmann has received multiple awards, including the Reinhard Selten Prize from the German Economic Association, the Ludwig Erhard Prize from the Ludwig Erhard Foundation, and the Wissenschaftspreis from the Region of Vorarlberg. Since 2015, he has served as an editor of the peer-reviewed journal Kyklos – International Review for Social Sciences.

Frederik Wild is a postdoctoral researcher at Stanford University and the Heidelberg Institute of Global Health (HIGH). He earned his PhD in Economics from the University of Bayreuth and the Bayreuth International Graduate School of African Studies (BIGSAS). During his doctoral studies, Frederik served as a research associate for the MuDAIMa project ('Multiplicity in Decision-Making of Africa's Interacting Markets') within the Cluster of Excellence 'Africa Multiple' (EXC52), funded by the German Research Foundation (DFG). His research focuses on economic development in sub-Saharan Africa, with particular attention to education, health, and regional integration. Frederik's work has appeared in journals including the Journal of African Economies, the Review of Development Economics, and Economics Bulletin.

Abstract

In this essay, we offer an economics-rooted conceptualisation of the term "relationality". To achieve the fundamental purpose of economic analysis, we argue, it is useful to conceptualise "relationality" as a process of exploring links that explain outcomes. In alignment with the broad objective of economic research, our perspective on "relationality" sheds light on how it can aid in comprehending our world as is and how it came to be. We illustrate the power of our suggested conceptualisation of "relationality" via three specific empirical applications, including the analysis of regional economic integration in Africa. We also discuss the potential of our conceptualisation in "Reconfiguring African Studies".

JEL-codes: A11, A12, Z10

Keywords: Relationality, Economic Perspective, Associations, Causality, Causal Inference, Decision Making, Understanding Livelihoods, Improving Livelihoods, Reflexivity

CONTENTS

Approaching "Relationality" from Economics

A Conceptualisation, Application and Discussion*

David Stadelmann † and Frederik Wild ‡

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‡ University of Bayreuth (Germany). Email: david.stadelmann@uni-bayreuth.de. BEST-Centre for Behavioural Economics, Society and Technology, IREF - Institute for Research in Economic and Fiscal Issues, Ostrom Workshop at Indiana University, and CREMA - Center for Research in Economics, Management and the Arts.

†University of Bayreuth (Germany). Email : frederik.wild@uni-bayreuth.de. Stanford University (United States) and the HIGH - Heidelberg Institute of Global Health (Germany). Email: fwild@stanford.edu

1 Introduction

Typically for an area study as an interdisciplinary endeavour, African Studies in the Bayreuth based Cluster of Excellence Africa Multiple connects a range of academics from different disciplines, mainly from the humanities and social sciences. A central term of the Cluster's research program is "relationality", which is inherently linked to the other main conceptual terms of "multiplicity" and "reflexivity". Together, these three terms constitute the analytical foundation as well as the toolset with which the aims of the Cluster are to be approached. One specific purpose of these terms is to connect the heterogeneous fields of research as well as the diverse practices of scholarship in order to facilitate the larger aim of "reconfiguring" African Studies. However, it seems fair to say that the terms "relationality" as well as "multiplicity" and "reflexivity" can currently be considered as rather elusive concepts or ideas. Within the cluster, some consider "relationality" as an epistemological stance that views the world as consisting of relationships rather than standalone qualities or entities. While such rather abstract perspectives have their merits, we argue that a more tangible, or operational, conceptualization of the term is currently lacking.

We aim to provide one such conceptualization in this essay by approaching "relationality" from the economics discipline, i.e. offer an economics-rooted conceptualisation of it, as viewed by two economists. We will also exhibit the usefulness of our suggested conceptualisation via three distinct applications, including the analysis of regional economic integration in Africa. Regional integration efforts are arguable a typical topic for research programs like the Bayreuth based Cluster, area studies , where interdisciplinary research is highly relevant.[1] Apart from generating an understanding of "relationality" in understanding economic research, we further discuss how our approach may be considered useful for the multitude of fields contributing to African Studies in particular and to area studies more generally. We thereby also highlight the potential relevance of our conceptualisation in the process of "reconfiguring" African Studies.

A definition of a term such as "relationality" cannot be judged as right or wrong per se. Rather, definitions of terms or concepts such as these shall be purposeful, i.e. successful in fulfilling a specific aim or purpose. At a very fundamental level, the purpose of economics research is to understand aspects of human behaviour or human lives more generally, with the potential use to improve human lives and the world humans live in. Thus, from an economics point of view, a functional conceptualisation of "relationality" is rendered purposeful if it helps in understanding human lives and ultimately, in improving them. The present inquiry is therefore relevant if it succeeds to offer a purposeful definition or conceptualisation of "relationality" with regards to main research objective of economists.

The remainder of the essay is structured as follows: We start by providing an intuitive account of the purpose of economics as a social science in Section II. Section III suggests a conceptualisation of the term "relationality" argued to be consistent with the purpose of economic research and

[1] Our Cluster funded research project "MuDAIMa - Multiplicity in Decision-Making of Africa's Interacting Markets: The Functioning of Community Law, the Role of Market Participants and the Power of Regional Judges", specifically pertaining to Africas Regional Economic Communities (RECs), is a joint research effort with political scientists as well as scholars of legal studies.

possibly numerous other research endeavours. The section further illustrates the power of our conceptualisation along three distinct applications. Section IV offers concluding remarks.

2 Purposes of Economic Research

Economics as a field of the social sciences[2] is often defined as the study of the allocation of scarce resources among people (e.g. see Robbins 1935 for a classical contribution[3] or Krugman and Wells 2013 as well as McAfee et al. 2017 for contemporary accounts). Note that absent scarcity, there would be no significant allocation issue and, thus, most likely, no significance of economic research as such. Studying the allocation of scarce resources and the consequences thereof is naturally related to the behaviour and actions of interrelated agents both on an individual-, as well as on a collective level. Economic analysis thereby examines, among other issues, which goods and services are produced as well as questions on how they are distributed and consumed.

Intuitively, the study of economics might, in effect, be argued to serve two fundamental purposes: (1) *understanding* human lives and (2) *improving* human lives.

2.1 Positive Analysis

The first fundamental purpose, *understanding* human lives, can be seen as a positive analysis. It involves describing the "what is" is and investigates the potential drivers and mechanisms that have led to "what is".

A positive economic analysis might therefore try to understand how much people earn and how income is distributed (e.g. Mincer 1958 and the large literature in labour economics), how goods and services are consumed (e.g. Deaton 1992 and the large literature on consumption), or why inflation occurs and what its consequences are (e.g. Friedman 1977 and a large literature in monetary economics as a subfield of macroeconomics). As stated, understanding these processes necessarily means to engage in an inquiry of the underlying mechanisms and the potential drivers of them. Hence, economic analysis also includes the study of peoples' knowledge, opinions and preferences, among many other factors (e.g. Lusardi and Mitchell 2011 for aspects related to financial knowledge and financial literacy).

2.2 Normative Analysis

Identifying "what is" and understanding the underlying mechanisms can be quickly, and maybe even naturally, related to the capability of making predictions. Evidently, the ability to make reasonably accurate predictions is a first step towards the second purpose of economic research,

[2] In this essay, we hold the view that economics is a social science (e.g. Frey 1990). Note that there are also successful schools of thought arguing that economic theory is similar to engineering. Indeed, the 2020 Nobel Memorial Prize in Economic Sciences was awarded to Paul Milgrom and Robert Wilson for their pioneering work on auctions. Both award winners follow an approach to solving economic problems which resembles that of engineers. Most proponents of this approach would, however, not deny that the definition of what constitutes an economic problem is also an issue of the social sciences.

[3] Robbins (Robbins 1935; 16) notes that "Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses.".

that is, the purpose of *improving* human lives. Positive analysis thereby informs normative analyses.[4]

In economics, normative analyses are usually constituted of informed predictions about the effects of specific interventions, including an evaluation of their (social) desirability, i.e. regarding human well-being.[5] Under certain assumptions, having knowledge about value judgements of individuals may allow for an aggregation of these judgements in determining what might be socially beneficial or desirable. While it has been *proven* that a well-defined social welfare function does *not* exist under reasonable axioms (Arrow 1951), normative analysis in economics typically aims to provide an approach to evaluate the consequences of interventions based on some aggregation of individual preferences (e.g. Samuelson 1947). Evaluating such consequences has given rise to an entire field named "Public Economics" that investigates, among others, how government intervention might improve (or reduce) social welfare. Economic analysis also highlights the problems of trying to improve social welfare, which is often linked to issues regarding incentives of the institutional setup and in (political) decision-making (e.g. Frey and Stutzer 2010 for a discussion on why attempts to maximise aggregate happiness as a type of social welfare function is likely to be problematic).

2.3 Relevance of Decision-Making

Decision-makers such as politicians tend to be keenly interested in knowing how changes in factors such as institutions, laws, regulations, etc. influence scarcity, the allocation of resources as well as individual incentives. For instance, being cognisant of the observed relationship between individuals' education and income has led labour economists to explicitly model and predict individuals' earnings based on their levels of schooling (e.g. Mincer 1958 and the subsequent literature investigating returns to schooling). In turn, policymakers in democracies may regard these predictions carefully given that their electoral success depends on the approval of citizens, which is arguably connected to their earnings or their occupational prospects.

Ideally, it is not a seemingly objective expert (or policymaker) who suggests what might be (socially) desirable to others.[6] Rather, it can be argued that people themselves reveal what is important to them, granted that individuals' decisions may involve errors. This is why economists tend to have a keen interest in human decision-making, from which preferences and value judgments are potentially revealed and normative analysis further facilitated. Of course, human decision-making is constrained by natural, institutional, as well as social and personal circumstances, among other factors, and constraints themselves can be a product of human

[4] An interesting example for this is the field of Happiness Economics where variables related to individual life satisfaction are analysed (e.g. Frey and Stutzer 2002).

[5] For example, a petroleum tax harms buyers of petrol prima facie, given that they have to incur higher prices. However, if that tax is used to finance and to maintain highways, and if petrol buyers and drivers are (generally) the same people, a normative analysis may suggest that both profit, at least on average (e.g. McAfee et al. 2017 for further examples). Policies where everybody profits are usually rather uncontroversial.

[6] An expert might be seen as objective when performing a positive analysis in regard to what humans revealed to be important to them. Knowing what humans have revealed important helps to inform normative analyses. Interventions that are in the interest of all interested parties might then be reasonably judged as "improvements of human lives" leading to (conceptual) unanimity (e.g. Buchanan and Tullock 1962).

decision-making. For instance, institutions, as an example of a humanly devised constraint (e.g. North 1990), are generally an outcome of political (collective) decisions made by (a collective of) individuals.

Given the complex interplay of preferences and constraints that govern many of the observed phenomena in the world, economic research has been inspired by insights from the most diverse sources, disciplines and fields (e.g. Backhouse and Medema 2009). At the same time, economic analysis has branched out and now investigates and contributes to diverse subjects, as can be depicted from the commonly used Journal of Economic Literature classification system[7] – the so called JEL-codes – which include, for example, "Q42 - Alternative Energy Sources", "R14 - Land Use Patterns" as well as the "Z11 - Economics of the Arts and Literature".

In their endeavours, economists are often guided by pragmatic considerations. Hence, even if the analyses performed may seem highly technical in terms of the mathematical approach, mathematics mostly serves economists as a tool and, rather, is viewed to greatly facilitate intersubjective communication and to reduce potential misunderstandings. It requires formulating testable as well as refutable assumptions transparently, which is particularly relevant to normative analyses and a discussion thereof.

In sum, economics as a social science aims to *understand* the complex constitution of human lives as influenced by a multitude of underlying conditions, preferences, and constraints. It also informs normative analyses in an attempt to *improve* human lives.

3 An Economic Approach to Relationality

3.1 Conceptualising Relationality

As formulated in the previous chapter, we aim to understand human lives in a first step and to predict outcomes due to changes in factors which underlie the former in the second step. Ultimately, this approach has the potential to improve human lives. From these purposes, a functional conceptualisation of "relationality" follows naturally: We conceptualise it as *the process of exploring links that explain outcomes*.

It is useful to use some simple mathematical notation to better understand our proposed conceptualisation, which, as noted previously, helps in facilitating intersubjective understanding and in highlighting our conceptualisation more transparently. Call y our variable proxying the outcome of interest (e.g. individual life satisfaction, the level of inflation, the level of production, whether a country joins a Regional Economic Community, etc.). We may then relate y, say individual life satisfaction, to potential explanatory factors X_1 which could be age, X_2 which could be sex, X_3 which could represent another personal characteristic, X_4 which could reflect institutional constraints such as the rule of law in a given country, X_5 which could reflect environmental factors such as temperature, etc. The choice of X_i can be informed by theoretical

[7] For the Journal of Economic Literature Classification System see, for example, https://www.aeaweb.org/econlit/jelCodes.php (accessed April 28, 2022).

reasoning, past evidence, common sense, or creative hypotheses of the researcher. The process of exploring links that explain outcomes would thereby imply establishing a model such as

$$y = f(X_1, X_2, \ldots, X_i, \ldots)$$

where f is a function that stipulates the presumed relationship between the outcome y and all explanatory factors X_1, X_2, etc. Evidently, like the choice of X_i, theoretical modelling might try to stipulate f based on preceding empirical evidence or other informed priors. Thus, "relationality", according to our suggested conceptualisation, could be seen as the process of choosing X_i and stipulating f. In other words, "relationality" from an economics point of view entails theorising, examining and, subsequently, re-configuring the understanding of specific phenomena, because they are inherently envisioned as products of interconnected factors.[8]

Formal models such as these thereby apply logical reasoning as well as past evidence to deduce certain relationships and to stipulate new, unexplored ones. The task of empirical economic research is then to test these presumed relationships via, for example, qualitative or quantitative analysis using econometric techniques (e.g. Wooldridge 2019 regarding the large scope of modern econometrics). The expression of a relationship might be of "qualitative" nature, that is, indicating whether there is a positive, negative or no link between X_i and y. The expression might also be "quantitative", that is, indicating whether the link between X_i and y is comparatively strong or weak with respect to other variables or whether it explains a relevant amount of the variation of the outcome.

There are several notes to be made regarding the proposed conceptualisation:

- The process of exploring links is not limited to the exploration of whether such links exist. In fact, it is equally relevant to explore the existence of a relationship as it is to assess its absolute or relative importance with respect to the outcome or other influencing factors, respectively. Literally, thousands of constraints or incentives will matter for how decisions are made and how outcomes come about. However, not all links will usually be of equal importance. Similarly, not all links will offer similar explanatory power. Some relationships may be comparatively weak, while others may be strong.

- Exploring links on how decisions are made and on how outcomes can be explained does not yet lay claim to the *causality* of the observed relationship. Evidently, identifying causal relationships is important when trying to explore mechanisms of how outcomes come about. Establishing causal effects and mechanisms from observations of the world usually requires making additional assumptions. For example, credibly causal predictions usually require that certain side conditions remain constant.[9]

[8] Note that the terms "links", "relationships" or "interconnections" are regarded as synonymous.

[9] In the last decades, substantial advances have been made in the ability to conduct "causal inference" via empirical economic research. We refer to the prominent works on "natural experiments" by Joshua D. Angrist, David Card and Guido W. Imbens for which they were awarded the 2021 Nobel Memorial Prize in Economics. These advancements tend

- Inherent to the process of exploring links is the attempt to observe the decisions of humans and the outcomes of their decisions. These observations are often selective and can be biased. To fulfil the purpose of economic research, the exploration of links must try to avoid biases as best as possible and to give an estimate of the relevance of a remaining bias. Indeed, explicitly integrating a probability of error or misattribution, that is, an estimate of how likely it is that links are wrongly attributed is central to the process of exploring links.

- Even if causal links have been credibly established and prediction is likely to work accurately, we must be aware that humans observe, learn and react to information and incentives. Thus, it is reasonable to assume that humans may integrate past predictions of human behaviour in their own (future) behaviour.[10] This implies that the process of exploring links may influence the (established) links themselves. Such "feedback loops" may be viewed as a special form of "reflexivity". From an economics point of view, the Cluster's concepts of "relationality" and "reflexivity" are thereby inherently linked.

3.2 Applications

We demonstrate the practical value of our proposed conceptualisation of "relationality" via three distinct applications related to our Cluster Project "MuDAIMa - Multiplicity in Decision-Making of Africa's Interacting Markets: The Functioning of Community Law, the Role of Market Participants and the Power of Regional Judges", which combines economics, law, and political science to investigate the decision-making and living standards in Africa's interacting markets. Specifically, we use our conceptualisation to explore the ways in which the various links related to our project can be examined, and thereby demonstrate our conceptualisations' instrumental, or *operational* value, particularly in understanding socio-economic livelihoods in Africa. This includes the link between external (first-nature) factors such as temperatures and socio-economic welfare, or even, household's geographic proximity to trading opportunities as given by harbours, as well as the analysis of human (second-nature) interactions such as trade, as envisioned at the core of the MuDAIMa project.

Application 1: *Temperature and socio-economic welfare*

Suppose we are interested in the link between rising temperatures and welfare in African countries (e.g. Baako-Amponsah et al. 2025)[11]. A reason for our interest might be to better understand the future impact of climatic developments and climate change in particular,

to be recognized by decision-makers and international organizations. Interestingly, some area studies such as Eastern European Studies or China Studies have also seen a move towards using these methods.

[10] For instance, if humans had reacted to inflation in a way which models have predicted past occurrences, this would not necessarily imply that these predictions also hold for future cases. Humans in general, and financial market participants in particular, may integrate predictions about behaviour and other information rationally such that previously established relationships may not hold anymore (e.g. the Lucas 1976 critique regarding macroeconomic policymaking argues that it would be naïve to predict the effects of a change in economic policy solely on relationships from past observations).

[11] Baako-Amponsah, Josephine, David Stadelmann, and Frederik Wild. 2025. "Whether it's Weather or Climate: The Link between Temperatures and Deprivation in Sub-Saharan Africa", mimeo, University of Bayreuth.

especially for poorer countries where people may not have the financial capacity to protect themselves from the expected negative consequences. Global surface temperatures have risen (on average) 1.09°C higher during the last decade (2011–2020) compared, for instance, to the period between 1850–1900 (IPCC 2021: SPM-5). As averages hide the variation of temperature changes by construction, some countries have evidently experienced substantially larger increases in temperatures than others. From our postulated conceptualisation of "relationality", exploring such a link requires a general understanding of temperature's influences on past and present living conditions. It may then help in predicting the direct welfare consequences of global warming in the future, i.e. improve human lives.

Given that standards of living have been closely linked to production (e.g. Mankiw 2012 who outlines ten specific principles of economics)[12], economists often use countries' gross domestic product per capita (GDP per capita) to measure welfare at the national level. We, therefore, start the exploration of this link by defining GDP per capita as our outcome of interest, y. Consequently, we gather available data on GDP per capita over a selected period of time, say from 1950 onwards, such that one country observed in one specific year constitutes a single observation. We then match this information with measures of the, e.g., average temperatures for the selected countries for each year (X_1). Note that we would naturally include other influencing variables (X_i) which presumably affect the link between GDP and temperature, such as precipitation (X_2) or latitude (X_3), to isolate the pure effect stemming from temperatures. From there, we investigate the stipulated model f by the following simple (linear) relationship

$$GDP\ per\ capita = \beta_1 Temperature + \boldsymbol{X\beta} + \varepsilon.$$

In this formulation, a country's GDP per capita is a linear function of its observed temperature and a vector $\boldsymbol{X}$, which includes further influencing variables such as the ones just described.[13] Our main coefficient of interest is given by β_1 which quantifies the (strength of the) relationship between countries' temperatures and GDP per capita. ε is an error term which explicitly acknowledges that the model cannot capture the entirety of what influences countries' GDP per capita. Note that the omission of other potential influences on countries' GDP, which have to be captured by the error term ε, be it because of data availability, is unproblematic for the interpretation of β_1 as long these influences are independent of β_1, that is, independent of countries' temperature.[14]

Employing this proposed equation in a regression framework, that is, applying an appropriate estimation technique to the data, the relevance of the postulated relationship will be given by the respective coefficient β_1. This would allow us to say whether, under the set of specific assumptions

[12] Economic output and growth, as measured by GDP, has been associated with improvements in various indicators of human development and well-being, such as higher life expectancy, lower child mortality and lower malnutrition (Deaton 2013; Weil 2013).

[13] This type of setup already resembles the one used in contemporary contributions such as Burke et al. (2015) who employ a dataset spanning much of the world. Greßer et al. (2021) apply a similar approach to subnational (regional) data. A major difference to the simple setup above is that these authors apply so-called fixed-effects strategies, including other controls, among other refined empirical/econometric techniques.

[14] Of course, in practice, this assumption is a strong one to make.

of the chosen estimation method, there is a link between temperature and GDP per capita for the countries included in the sample and the period analysed. As outlined above, an estimate of β_1, particularly the coefficient's size and its statistical significance, also allows us to make a statement regarding the relevance as well as the strength of the proposed relationship. As we want to understand "what is", we are open to hypotheses contrary to our priors. Hence, although our prior belief might be that $\beta_1 < 0$, that is, higher temperatures are associated with lower GDP per capita, our methodological implementation is generally performed in a way such that our prior beliefs do not matter. Indeed, if we chose a very standard estimation method such as Ordinary Least Squares, we might find that $\beta_1 < 0$, $\beta_1 > 0$ as well as $\beta_1 \approx 0$.

Note, however, as addressed in the previous section, we must be careful about making *causal* claims from the observed relationship and the estimate of β_1. Several assumptions are required to establish causality. It depends, among other factors, on the "trueness" of the underlying functional form of a model f (we assumed a linear function for this illustration), or on the measurability and the completeness of relevant control variables (for instance, there may be a so-called "omitted variable bias", i.e. unmeasured/unincluded influences that moderate and actually define the relationship between GDP per capita and temperature). Moreover, it has been documented that GDP data can be prone to (substantial) measurement errors.[15] Our sample of observations (we imagined using African countries for this illustration) may therefore suffer from systematic measurement error or even manipulation, which affects the robustness of established empirical links (e.g. Martinez 2022).

Application 2: *Coastal proximity and individual living standards*

Both economic theory and empirical evidence suggest that trade increases growth (e.g. Frankel and Romer 1999). Given that harbours act as facilitators of trade, a reasonable as well as a testable hypothesis based on these (theoretic) priors is to assume a relationship between individuals' distance to harbours and their standards of living. Being aware of the measurement issues just discussed, as well as the potentially omitted, moderating factors such as national institutions, a natural extension to using aggregate data (such as GDP in Application 1) is to use more dis-aggregated data, e.g. self-reported indicators of income or poverty from representative household surveys. This is precisely what we do in a recent article in which we investigate household-level data of 128,609 respondents living in 11,261 localities across 17 coastal sub-Saharan African countries (Wild and Stadelmann 2022).

To exemplify, suppose we assume a linear link (for simplicity) between our outcome of interest, in this instance, households' self-reported frequency of having gone without cash income

[15] Recently, data on comparable GDP measures has been shown to be prone to misreporting, particularly in developing economies. For instance, Johnson et al. (2013) compares two versions of the Penn World Tables (PWT) which provide comparable GDP data across countries. The authors highlight that results based on higher frequency data are not necessarily robust to different versions of the PWT. In general, measurement, estimation and comparison of GDP is constantly being improved (e.g. Feenstra et al. 2015 regarding the PWT).

(monetary droughts), and the explanatory factor, proximity to the nearest major harbour.[16] We thereby investigate

$$Gone\ without\ Cash\ Income = \beta_1 Distance\ to\ Harbour +$$

$$\beta_2 Age + \beta_3 Sex + \beta_4 Education + \cdots + \varepsilon.$$

A $\beta_1 > 0$ indicates a higher occurrence of monetary droughts for households living further away from harbours, supporting existing theory, and allows us to interpret our observation as suggestive evidence for the positive influence of trade-related factors on individual living standards. Again, the example shows that we must necessarily take into account variables that are potentially correlated with our analysed relationship, such as $\beta_2 Age$, $\beta_3 Sex$, or $\beta_4 Education$. I.e. factors that could be correlated with distance to harbours as well as their experience of monetary droughts. In other words, by stipulating a function *f*, it is reasonable to expect that living standards are not only affected by a single variable but rather by multiple, interrelated variables at the same time. Some of these variables, such as education, may even directly mediate the relationship between coastal proximity and individual living standards Note that this can be related to the concept of "modalities", one of the four heuristic angles of the Cluster, given that the effect of coastal distance, i.e. the effect of one's geographic position within a country on living standards, may inherently, or even solely, depend on its interaction with one of such "third factors" which ultimately mediate the effect on individuals' living standards (see Wild and Stadelmann 2022).

Application 3: *Regional market integration and household welfare*
As a final example of our conceptualisation of "relationality", we provide an illustration of a current work-in-progress in which we aim to move beyond the investigation of links and try to establish a credibly *causal* relationship. Establishing causal effects is highly appealing, of course, because they are more suitable for making predictions than mere associations.

The process of establishing causal effects in empirical economic research requires the identification of a proper empirical setting. This often involves the analysis of exogenous shocks such that the analysis performed depends on comparatively few defendable side-conditions and assumptions.[17] One prominent methodological approach is the so-called difference-in-differences method, which, in the most general case, compares two specific units (e.g. countries, states or individuals), as a first difference, over two specific periods of time, as the second difference. The difference-in-differences method is often implemented to investigate the effects of specific policy changes, whereby only one of the observed units is "treated", that is, one unit implements a policy change such as minimum wage, a change in tax rates, etc. From a slightly technical standpoint, the fundamental assumption underlying this analysis is that absent policy change, the two units would have followed "in parallel", i.e. their trajectories regarding observed outcomes would have remained consistent with the patterns observed prior to the policy implementation.

[16] Wild and Stadelmann (Wild and Stadelmann 2022) use the Afrobarometer's geo-referenced datasets (BenYishay et al. 2017; Afrobarometer 2019) and create a continuous variable measuring individuals' geodesic (ellipsoidal) within-country distance to the nearest major harbour.

[17] Angrist and Pischke (2015) provide a comparatively intuitive introduction to modern methods of causal inference.

Correspondingly, deviations from this anticipated trajectory are then plausibly attributed to the investigated policy change, which constitutes the difference-in-differences estimate.

In our specific application, we treat the re-establishment of the East African Community (EAC) in 2001 as a regional policy intervention which had differential effects on individual households depending on their geospatial location within the countries (see Eberhard-Ruiz and Moradi 2019; Wild 2024[18]). Again, recent advances in theoretical as well as empirical economic literature inform our priors on how we may model the relationship between trade liberalisation and household welfare, that is, how we stipulate *f.* While trade liberalisation has been shown to increase countries' economic growth in the aggregate (e.g. Frankel and Romer 1999), there can be substantial variation in the distribution of benefits within countries, particularly across regions and households (Brülhart 2011; Pavcnik 2017). Suppose then, that we aim to investigate the hypothesis that households living closer to internal EAC borders profit more intensely from regional economic integration; a theoretical result for which evidence has been provided in both developed (e.g. Brülhart et al. 2012) and in developing settings (e.g. Hanson 1994, 1997). A potential (difference-in-differences) formulation of the link between the re-establishment of the EAC and monetary droughts as an indicator of economic well-being (see Application 2) is then

$$Gone\ without\ Cash\ Income = \alpha + \beta_1 Distance\ to\ EAC\ Border + \beta_2 Observed\ after\ the\ EAC +$$

$$\beta_3 (Distance\ to\ EAC\ Border * Observed\ after\ the\ EAC) + \cdots + \varepsilon.$$

Here, β_3 captures the moderating relationship between distance to internal EAC Borders and the EAC's re-enactment, that is, it captures the differential change in economic outcomes of households (e.g. occurrence of monetary droughts) over time (before and after the establishment of the EAC) for households living further away from internal EAC borders compared to those living closer to them. A positive difference-in-differences estimate, $\beta_3 > 0$, suggests increasingly negative welfare effects (a higher occurrence of monetary droughts) after the re-establishment of the EAC for households living further away from internal EAC Borders than for households closer to them. As such, if we presume an increasing exposure to a trade shock for households living closer to the border, as our priors, β_3 represents the pure effect of a trade agreement on households such as the EAC. The key assumption behind this causal claim is that nothing *but the re-establishment of the EAC* influenced the difference in welfare outcomes (e.g. monetary droughts) between households living closer and households living more remote to internal EAC borders (first difference) before and after 2001 (second difference). Exploring such a relationship places specific demands on the data, such as the availability of geo-referenced household surveys conducted before and after the establishment of the EAC, that is, before and after 2001.

In this specific example, our conceptualisation of "relationality" is key not only in stipulating the proposed link between regional economic integration and household welfare but also in empirically identifying a credibly causal effect. In other words, not only does the relative position of a household to internal EAC Borders matter, but also its relative position to other households

[18] Wild, Frederik. 2024. Development in Sub-Saharan Africa: New Micro-Level Evidence on Education, Geography, and Trade. PhD dissertation, University of Bayreuth. https://epub.uni-bayreuth.de/id/eprint/7682/.

and the comparison of these relationships over time.[19] Deliberative processes such as these adequately encapsulate what our economics-rooted conceptualisation of "relationality" requires and what it means in practice. We are now precisely in the process of *exploring links that explain outcomes*. As can be seen, such an investigation of links is regularly concerned with the untangling of a complex web of potential links between the outcomes and the underlying mechanism which also means to incorporate further aspects relating to these phenomena such as space and time in order to respect the multifaceted nature of the phenomena under study. Evidently, it is practically impossible to consider all expected and actual influencing circumstances, which further highlights the relevance of systematically thinking about potential errors and the necessity of a clear statement of assumptions when exploring such relationships.

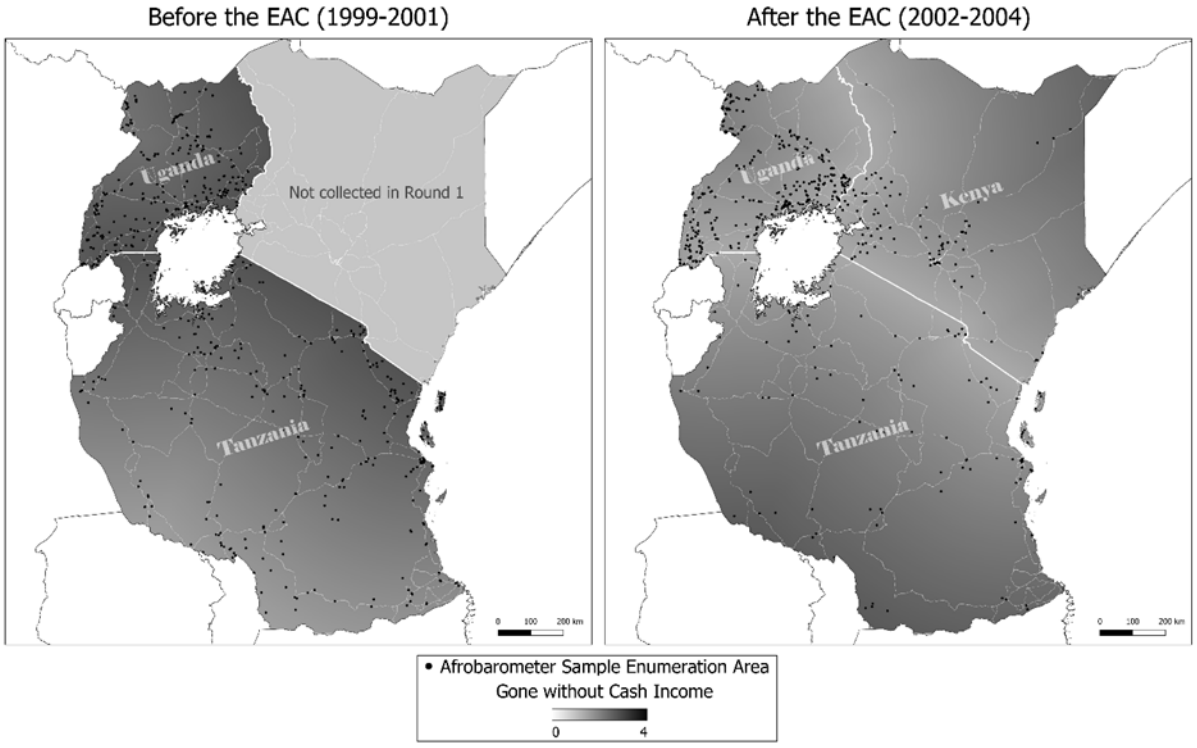

Figure 1: Regional market integration and household welfare in the EAC

Notes: Own illustration using the Afrobarometer datasets of Round 1 and 2.

[19] Note also that when considering this application, our conceptualization of "relationality" can be argued to integrate and reflect aspects of the Cluster's heuristic angles of "modalities", that is, by the way in which the observed households and individuals relate, as well as "spatialities" and "temporalities", that is the spatial and temporal aspects which determine the phenomena observed.

Figure 1 provides a schematic illustration of Application 3.[20] It depicts a potential prediction made from a difference-in-differences estimate analysing the geospatial response of household welfare before and after the EAC. The shading of the maps in Figure 1 serves to illustrate a prediction of a y, "gone without cash income" (monetary droughts), across space (i.e. across distance) with darker levels indicating a higher incidence of monetary droughts. The left panel of Figure 1 displays absolute levels of having gone without cash income before the establishment of the EAC, the right panel illustrates the *change* of this reported outcome in surveys conducted after the EAC was established, brighter levels of shade representing larger reductions in monetary droughts than darker levels of shade. Such a prediction could be made by using data sampled in rounds 1 and 2 of the Afrobarometer's geo-referenced household surveys (depicted as dark coloured dots), which were conducted closely before and closely after the re-establishment of the EAC (BenYishay et al. 2017; Afrobarometer 2019). Note that Kenya was not sampled in survey round 1 of the Afrobarometer, which is why we don't illustrate survey enumeration areas in the left panel of Figure 1 for Kenya.

As depicted in the left panel of Figure 1, in this stylised example, households living closer to internal EAC borders are estimated to report monetary droughts as more frequent (darker shading) before the EAC. This is consistent with $\beta_1 < 0$. Note, however, that this relationship is altered as can be depicted the right panel of Figure 1, which suggests a relative decrease in the occurrence of monetary droughts for households living closer to EAC borders compared to those living further from them after the establishment of the EAC.[21] Note that a difference-in-differences estimate $\beta_3 > 0$ would represent the direct quantification of such a depicted change, and a $\beta_3 > 0$ which also satisfies $|\beta_3| > |\beta_1|$ would indicate a complete reversal of the pattern observed before the EAC (in the left panel), as it would estimate a difference in the effect of distance to borders between survey rounds 1 and 2 that is larger than the estimated effect of distance before the EAC (β_1). Note that any estimated $\beta_3 > 0$ for which $|\beta_3| > |\beta_1|$ is not satisfied would still imply a positive effect of the re-establishment of the EAC on households although not leading to a reversal in the sign of the combined distance coefficient after the EAC ($\beta_1 + \beta_3$). While the intuition behind the application is comparatively easy, implementing a reliable difference-in-differences estimate is challenging in practice and requires careful analysis.

3.3 Discussion

We argue that our suggested conceptualisation of "relationality" is *purposeful* in describing the fundamental process and purpose of economic research, as is exemplified by the above applications. *The process of exploring links that explain outcomes* is therefore relevant for understanding the world, i.e. the "what is", as well as in trying to improve the world by understanding how it came to "what is". In the process of establishing links, systematic reflection

[20] Note that this is an example for the purpose of illustration of this specific application, only. That is, the values depicted in the illustration are not based on estimation results. Rather, it is a stylised illustration which aims to aid the understanding of this application.

[21] To facilitate the interpretation of the difference-in-differences estimate, the prediction disregards the actual level of the reported outcomes at localities such that only the gradient of the shading should be interpreted rather than the actual level of the tone. Note also that important controls such as an indicator of living close to capital cities (which would result in areas around capital cities to be shaded "brighter") are intentionally missing from this stylised example for simplicity.

must be put into how *f* is stipulated. A large reservoir of established empirical and theoretical methods and other findings help to identify a potentially suitable *f*. As seen, the process requires to transparently state, justify and defend the assumptions made in the research endeavour.[22] While they can be seen as reasonable when judged by others, they necessarily remain refutable assumptions.

It is noteworthy that applied at the individual level, our proposed conceptualisation of "relationality" has the potential of taking account of aspects of intersectionality. Intersectionality commonly aims at understanding how different aspects of individual characteristics, views or identities matter to create different modes of discrimination (Runyan 2018). To see this, choose an indicator of discrimination at the individual level as y. Then investigate variables like sex, gender, age, skin colour, etc. as different X_i. Thereby, discrimination can be modelled by multiple variables (influences) at once instead of looking at them in isolation.[23] Moreover, their absolute as well as relative importance can be analysed, going beyond a qualitative analytic framework. It is also noteworthy that economic research has long been interested in discrimination for equity and efficiency reasons (e.g. Stiglitz 1973; Becker 1995), and suggestions for reducing discrimination have been drawn from such research.

When thinking about establishing links, errors need to be explicitly acknowledged. Even if a researcher holds a fully deterministic view of the world, the number of side conditions (reflected, among others, by the X_i) in the real world is practically too high such that errors will inherently be part of the modelled relationship. Our conceptualisation of "relationality", therefore, requires thinking about errors in the postulated relationship and, ideally, thinking about how much of the stated link could be due to errors. In this regard, *self*-reflexivity is a key part of "relationality" conceptualised as an analysis of links that explain outcomes. It is clear that the values of researchers also matter in the arts and science of economics, as in any other field (e.g. Van Dalen 2019), such that the choice of f, X_i and the research question itself may depend on values, too. To some extent, we would argue that competition among researchers for the best methods (the best f and the best way of accounting for X_i) to describe the world as accurately as possible and to make as correct predictions as possible is a relatively good way of reducing potential biases linked to researchers' values and in achieving largely accurate results (see also Stadelmann and Gottal 2019).[24]

Lastly, when trying to understand, and especially when trying to predict human behaviour, one must consider that humans react upon information, that is, they are knowledgeable, and that established knowledge may affect the human decision-making process, in turn. Thus, the process of establishing links may alter the links that have been previously discovered themselves. As an example, think of stock market traders: They incorporate specific models and predictions based

[22] The process of stipulating *f* also involves to present working papers (work-in-progress) to peers even at early project stages.

[23] Modelling interactions, that is, multiplicative relations between, for example, age and sex, would allow to consider further heterogeneities.

[24] From our own interdisciplinary research experience, we would argue that researchers from different disciplines competing to improve our understanding will tend to uncover similar links, at least in the long-term.

on them in their forecasts. The incentive for stock market traders to do so is clear, as a correct prediction of stock market movements offers large profit opportunities. However, by incorporating models and predictions into their choices, they could actively alter these previously established links. The integration of models in the decision-making process thereby figures "relationality" as the process of exploring and anticipating links which may itself influence the established links. Seen as a manifestation of reflexivity, this is a challenging problem in practising economic research. Conceptually, one way to think of bringing together this type of "reflexivity" with "relationality" might be to stipulate $y = f(X_1, X_2, \dots, y)$ where the observation of an outcome depends on the outcome (or the expectation of the outcome) itself.

3.4 Contributing to "Reconfiguring African Studies"

If "configuration" refers to the specific arrangement of the components in a particular system, a "reconfiguration" will refer to a change of the arrangement of this same system. Applying this view to African Studies might imply that the way of performing research is changed while the main purpose of the research endeavour itself remains.

African Studies is often seen as the study of Africa, including its demography, religions, politics, economy, and languages, among others. As economists, we believe that at least some of the purpose of African Studies lies in understanding the manifold ways of human lives as well as human livelihoods of the African continent. *The process of exploring links that explain outcomes* may often require specific cultural, historical, and institutional knowledge.[25] Hence, our conceptualisation of "relationality" can be an appealing view in bringing together researchers from diverse disciplines. We suggest viewing a "reconfiguration" as the continuing process of thinking about the multitude of these interrelated factors and the continuing change of knowledge regarding these established links when investigating Africa. Indeed, the dynamic and multifaceted nature of various phenomena may necessitate an ongoing process of reconfiguration to account for new and evolving understandings. We suppose this view is also an appealing endeavour for many other individuals, not only academics.

Our conceptualisation of "relationality" therefore explicitly seeks to develop and empirically support theories that may allow drawing connections across different areas and fields. At the same time, it is also consistent with views that aim to develop contextualised knowledge of Africa in a joint effort between social scientists and humanists. Consequently, while the central purpose of economic research with a focus on Africa would be to understand human livelihoods of the region, if the process of exploring links allows deriving general mechanisms that are likely to hold elsewhere, so much the better. If, by contrast, the external validity of results across geographic areas is not assured, this is not necessarily important for the people in the region. Put differently,

[25] Our application regarding regional economic integration and household welfare provides a case in point: The general expectation of international donors would be that Regional Economic Communities such as the East African Community increase trade and thereby also improve living standards. While this is generally supported for aggregate indicators, not everyone will benefit (to the same extent) and this may have to do with other economic or non-economic reasons and preconditions, stemming from historical, political, institutional as well as legal contexts. Addressing questions in context such as the EAC therefore requires a joint research effort together with political scientists and legal scholars, among others.

while our aim may be to uncover universal relationships and mechanisms, insights that apply, for instance, in a specific setting in Africa only, are, of course, still valuable for the people living there.

Economics, and nowadays also relevant parts of political science, as well as some parts of sociology, often tend to follow rational choice theory. According to our own perceptions, some scholars of African Studies seem to perceive the rise of rational choice theory as a potential threat. This need not be the case. If, without any specific input with regard to history, culture, and institutions, among other factors, rational choice theory could accurately predict, for example, the behaviour of politicians, firms or individuals, then contextualised information would no longer be necessary, at least in making predictions. In other words, the "what is" is explained, and predictions can be accurately made. However, it is highly unlikely that this will be the case in many settings or circumstances. Thus, the inclusion of contextualised information will generally greatly improve the predictive capacity. From that point of view, our conceptualisation of "relationality" is inclusive of various different disciplines, viewpoints and researchers, which is particularly relevant in "reconfiguring".

Some scholars active in African Studies interrogate current epistemological approaches and theories by trying to insert what may be viewed as African-centred ways of thinking. As exhibited, our view is pragmatic such that Africa is placed as neither exotic nor exceptional or banal: If alternative epistemological approaches help in explaining the world and, in particular, African livelihoods better than current approaches, then these approaches are precisely the ones which are likely to be quickly embraced.

4 Conclusion

At a very fundamental level, the purpose of economic research may be viewed as understanding *human lives.* The complexity of this task requires careful consideration of a multitude of aspects which influence human lives and human action. Such aspects include, among others, the historical, geographical, political and cultural background linked to the phenomena under study.

We conceptualise "relationality" as *the process of exploring links that explain outcomes*. We argue that this conceptualization inherently acknowledges the complexity of research of the social sciences in general, and in economics in particular. We thereby view "relationality" not as an abstract concept, but as a fundamental perspective of the economics science and as lived practice in contemporary economic research, where one must continuously try to untangle a complex web of interrelated influences.

Our exposition of three distinct applications illustrates how our conceptualisation of "relationality" is conducted in practice. We saw, for instance, that an approach aimed at understanding (causal) relationships, such as the trade-welfare nexus, necessarily involves the recognition and formal conceptualisation of spatial as well as temporal aspects, among other factors. "Relationality" in our conceptualisation will therefore naturally require engaging with a broad set of methods and results of different disciplines, including, but not limited to, other social sciences.

Therefore, "relationality" from an economics point of view is specific enough to facilitate the attention on context-specific relations, while also capable of establishing universal relations. Seen as such, we argue that our approach and conceptualisation of "relationality" directly contributes to the aims of the Bayreuth based Cluster of Excellence *Africa Multiple* in "reconfiguring" African Studies.

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