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# **Research in Development Studies: Philosophy, Methods and Rigor<sup>1</sup>**

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## Abstract

A better understanding of the role, epistemology and methodology of research are very important to generate evidence to strengthen development policies to improve development outcomes. This essay will discuss the philosophy and operationalisation of research in the development arena with the focus on the role of applied research, epistemological issues and boundary setting, the choice of research methods, and conceptualisation of rigour in development research.

Keyword: Epistemology, Research boundaries, Research Methods, Development Studies.

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## **Introduction**

There is considerable debate on the definition, explanation and practice of development. From the Second World War to the end of the 1960s, development had been being seen as a process of industrialisation and modernisation oriented solely towards economic growth from rational management perspectives. By the late 1960s, the meaning of development had been reformulated because of the failure of these earlier strategies to include a greater variety of variables encompass people's capabilities and choices (human development) as well as the structures, administration, regulations, policies, and social-economic systems to accelerate economic growth (Turner and Hulme, 1997; Sumner and Tribe, 2008a; Pieterse, 2010).

Court and Young (2003) argue that accelerating the progress of development to achieve development goals requires appropriate policies, but the policymakers are frequently unable to identify suitable policies for specific contexts and settings. It arguably that development failures are not only caused by inappropriate policies, but also by poor management and administration of state institutions (Turner and Hulme, 1997; Pieterse, 2010), non-satisfactory result of development aid (Easterly, 2006), and also endogenous and social factors such as conflicts (Collier et al, 2003).

Because of the complexity of development, Sumner and Tribe (2008b) try to elaborate the discussion of a study of development in a broader perspective, not only focus on the Third World but also the analysis of socio-economic change in higher-income countries which are still developing. To deal with inappropriate development policy and the risk of development failure, Court and Young (2003) and Sumner and Tribe (2008a) acknowledge the importance of a better understanding of the role, epistemology and methodology of research to generate evidence to strengthen development policies to improve development outcomes.

This paper will discuss the philosophy and operationalisation of research in the development arena with the focus on the role of applied research, epistemological issues and boundary setting, the choice of research methods, and conceptualisation of rigour in development research.

## **Roles of applied research in development arenas**

Evidence and findings from previous research usually influence design, monitoring and evaluation of development policies. Development research is a common interest among researchers who are doing research to create and generate evidence, and policymakers who use the research evidence to design development policies (Court and Young, 2003; Sumner and Tribe, 2008a; Thomas, 1998). According to Weiss (1979), research can be utilised to accelerate knowledge creation, to find answers to solve policy problems, to be a source of interactive and collective processes in decision making, to be ingredients for political debates, and policy negotiations, and to influence policy and provide intellectual benefits to society. Court and Young (2003) and Sumner and Tribe (2008a) also point out that the role of development research is to provide solutions to development problems, to support monitoring and evaluation, and to influence development policies for achieving better development outcomes.

Sumner and Tribe (2008) propose a typology of development research based on methodological perspectives. They distinguish three types of development research as by basic research, applied research, and routine research. Basic research focuses on fundamental aspects of methodology, applied research focuses on the application of research principles to generate evidence to answer policy questions, and routine research is related to routine monitoring and evaluation of projects, programmes and policies. In real settings, those aspects of methodology complement each other. According to Sumner and Tribe (2008), development policy is largely based on the findings from applied research without changing or modifying the methodology. Moreover, monitoring and evaluating development policy also utilise the results of applied research as a data source as well as an additional data source from additional primary data collection if necessary. To increase the appropriateness of the applied research methodology for development studies, some basic research is conducted to improve the applied research methodology to provide more appropriate ways to generate evidence to support development policy formulation.

## **Epistemological issues and boundary setting in development research**

Crotty (1998) identifies two questions to be answered by researchers before starting to design research. The first question is what are the methodologies and methods that will be used, and the second is what are the justifications for the choice and use of the methodologies. Crotty proposes identifying the epistemology and philosophical stance as a basic argument for the selection of the methodology, providing the logic of the research process, and guiding the analysis. Sumner and Tribe define epistemology as “the branch of philosophy that is concerned with the nature, origin, scope of knowledge and ‘how we know what we know’” (Sumner and Tribe, 2004:3). Crotty (1998) explains that epistemology is important to provide a philosophical foundation to decide what knowledge is possible and how to ensure the knowledge is both adequate and legitimate.

Ontology is a philosophical argument of ‘being’ and concerns of what actually does exist and what the nature of reality is. Ontology reflects a set of basic assumptions about associations between realities (Sumner and Tribe, 2004; Sumner and Tribe, 2008a). Chambers (2010) proposes two ontological paradigms. The first is a paradigm of things, which is ordered and predictable (in-principle), and the second is a paradigm of people, which is unordered and unpredictable. Ontological and epistemological issues are likely to be mutually interacted within a research framework, in which it can be distinguished by their focus. The ontology will focus on the way of understanding of what ‘is’, and epistemology will focus on what it ‘means to know’ is (Crotty: 1998; Sumner and Tribe, 2004; Sumner and Tribe, 2008a).

Sumner and Tribe (2004) argue that the epistemological debate focuses more about what is ‘known,’ what the meaning of ‘known’ is, and what are the relationship between the researchers and their both research subjects and objects. Crotty (1998) outlines some types of epistemologies. The first epistemology is objectivism, arguing that meaning and meaningful reality exist. Second epistemology is constructionism, arguing that means there is no objective truth of reality since the meaning of reality is constructed by engaging with reality. The third epistemology is subjectivism, arguing that the meaning of truth comes from the influence of subjective thinking of observation to object.

According to Sumner and Tribe (2004), epistemology provides a philosophical foundation of development studies and the philosophical underpinning of the credibility of the findings of studies. It will prove the knowledge and framework of a development

research design that will be produced through a proper methodology, consisting of wide range of data collection, data analysis and interpretation methods. The answers from the research will be valid, reliable, and in some senses replicable.

There are many concepts of epistemological stances. However, in general, epistemological stances in development research can be distinguished into two contrast groups (Sumner and Tribe, 2004; 2008a). Some points of contrast, those epistemological stances are based on differences in perceptions of the objectives of the research, and differences in traditions of the creation and generation of knowledge. The first group of epistemological stances is based on empiricism basis knowledge which is referring the fact, knowledge and previous experiences of researchers. Within this group are empiricism/ positivism/ post-positivism epistemological stances of Kanbur and Shaffer, (2007), positivism epistemological stance of Sumner and Tribe (2008a) The second group of epistemological stances is based on instrumentalism basis of knowledge creation and perception. It does not reflect reality and use instruments to explain human experiences. Within this groups is relativism/ hermeneutics/ interpretivism epistemological stance of Kanbur and Shaffer (2007), relativism epistemological stance of Sumner and Tribe (2008), constructivism epistemological stance of Sumner and Tribe (2004), and interpretivism, hermeneutics, and social constructivism epistemological stance of Schwandt (2000).

Studies in development have a well-established reconciliation of the different framing of epistemologies because of its diversity. The epistemological stances of development influence the boundary of thinking and action. The concept of boundary is crucial as the guidance of thinking. All set of questions need to be framed in any investigation to guide the way of thinking. In some situations, it might be difficult to place boundaries (not all situations are easily bounded, or they may be fiercely contested). However, thinking through where the limits lie can help in planning, challenging, negotiating and evaluating many different activities (Sumner and Tribe 2008b; Blackmore and Ison, 1998)

In practical, the boundary of settings should be consistent with the chosen epistemological stances. The approach of development research then is to reconcile these differing epistemological positions with a set of boundary settings in the form of cross-discipline combining process. There are two differentiations of system boundary setting, open and closed systems by the nature of their conceptual boundaries. The research with a fix and highly specific outcome settings in which little or no deviation anticipated or tolerated can be seen as closed system research with a specific boundary. This boundary is

more appropriate for research in the empiricism epistemological stance. In contrast, open systems have more flexible and adaptive boundaries which provide more possibility to the system to respond to inputs and to generate new forms of output. This process of change occurs through iteration and learning in which more appropriate for research with instrumentalism epistemological stances (Sumner and Tribe 2008b; Blackmore and Ison, 1998).

## **Choice of research methods (quantitative-qualitative-mixed)**

Different types of policy measurement require different types of information and different methods and techniques to gather and process this information. Behind this, there is a general point about research, which applies particularly strongly to policy-oriented investigations. Different policies entail different research questions to obtain evidence to inform those policies. When there is a change in the observed policy, the main question of policy investigations also change, and it is frequently necessary to change the research methods to ensure its appropriateness (Potter and Subrahmania, 1998).

Research methods are procedures for research that informs not only the techniques chosen for the data collection, but also informs the selection of data analysis techniques to deal with research questions or hypotheses. The research methods should be designed based on research questions and issues being addressed, epistemological assumptions of study and specific techniques of data collection, analysis, and interpretation. The choice of a research method is also based on the personal experiences of the researcher and audiences for the study (Sumner and Tribe, 2008a; Creswell, 2009).

Basically, research methods can be distinguished into three types: quantitative, qualitative, and mixed methods. A qualitative research method is based on previously defined epistemological stance based on instrumentalism knowledge creation. Qualitative research is a method of investigation for exploring and in-depth understanding the behaviour and process within individuals or groups and the cause of those of behaviour and process. Qualitative data typically collected directly from the people in which data analysis inductively built based on an impression from particulars to general themes. In this context, participatory methods are also categorised as qualitative methods because of their similarities. Under this method, researcher makes interpretations of the meaning of the data with some influences from personal background, subjectivity and experiences.

In contrast, a quantitative research method is based on previously defined epistemological stance based on empiricism knowledge creation. Quantitative research is a method of investigation to test the hypothesis and theories by examining the relationship between variables and measurement the analytical outcomes of variables. These variables can be measured using numerical data and can be analysed using some appropriate statistical procedures. In between qualitative and quantitative methods, mixed methods research combines or associates both qualitative and quantitative methods, techniques or data (Rao and Woolcock, 2004; Creswell, 2009)

It is necessary to select appropriate specific research methods to the theoretical or conceptual framework and research questions. In the case, there are distinctions between quantitative and qualitative research methods and also with mixed methods in between both of them. Basically, qualitative methods will be necessary if the researcher would like to observe a specific population deeply into issues of process and heterogeneity at a smaller level.

Additionally, qualitative methods are wealthy in narrative and explanation, and instead of measures an outcome they tend to discuss the process. On the other hand, quantitative methods, if conducted properly, will be crucial if the researcher would like generalisation the finding from a smaller sample for a large population with extrapolation of statistical result. Given a set of approaches and conditions, the quantitative data help researchers to observe causal relation of some variables, and also to observe the impact of specific variables on policy outcomes. Additionally, the quantitative method allows other researchers to replicate analysis to validate the previous findings (Rao and Woolcock, 2004; Sumner and Tribe, 2008a; Creswell, 2009).

There are some drawbacks to use either quantitative or qualitative methods exclusively in development research. Although quantitative methods are the best approach to measure statistics and to generate inferences from a sample to represent the population, they are not too effective to generate knowledge about the process. On the other hand, it will be highly problematic to draft generalisation of a wider population from the result of qualitative research because the sample size being studied in qualitative research are usually small. Also, it will be extremely difficult to replicate the qualitative research because the groups or individuals often selected purposively (not randomly selected) and also because the analysis often involves interpretative judgement from the researcher in which other researchers might give other interpretation from the same data (Rao and Woolcock, 2004).

Therefore, it is crucial to use mixed methods for practical settings of development research because of its cross-disciplinary nature and data limitation in developing countries. To adapt to a cross-disciplinary context of development, researchers need to use all possible methods to put on a better understanding of evidence. Qualitative and quantitative methods can be integrated into three different forms, which is based on ways to do, called parallel (concurrent), sequential (iterative) and transformative approaches.

In the parallel approach, the quantitative and qualitative research should be conducted separately, but then the findings should be compared and combined during the analysis phase in order to produce a more comprehensive analysis (Rao and Woolcock, 2004; Kanbur and Shaffer, 2007, Sumner and Tribe, 2008a; Creswell, 2009).

In sequential approach, the findings of one method need to be elaborated or expanded with another method. The sequential approach seeks varying degrees of combination between the qualitative and quantitative approaches at all phases of the research cycle to acquire most appropriate result to research purpose, epistemological choice and boundary setting. The sequential approach is most likely to be useful in situations where there are some suspected of unknown or unintended phenomena or influencing factors (Rao and Woolcock, 2004; Kanbur and Shaffer, 2007, Sumner and Tribe, 2008a; Creswell, 2009).

In the transformative approach, theoretical perspectives are used as a fundamental framework that combines both quantitative and qualitative data collection and analysis methods within a research design. This framework provides a guideline for answering research questions, techniques for collecting data, techniques, and anticipated outcomes or changes of the study. Within the transformative approach, research can also elaborate data collection and analyse methods that are usually used for sequential or a parallel approach (Rao and Woolcock, 2004; Kanbur and Shaffer, 2007, Sumner and Tribe, 2008a; Creswell, 2009).

## **What constitutes rigour in development research**

Rigour is fundamental for both development research and practical contexts of development policies. Rigour in development research means taking the systematic approach to providing compliance to justify that evidence and conclusion from the research will be obtained properly with acceptable or acknowledge bias. Rigour in development research influenced by the quality of a whole aspect of research process such as problem

identification and a defining research question that guide the choosing of appropriate epistemological stance that led to designing theory and conceptual framework and choice of research methods and data analysis framework to answer the research questions (Sumner and Tribe, 2004; Thomas, 2008).

Sumner and Tribe (2008a) propose some general criteria of rigour based on empiricism knowledge basis of epistemological stances in which more appropriate for quantitative research such as validity, reliability, replicability and generalizability. Validity means to what extent there is an association between data and result. Reliability means to what extent the observations provide consistent results when research instruments are utilised on more than one time. Replicability means to what extent the investigation will be possible to be reproduced. Generalizability means to what extent it will be possible to generalise findings to similar cases which are never being studied.

In quantitative research, validity is a property of inferences and not a property of research designs, methods or instruments. The identical research design may contribute to more or less valid inferences under a different situation. There are two main types of the validity of quantitative methods, internal validity and external validity. Internal validity is the validity of inferences that concern about whether the research can draw correct inferences from the data about the population based on a survey or an experiment. External validity is the validity of inferences that concern about whether the research is able to draw correct inferences from the sample data to other geographical settings, population settings or time settings (past or future situations). Additional types of validity in quantitative research are statistical conclusion validity and construct validity. Statistical conclusion validity is the validity of inferences to draw accurate inferences from the data. The example threat from statistical conclusion validity is the weak statistical power and violation assumption of test statistics. Construct validity is the validity of inferences to construct adequate definitions, inferences and measures of variables (Sadish et al., 2002; Creswell, 2009). In practical, properly designed quantitative research will not always provide strong external validity. Example of this case is the randomised experiment. The randomised experiments have very strong internal validity, statistical conclusion validity and construct validity, but the inferences cannot be drawn from other settings (Benerjee and Duflo, 2011).

Because general criteria of rigour are biased towards quantitative methods, Sumner and Tribe (2008a: 114) also propose alternative assessment criteria that also will be appropriate for qualitative methods. The first criterion is credibility that seeing to what

extent a set of findings is believable. The second criterion is transferability that seeing to what extent the set of findings is relevant to other settings. The third criterion is dependability that seeing to what extent a set of findings are likely to be relevant to a different time, the fourth criterion is confirmability that seeing to what extent the personal values are not allowed to influence on generating a conclusion.

Validity in qualitative research does not distinguish by the same meaning as its meaning in quantitative research, but it is constructed contingently from many criteria. Validity in qualitative research usually can be called as trustworthiness or credibility, determines the accuracy of the findings from the perspectives of the researchers, research informants or readers. Some of the examples of qualitative research validity are descriptive validity that focuses on the accuracy of descriptive, interpretative validity that focuses on the accuracy of translating the meaning of qualitative data and theoretical validity that focuses on appropriates the constructed theory. One of the most common techniques to increase the validity of qualitative research is a triangulation of different data, even the quantitative data, and information by investigative evidence from those sources and using them to build a logical justification (Maxwell, 1992; Patton, 2002; Golafshani, 2003; Creswell, 2009).

Rigour in mixed methods means that the entire research process is systematically correlated to the research questions and the all steps of the research process are meet the criteria of rigour based on both qualitative and quantitative research. It means that each method, qualitative and quantitative, should meet the criteria of rigour based on their respective criteria. When one of the method failed to meet the rigour criteria, it will in negatively affect to the rigour of entire mixed method research (Sumner and Tribe, 2004; Sumner and Tribe 2008a; Rao and Woolcock, 2004).

However, combining both quantitative and qualitative methods will improving the rigour comparing to solely using the method that not meet the criteria of rigour. For example, the use of qualitative methods will increase the validity of the result of quantitative methods in some ways. It will help to strengthen the hypothesis, to understand the direction of causality, to identify research instruments, to understand the nature of bias and measurement error, to help cross-checking, to get any sense of context, to improve interpretation from quantitative findings and also to find un-observables evidence (Sumner and Tribe, 2004; Sumner and Tribe 2008a; Rao and Woolcock, 2004).

In mixed methods research, it is important to consider complex types of validity associated with quantitative and qualitative methods, and also important to consider

specific validity issues that might occur associated with the mixed methods approach. There are three main validity problems in mixed methods: the problem of representation, the problem of legitimation and the problem of integration. The problem of representation is the difficulty to take a general conclusion based on the qualitative component of the data, methods and findings of mixed methods. The problem of legitimation is the difficulty to make credible and trustworthiness inference. The problem of integration is the difficulty in combining data, information and analysis from both qualitative and quantitative. Additionally, because mixed methods research is more complex than qualitative and quantitative research, there are technical and capacity problems for implementation, its implementation also cost more expensive. Therefore, the appropriate design of mixed methods research to answer the research question and fit with available technical capacity, time-frame and budget should be the main consideration (Rao and Woolcock, 2004; Onwuegbuzie and Johnson, 2006; Creswell, 2009).

## **Conclusion**

This paper concludes that cross-disciplinary is extremely fundamental for development research because of its complexity. The appropriate choice of epistemology supported with clear boundaries it is crucial to provide direction on how to answer the research question.

Although there are three available research methods, qualitative, quantitative and mixed methods, the mixed method is the most appropriate methods for development research in practice because despite its limitation, mixed methods able to combine the advantages, both quantitative and qualitative methods and also complement each other.

Some research might be rigour in some aspects but not rigour in other aspects. It is fundamental for policymakers to understand the strength and weakness as well as the validity of the research before they collect and utilise information and findings from the research for policy design.

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