

Strategic Capabilities in Banks through the Financial Crisis of 2007/2008:

**Simon Shapiro, Henley Business School
University of Reading
Greenlands
Henley-on-Thames
Oxfordshire
RG9 3AU, UK**

**Telephone: +44 208 420 4729
Fax: +44 27 11 291 1011
Email: simon.m.shapiro@gmail.com**

**Supervisor: Prof. George Tovstiga
Email: george.tovstiga@henley.reading.ac.uk**

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Abstract

This paper reviews some of the philosophical and methodological issues in the author's on-going research provisionally titled "Strategic Capabilities in Banks through the Financial Crisis of 2007/2008". The backdrop of the research is the observation that during the recent financial crisis some banks were able to survive and continue to grow while others simply vanished altogether. The research brings together stakeholder theory and the strategic capabilities view of firms. After setting out the research model, Deetz's (1996) grid is used to review the methodological choices. Finally, the main methodological choices are tested against the critical realist view for alignment.

1. Introduction

Up until 2007/2008 “financial innovation” had appeared to shareholders, staff, and customers of banks to be a new alchemy producing wealth in ever increasing quantities. This apparent wealth creating capability attracted some of the brightest scientific talent in the world who trained at the most prestigious Universities. The Chicago School dominated the diffusion of theory into policy and practice. Conventional wisdom can be summed up as “Financial Innovation was seen beneficial by default as the market mechanism would weed out bad innovations”. However, the past two decades of increasingly sophisticated “financial innovations” culminated in a credit-led “boom and bust” cycle that ushered in the worst global recession since the 1930s. The 2007/2008 financial crisis has been attributed to any or all of the following: trade and savings imbalances between key industrialized nations and key emerging markets, newfangled financial instruments invented by rocket scientists, inappropriate executive compensation schemes, trader greed, poor economic policy, the 9/11 terrorist attack on the US, low interest rates, failures of risk management, inappropriate business models, lack of corporate governance, lax regulatory environments, rating agents errors, consumer stupidity, and fraud. In all likelihood, a coherent case can be made for any combination of these. There is common belief that at the heart of the crisis is a range of new credit-related financial products that substantially contributed creating the conditions that fueled the crisis and caught many of the leading financial institutions off guard. However, when looking in more detail at the performance of financial institutions, differences in their relative performance emerge; with many doing surprising well through the crisis.

This phenomenon prompts the main research question, “How do firm level capabilities influence the sustained creation of value for stakeholders of banks?”

The paper is arranged as follows: Section 2 sets out various philosophical positions which guide our understanding of how research should be conducted; section 3 briefly sets out the research model; section 4 discusses the link between research philosophy, research model and researcher philosophical position and method preferences; section 5 reviews some of the methodological issues in operationalizing of the research model; finally section 6 concludes.

2. Research Philosophy

Paradigms define for researchers what it is they are about, and what falls within and outside the limits of legitimate inquiry (Guba, Lincoln 1994:108). In order to persuade ourselves and our peers of the contribution of our research, we inevitably have to deal with how we come to understand something as “fact” and to be able to test how our “conclusions” are reached. In choosing a methodological approach we need to recognize that these methods are deeply rooted in the philosophy of science (Easterby-Smith, Thorpe & Lowe 1991:31). In order to be convincing with our arguments and conclusions, we need to be at ease with the methodology’s underpinning philosophical assumptions about “truth”, “fact” and how the chosen method arrives at its “conclusions”.

A researcher’s ontological and epistemological commitment further constrains the methodology that she brings to bear on the inquiry (Guba, Lincoln 1994). For example, a realist objectively pursuing knowledge mandates control of possible confounding factors via an experimental design aimed at verifying hypotheses. Burrell and Morgan (1979) arrange methodology on a continuum from nomothetic - seeking general laws using a

systematic protocol or technique; to ideographic - seeking an individual or particular understanding by being close to one's subject and letting it unfold its nature during the process of investigation.

Guba and Lincoln (1994:112) identify four paradigms¹; Postivism and Post-positivism, whose aim is explanation, prediction and control²; Critical Theory, whose aim is critique and transformation, and restitution and emancipation; Constructivism, whose aim is understanding and reconstruction.

In ground breaking work, Burrell and Morgan (1979) established a two-by-two matrix across the dimensions of subjective-objective (related to the nature of science) and regulation-radical change (related to the nature of society). The resulting matrix gave rise to four 'stereotypical' research paradigms; functionalist, interpretive, radical structuralist and radical humanist. The functionalist paradigm is characterised by a concern for providing explanations of the status quo, social order, consensus, social integration, solidarity, need satisfaction and actuality. In terms of ontology, epistemology and methodology, it tends to approach research from a realist, positivist, and nomothetic perspective (Burrell, Morgan 1979:26). The interpretive paradigm tries to understand the world as it is, at the level of subjective experience. It approaches research from a nominalist, anti-positivist, and ideographic perspective (:28). Whilst sharing much in common with the interpretive paradigm, the radical humanist extends the nominalist, anti-positivist, and ideographic perspective by emphasizing the importance of overthrowing or transcending the limitations of the existing social arrangements (:32). In a similar vain, the radical structuralist paradigm extends the functionalists perspective as realist, positivist, and nomothetic, to embrace the view that contemporary society is characterised by fundamental conflicts that generate radical change through political and economic crises (:34).

Burrell and Morgan (1979) ushered in a wave of attempts to characterize paradigms of organizational theory (Lewis, Grimes 1999). Deetz (1996:191) cites six references as examples of authors re-characterizing the paradigms of organizational theory, while Lewis and Grimes (1999:672) cite an additional two. Reflecting on the reasons for the popularity of the Burrell and Morgan grid, Deetz (1996:191) suggests that the grid provided a framework for researchers in alternative paradigms to present their work as different but equally legitimate. However, Deetz believes that there are weaknesses in the Burrell and Morgan grid. Not so much for the ease with which research was being pigeon-holed into the four categories, but for the construction of the dimensions themselves. The subjective-objective dimension in particular is problematized as having labels that are already socially contrived; reproducing a neo-positivist philosophy of science; and leading to the continuation of qualitative research being associated with the "subjective" label and quantitative research being associated with the "objective" label (:193-194).

Deetz (1996:195) also uses two dimensions; the first focussing on the origin of the concepts and problem statements, the second on the relationship of the research practices to the dominant social discourses. The first is labelled "Local/Emergent – Elite/A Priori" in order to address the question of where and how the research concepts arise. This dimension provides three advantages. First it acknowledges that linguistic and

¹ These four have been extended in the latest edition to include "participatory" which gives primacy to practical knowing and living knowledge (Guba, Lincoln 2005).

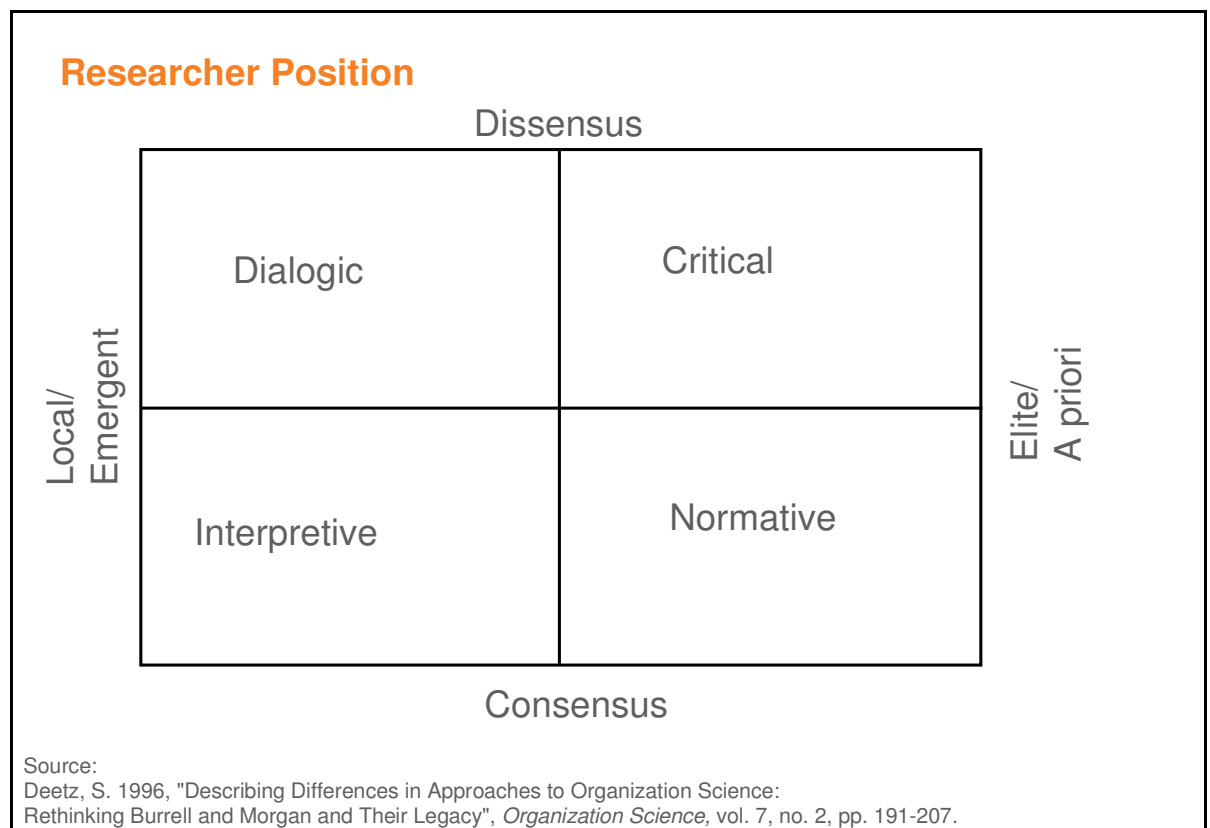
² The main difference between these two is the modifications at all three levels to allow for a less emphatic approach. At the level of ontology, post-positivism recognizes that "reality" can only be probabilistically apprehendable, at the level of epistemology it recognises that the findings are probably true, and at the level of methodology it allows for the inclusion of qualitative methods.

social construction is at play in all research positions and directs attention to whose concepts are being used¹. Second, it helps to distinguish different kinds of knowledge. Finally, it allows us to recognize that all knowledge has political alliances to various groups in society (Deetz 1996:195-196).

The second dimension is labelled “Consensus – Dissensus” in order to draw attention to the relationship of the research to the existing social order. Consensus research has as its primary goal to display a discovered order with a high degree of fidelity. Conflict and fragmentation are treated as system problems and the research focuses on how to maintain or restore the status quo.

At the dissensus pole, research aims at challenging the mechanisms that maintain order to give a voice to the dissenting positions. It takes an ordered and observed world and attempts to show the fuller potential and variety than that which is apparent.

Deetz crosses these two dimensions to form a grid, noting that they represent a way of articulating arguments and engaging in research practices (Figure 1). Thus Deetz identifies normative discourse, whose goal is to identify law-like relations among objects; interpretive discourse, whose goal is to display a unified culture; critical discourse, whose goal is to unmask domination; and dialogic discourse, whose goal is to reclaim conflict. However, they should not be elevated to the point that they pigeon hole specific authors (1996:197-198). Consequently, Deetz goes as far as to avoid calling the resulting four discourses paradigms. This would be a mistake because the delineations are there to provide a contrast between the alternatives; the edges are quite blurred with authors often moving from one to the other; and they often borrow insights from each other.



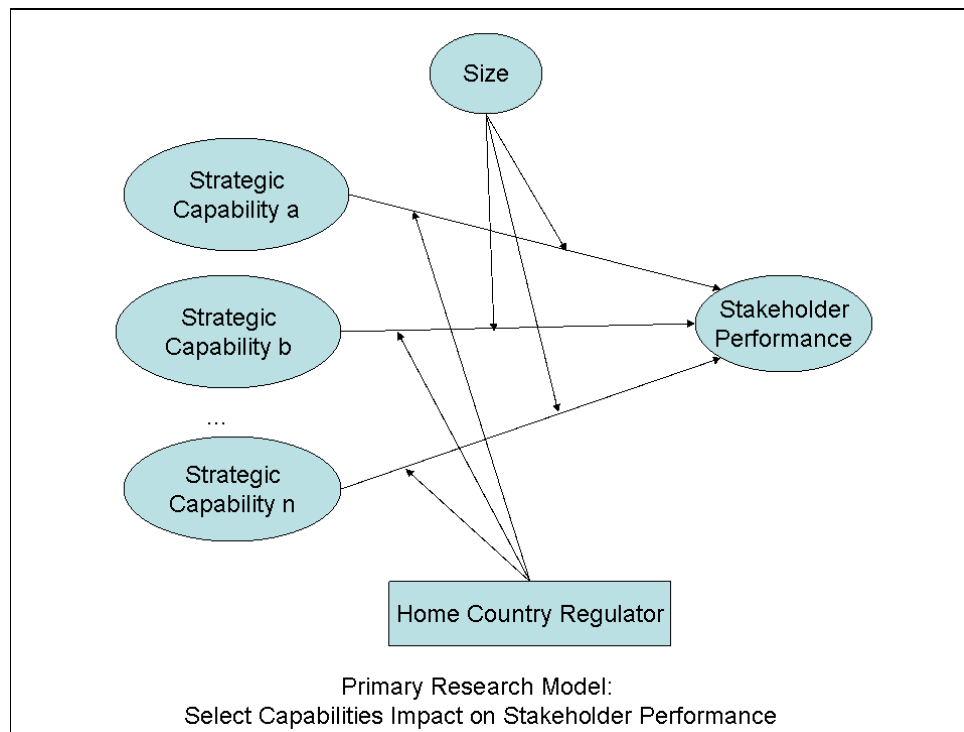
¹ Social Constructionism is the analysis of ‘knowledge’ or ‘reality’ or both as contingent on social

3. Research Model

The objective of commercial enterprise is to ensure the ongoing creation of value for a firm's stakeholder. The research is explicitly focused on stakeholders rather than shareholders because the present crisis has raised many issues of the uneven outcomes for shareholders, managers, governments and the broader economy. Drawing on the resources and capabilities view of the firm (Wernerfeldt, Barney, Teece, Eisenhardt, Telfat), the main research question is "Which capabilities accounted for the observed difference in performance by banks in the creation of value for stakeholders?" This is set out in the primary research model below.

In addition to the primary question, there a number of subsidiary questions to be answered:

- How do we measure relative stakeholder value creation?
- Do these capabilities relate to the innovative activities of banks?
- How do we recognize capabilities as being of strategic relevance?



4. Researcher Methodological Choices

While many methodological options for conducting the research exist, they are not totally neutral to the positions of section 2; some are more traditional in the academic communities of which the researcher is a part; others simply clash with the philosophical underpinnings of the position. In fact, many academic communities have an already established preferred position and methods (in many cases) making the transition from one to another difficult. This is exacerbated by the academic editorial process which often selects to a lesser or greater

relations, and is made out of continuing human practices (Honderich 1995).

extent on philosophical position and method as well as content.

I position myself as a critical realist, recognising that there are many real phenomena in the world that exist independently of the myself (chairs, tables, gravity etc), however our ability to understand them and their interactions are governed by the way in which we construct our understanding of them. I prefer the Deetz layout of section 2 where I can explicitly analyse the position and the method used. For example, a list of strategic capabilities that are produced from the literature and then tested for strength, comes from a strongly a priori position, whereas a focus group used to elicit the list of strategic capabilities is from an emergent position.

5. Operationalising the Research

5.1 Measuring Relative Stakeholder Value

Banks have a mandate to create value for their stakeholders. Our understanding of what this means for each stakeholder necessitates that we understand the outcome of stakeholder value creation as a multi-dimensional construct. We investigate this value creation phenomenon through various accounting measures that address the expectations of each stakeholder. In abstracting our view of banks as a 'black box' that produces outputs in response to certain inputs we are able to use production and efficiency measures to construct a production frontier out of a population of banks.

There are two broad categories of banking models: a production model which sees banks using capital and labour to produce a range of banking services such as transactional services, deposits and loans; and an intermediation model that sees banks as intermediaries between depositors and borrowers. Fethi and Pasiouras (2009) point out that the former model is usually applied in analyzing banks' branch networks, while the latter model is good for banks as a whole.

Optimization theory has developed numerous techniques for dealing with multiple competing objectives, providing a good mechanism for investigating stakeholder benefits. For example, Garcia-Cestona and Surroca (2008) used a linear optimization based data envelope study to investigate how ownership structure of Spanish banks influences their economic behaviour at the level of their performance and their goal priorities.

By adopting a view of banks that is aligned with the various input-output models of Berger and Humphreys (1997) but that takes a stakeholder oriented view of the outputs, we are able to restate the problem, making it solvable via frontier and production function analysis. Under this model, we see banks as consuming certain inputs and producing various outcomes for stakeholders. The main model is set out as figure 2.

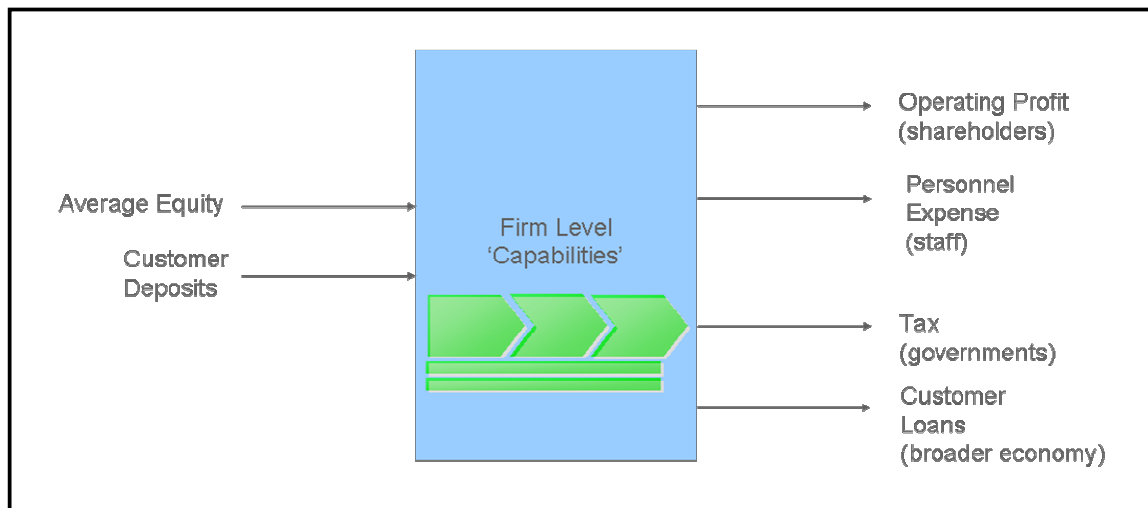


Figure 2. Model 1. Two input – four output stakeholder oriented model

We identify equity and customer deposits as inputs and evaluate a single measure for each of the key stakeholders as outputs: for shareholders we use operating profits, for staff we use personnel expenses, for the government we use taxation, and for the broader economy we use the net amount of new loans created.

Stakeholder's goals are often not in total alignment. In order to compare the relative creation of value for a bank's stakeholders we restate the problem as follows. Assume that a population of banks covers the entire range of possible outcomes for stakeholders at a given time period. For each bank in the population, can we identify a linear combination of banks that can produce more stakeholder value with the same or fewer customer deposits and equity than that particular bank? The extent to which this is possible, establishes the potential improved outcomes for the individual bank's stakeholders and gives a relative measure of the effectiveness of the individual bank in yielding the stakeholder benefits than they did when compared to the constructed value. This restatement sets the stage for analysis using the data envelope analysis method.

The Data Envelopment Analysis (DEA) methodology forms an efficient frontier in order to identify among comparable decision making units those which in some way exhibit 'best practice' performance (Cook, Seiford 2009). Garcia-Cestona and Surroca (2008) used a linear optimization based data envelope study to investigate how ownership structure of Spanish banks influences their economic behaviour at the level of their performance and their goal priorities. Further, Fethi and Pasiouras' (2009:5) review of 179 studies found that Data Envelope Analysis (DEA) is by far the most commonly used technique (164 studies) in assessing bank performance growth.

5.1.1 A Brief Introduction to the Experience of a Pilot Study to Measure Stakeholder Value

A complete test of the software and reports necessary to perform the analysis of stakeholder value was the subject of a test run which revealed the need for some additional considerations. This brief description omits the findings themselves but describes the primary data source and sample as they are relevant to the discussion that follows.

The data is taken from Bankscope data for listed banks with assets greater than \$25bn, resulting in data for 301 banks. Once outliers and incomplete records were removed, the number of banks was reduced to 158. A by-product of the DEA non-parametric method is that the results cannot be extended beyond these banks. This suggests a need to remove the \$25bn cap, thereby extending the coverage.

In addition, the input set should be extended to include the net loan loss provision as a proxy for credit risk. This would enable statements to be made for each bank that the frontier banks were able to create relatively more stakeholder value than them while using fewer customer deposits, less capital and having less credit risk.

5.2 Linking to Capabilities

The expected output from the DEA study is an index of the relative performance with respect to two different time periods. The DEA technique needs to be differentiated from the stochastic frontier analysis (SFA) which is an alternative approach. DEA is a non-parametric technique which means that it cannot be generalised beyond the population of firms. However, it requires no assumptions about the functional form of the production function from inputs to outputs, which is appropriate in this case.

In the tradition of the literature stream in which the DEA resides, it is common to perform a second stage regression which attempts to use other variables to explain the values of the index obtained together with a number of control variables. This is the point at which the link to capabilities is introduced.

5.3 Understanding and Measuring Capabilities

The resource based view of the firm suggests that firm-specific capabilities and assets and appropriate isolating mechanisms determine firm performance. Rumelt (1997) suggested that 'strategic' firms are "characterized by bundles of linked and idiosyncratic resources and resource conversion activities". These resource bundles are seen as capabilities and achieve strategic relevance by being valuable to the firm, not freely available in the markets, difficult for others to imitate, and do not have ready substitutes available to competitors. In addition, if they are dynamic, in the sense that they focus on creating new, modifying, or extending resources to allow the firm to respond to changing conditions, their value is further enhanced.

The intention is to establish which capabilities are thought to be strategic through interviews and focus groups. These are to be combined into a survey instrument to be measured for strategic relevance based on the constructs set out above. This introduces a number of issues that remain to be finalised and are covered in the next section.

5.4 Issues to be Resolved

5.4.1 Unit of Analysis

A problem with the formulation is one of unit of analysis. The index of stakeholder value creation is at the level of the organisation, while the analysis and assessment of strategically relevant capabilities is at the level of how they are understood and experienced by the management of the organisation. Resolving this requires a number of respondents per organisation and the subsequent aggregation of the results into firm level scales.

An alternative may be to find firm level proxies for the capability measures. This is a back-up strategy that will depend on experience gained during the pilot testing of the capability assessment instrument.

5.4.2 Matching the Survey to the Performance Index

In order to provide a complete data set, individual data has to be obtained from as many of the firms in the DEA study as possible. Then, as the DEA is based on a selected subset of the universe of banks, being the 158 banks that provided clean data out of the 301 large global banks, it would be ideal to obtain as many banks

as possible responding to the survey phase.

There are two alternative formulations to this part of the design that may be more appropriate. First, create a significantly larger population of banks by easing the asset size restriction. This will make sampling for the purposes of the survey more feasible and it would extend the generalisability of the findings to the larger population. Second, concentrate the selection to the banks of a particular jurisdiction which would make it easier to get greater percentage coverage during the survey stage.

In addition, the Bankscope data should be extracted as close to the dates of the survey instrument as possible to minimise the lag between the Bankscope data, which is historical accounting data, and the survey which is based on the perceptions of the present management in each bank.

5.4.3 *Final Regression Model*

It is customary for the regression phase to be carried out using a Tobit regression. However, this has recently been challenged in the literature in favour of other newer methods or a return to the ordinary least squares (OLS) method.

5.4.4 *Philosophical Issues from the Methodology*

In developing the list of capabilities through one-on-one interviews and focus groups I am positioning this phase in the dialogic quadrant in Figure 1. Processing this list into a survey document moves to an interpretive position which will be researched using mainly attitudinal surveys. The creation of the stakeholder performance index performs two functions, first it gives voice to the critical position espoused by Freeman that stakeholders and not just shareholders matter; second, it moves to the normative position without making a priori assumptions about the form of the function that transforms inputs into stakeholder outcomes in banks.

Both DEA and regression have additional philosophical assumptions. Critical realism tries to discover underlying structures that generate particular patterns of events. Mathematical and statistical analysis can be very useful in the exploratory stage in detecting particular patterns within the data. Any non-randomness must imply some structure or set of constraints that is generating it, although, of course, this may be just as much a result of the mechanism of data production as any underlying generative mechanism (Mingers 2000).

6. Conclusion

This paper reviewed some of the linkages between research problem, research philosophy and its translation into an operationalized research initiative. In so doing, I position myself as a critical realist. While the main research is at the level of the organization, our understanding of strategically relevant capabilities takes place at the level of individuals in the organization creating a need to aggregate the findings to the firm level. The list of capabilities used in the analysis emerges through interview and focus groups, and the rating of strategic importance through questionnaires. The critical realist position recognises an external reality that exists complete with structures and mechanism. However, it accepts that our understanding of these phenomena, structures and mechanisms are constructed by us through the processes of debate, argument, and analysis. When it comes to empirical work, the philosophical underpinnings of the various tools and methods need to be checked for alignment with the underlying philosophical position.

References

- Berger, A.N. & Humphrey, D.B. 1997, "Efficiency of financial institutions: International survey and directions for future research", *European Journal of Operational Research*, vol. 98, no. 2, pp. 175-212.
- Burrell, G. & Morgan, G. 1979, *Sociological paradigms and organisational analysis : elements of the sociology of corporate life*, Heinemann, London.
- Cook, W. & Seiford, L. 2009, "Data envelopment analysis (DEA) - Thirty years on", *European Journal of Operational Research*, vol. 192, no. 1, pp. 1.
- Deetz, S. 1996, "Describing Differences in Approaches to Organization Science: Rethinking Burrell and Morgan and Their Legacy", *Organization Science*, vol. 7, no. 2, pp. 191-207.
- Easterby-Smith, M., Thorpe, R. & Lowe, A. 1991, *Management research : an introduction*, Sage, London ; Newbury Park.
- Fethi, M.D. & Pasiouras, F. 2009, "Assessing Bank Performance with Operational Research and Artificial Intelligence Techniques: A Survey", *SSRN eLibrary*, .
- García-Cestona, M. & Surroca, J. 2008, "Multiple goals and ownership structure: Effects on the performance of Spanish savings banks", *European Journal of Operational Research*, vol. 187, no. 2, pp. 582-599.
- Guba, E.G. & Lincoln, Y.S. 2005, "Paradigmatic, Controversies, Contradictions, and Emerging Influences" in *The SAGE handbook of qualitative research*, eds. N.K. Denzin & Y.S. Lincoln, 3rd edn, Sage Publications, Thousand Oaks, pp. 1210.
- Guba, E.G. & Lincoln, Y.S. 1994, "Competing Paradigms in Qualitative Research" in *Handbook of qualitative research*, eds. N.K. Denzin & Y.S. Lincoln, Sage Publications, Thousand Oaks, pp. 643.
- Honderich, T. 1995, *The Oxford companion to philosophy*, Oxford University Press, Oxford ; New York.
- Lewis, M.W. & Grimes, A.I. 1999, "Metatriangulation: Building Theory from Multiple Paradigms", *Academy of Management Review*, vol. 24, no. 4, pp. 672-690.
- Mingers, J. 2000, "The contribution of critical realism as an underpinning philosophy for OR/MS and systems", *The Journal of the Operational Research Society*, vol. 51, no. 11, pp. 1256.
- Rumelt, R.P. 1997, "Towards a Strategic Theory of the Firm" in *Resources, firms, and strategies : a reader in the resource-based perspective*, ed. N.J. Foss, Oxford University Press, Oxford ; New York, pp. 378.