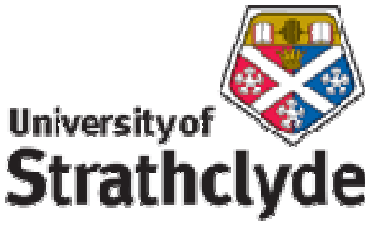

FUNDAMENTAL CONCEPTS IN MANAGEMENT RESEARCH AND ENSURING RESEARCH QUALITY:

Focusing on Case Study Method

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ABSTRACT

The aim of this research is to develop an appreciation of the wide range of methodological choices available to management researchers, including an overview of their approaches to data collection, principles of data analysis and theory building. This study will expand on issues and debates common to many of the approaches and will conclude with demonstrating the ability to explain a chosen research approach. This paper has a significant contribution by clarifying how to ensure research quality, which is crucial to pursue auditable data collection and analysis and consequently to generate reliable knowledge in particular to *case study* research.

INTRODUCTION

Research methodology has a central role in any kind of management research if the research aims to demonstrate credibility. A lack of consideration of the philosophical nature of the research might seriously affect the quality of the outcome of the research. The way the researchers understand and interpret the reality of the world will influence the research process followed and in consequence the results and findings. Hence, the philosophical assumptions will help the researcher to choose the right research strategies and techniques. These are some benefits of understanding various research approaches highlighted by (Easterby-Smith, Thorpe, & Lowe, 2004):

- Design process of the research is clearer.
- Understanding the characteristics of the different philosophical paradigms may help the researcher to foresee which research design may work and which may not.
- It may help the researcher to identify and create research designs that might be unknown for him/her.

- Helps the researcher to develop a *research identity*.

This paper focuses on case study research because since 1990s, it is becoming highly popular to conduct management and business research in specific contexts and in particular situations (Siggelkow, 2007).

SCOPING THE FIELD IN RESEARCH PARADIGMS

"…and those who were seen dancing were thought to be insane by those who could not hear the music" Friedrich Nietzsche.

Nietzsche's quote is very timely to mention here as it beautifully lays the grounds for a debate on research philosophies and researcher's positions around those debates. What is in the world and how we know what is in the world are broad questions to elaborate in research philosophies debates. Consequently management researchers are schooled in different paradigms due to their choices to look at the social world from various lenses. The following section refers an in depth literature review on research philosophies and approaches in management research.

DEBATE AROUND RESEARCH PHILOSOPHIES

Management and business research deals with social world issues and generally those issues involve human interactions and therefore are messy. In management research there are different approaches to conducting research. (Meredith, Raturi, Amoako-Gyampah, & Kaplan, 1989) highlights two dimensions as key criteria for philosophical modelling of the management research. The first is rational/existential dimension, which defines whether there is just one reality and independent to the researcher, or this reality is subjective and socially constructed. These different approaches can be explained through four dimensions i.e. ontology, epistemology, methodology and methods/ techniques.

The next sections will aim to clarify debates on the status and nature of social science and management research by introducing alternative positions and epistemologies and exploring implications for choices in research design.

ONTOLOGY

Ontology is related to the nature of truth in world. This can be subjective or objective and thus explained as "assumptions that we make the nature of reality" (Easterby-Smith et al., 2004: 31). Science and social science debates around ontology have been different from each

other. Social science does not follow a traditional approach and therefore richer in philosophical debates. Main ontologies are (Easterby-Smith et al., 2004; Scholarios, 2005):

- *Objective* ontology (physical sciences approach; deals with facts, causality, fundamental laws, reductionism, measurement and objective reality; the truth holds regardless of who the observer is; aim is to discover what is there)
- *Subjective* ontology (constructed; the nature of what is there is not solid but shifting; truth depends on who establishes it and facts are all human creations; aim is to understand people's interpretations and perceptions)

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Insert Figure 1 about here

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EPISTEMOLOGY

Epistemology is related to the way we see the nature of reality in world. We look at social world issues from different lenses we gained through our background, education, personal and professional experiences. Hence, it is a "general set of assumptions about the best ways of inquiring into the nature of the world" (Easterby-Smith et al., 2004: 31). Four key epistemologies in social sciences considered in this study are:

- Positivism
- Critical realism / Relativism
- Interpretivism / Social Constructionism / Phenomenological Approach
- Action Research

There are different philosophical debates amongst business and management researchers who favour different paradigms. Meredith et al. (1989) highlights two dimensions as key criteria for philosophical modelling of the management research. The first is *rational/existential* dimension, which defines whether there is just one reality and independent to the researcher, or this reality is subjective and socially constructed. The following sections endeavour to describe distinguishing characteristics of each paradigm. It is worth to note here that epistemology and paradigm are used as interchangeable terms here. Paradigm represents a theoretical framework, within which research is conducted (Beech, 2005).

Positivist Paradigm

First Positivist research examples are the work of Pugh and his colleagues at Aston University, UK into organisational structure in 1961s and the work of Hofstede in 1984 and 1991 about the impact of national cultures on social and work behaviour in IBM (Easterby-Smith et al., 2004). These examples used highly structured interviews or questionnaires over a large sample. However even in these examples researchers were dealing with not only hard and objective data but also mental constructs, readings and discussions with academic peers, for instance the labels attached to the classifications were the researchers' own words. Thus, in practice it is difficult to follow a pure version of objectivist paradigm while conducting social science research.

Briefly, positivist epistemology has the following characteristics (Easterby-Smith et al., 2004; Scholarios, 2005):

- Independence – the observer is independent of what is being observed
- Value-free and scientific – the choice of subject and method can be made objectively, not based on beliefs or interests
- Hypothetico-deductive – hypothesize a law and deduct what kinds of observations will demonstrate its truth or falsity
- Large samples
- Empirical operationalisation – typically quantitative
- Principles of probability
- Reductionism – break problems down into their smallest elements
- Generalisation – sufficient samples should be selected in order to generalise to a population

Interpretivist Paradigm

Interpretivist approach generally takes an "*open minded"* approach and starts from data rather than a literature based theory or hypotheses to be tested out. Interpretivist researchers look at organisations in depth and generally appoint to extensive conversations, observations and secondary data analysis such as company documents and reports in order to overcome generalisability critiques (Easterby-Smith et al., 2004: 40).

However, interpretivist researchers engage with a deeper understanding of meanings in data analysis rather than aiming to generalise things. Interpretivist paradigm intends to deal with different contexts through sense making rather than objective real world out there. Interpretivist researchers generally employ methods such as ethnography, phenomenology, hermeneutics and discourse analysis in order to generate qualitative data. Data analysis involves observations, depth interviewing and analysis of text (Beech, 2005).

Critical Realist Paradigm

The philosophical debate around pure positivism and pure interpretivism is very distinctive, however, in practice to follow those pure paradigms are not always possible in social scientific research. Although management researchers are more passionate at the beginning into pursuing a particular philosophy, when they are conducting the field work they might be using different research designs at their convenience.

Critical realist paradigm can be "seen as useful compromise which can combine the strengths and avoid the limitations of positivist and imterpretivist paradigms" although it has its own strengths and weaknesses too. The major strong points are it recognizes the value of using multiple sources of data and perspectives and the weak point is large samples might be required which might be costly (Easterby-Smith et al., 2004: 42).

Table 1 summarizes the main distinctions seen in positivist, interpretivist and critical realist paradigms regarding the interpretation of the nature of truth and their general approach to conducting management research. There seems to be a stronger polarisation between pure positivist and pure interpretivist epistemologies whereas critical realist epistemology appears to be taking a middle view.

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Insert Table 1 about here

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Action Research

The fourth paradigm is action research. Action research refers to be a collaborative approach between the researcher and the organisation or unit. The main idea is making an impact and

change happen by involving in the process so as the situation can be researched effectively. This type of research is common in practical problems and 'Organisation Development' field where the researcher involves in the process actively. According to (Easterby-Smith et al., 2004: 43-44) action research approach shows the following two attributes:

- "a belief that the best way of learning about an organisation or social system is through attempting to change it, and this therefore should to some extent be the objective of the action researcher"
- "the belief that those people most likely to be affected by, or involved in implementing, these changes should as far as possible become involved in the research process itself"

The aims of action research according to (Huxham, 2003; Huxham & Vangen, 2003) are to create tools and methods, to build up theory that relates to the implementation of policy, and to develop practice-oriented theory related to management processes. However, the researcher's involvement and high levels of subjectivity bring along critiques to action type of research. Credibility and robustness are debatable in action research according to different authors influenced by interpretivist or positivist paradigms (Huxham, 2003; Tranfield & Starkey, 1998).

METHODOLOGY

Methodology is a "combination of techniques used to enquire into a specific situation" (Easterby-Smith et al., 2004: 31). Methodology is about which approach to take and consequently there are a number of alternatives such as hypothetico-deductive, inductive and co-operative inquiry. In short, Hypothetico-deductive methodology is applied within positivist paradigm generally and inductive methodology often starts with data rather than literature and finally co-operative inquiry is seen in action type of research in which there are high levels of involvement of the researcher.

METHODS AND TECHNIQUES

Methods are "individual techniques for data collection, analysis, etc." (Easterby-Smith et al., 2004: 31). When researchers decide to pursue a specific epistemology, they often adopt methods which are commonly used within that epistemology. Techniques and methods are about what practices of research should be undertaken and the approach the researcher takes

will impact on what he or she can see and find. Some research methods and techniques are statistical testing, experimental, secondary data analysis, case study, observation, interviews and participation.

SUMMARY OF RESEARCH DESIGN

To sum up, it is possible to draw a map of ways of scoping the research through choosing a paradigm, epistemology, methodology and related methods and techniques as shown in Figure 2. These fundamental concepts in any management research design are critical to make a research academically credible.

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A REVIEW OF RESEARCH METHODS

Evolution of Different Trends in Research Methods

The roots of different research methods and techniques have gained popularity in different periods. Firstly, in 1900-World War II, researchers were concerned with offering valid, reliable, and objective interpretations through field experiences which were reflective of positivist paradigm. Then, in post war years to the 1970s the modernist phases commenced and social realism, naturalism and ethnographies are still valued as well as the discovery of Grounded theory by Glaser & Strauss (1967). In 1970-1986, qualitative researchers had a full complement of paradigms, methods, and strategies to employ in their research through naturalistic, post positivist and constructionist paradigms which gained powers in this period. In mid-1980s- mid 1990s, crisis of representation came out and research and writing made more reflective, calling into question issues of gender, class and race while issues such as validity, reliability and objectivity were problematic. New forms of writing research emerged such as memoir with the researcher as the central character. Moreover, Mid 1990s to present day, the concept of the aloof observer has been abandoned and the research for grand narratives is replaced with by more local, small-scale theories fitted to specific problems and particular situations (Dinnie, 2005).

Mapping the Research Design

In practice researchers generally follow a particular path in their research design when choosing which methods to adopt in line with their chosen paradigm. As shown in Figure 3 the acceptance of a particular epistemology usually leads the researcher to adopt methods that are characteristic of that position. Figure 3 maps the appropriate methods possible to use within a paradigm. The choice of ontology and epistemology usually reflects the choice of methods used within a research. Figure 3 shows these distinctions.

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Insert Figure 3 about here

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The following section expands on some of the available research methods in Figure 3 such as surveys and case studies in management research.

Survey research

Survey method can be defined as a way to collect information from one or more people on an organisationally relevant construct. It is important to note that surveys are not only questionnaires but also involve a range of methods such as questionnaires, interviews and focus groups. Surveys are commonly used methods in *positivist* paradigm in order to achieve systematic observation, interviewing and questioning thorough predetermined research questions with the intention of providing standardisation and consistency (Fink, 2005; Moser & Kalton, 1971; Scholarios, 2005).

Surveys are also appropriate methods when researcher has a high control over situation and high participation in situation through pre-determined questions. Survey method is appropriate to use while answering "what" type of research questions (Yin, 2003b). Surveys can be:

- Descriptive surveys – gives only insights to current status of situation, historical, evaluation, however tells little for deeper understanding so should be triangulated with other methods in order to build an argument.
- Analytical surveys – articulates relationships and looks at *correlation* to determine if a relationship exists between two variables in an exploratory way; *causal comparative*

to establish cause-effect relationships through group comparisons and *experimental* which involves manipulating one or more variables for increased control.

According to Fink, 2005; Scholarios (2005) survey research activities comprise of:

- Defining purpose and scope of survey according to research questions/ hypotheses (descriptive/ analytical; cross-sectional/ longitudinal)
- Constructing survey instrument which operationalises key constructs
- Designing a sampling strategy (e.g. defining population, deciding census or sample, defining sample frame)
- Survey administration and data collection (e.g. printing, distribution, getting access, persuasion, tracking response rates etc.)
- Data analysis (includes data linking, non-responses bias, hypotheses, testing)
- Interpretation and presentation of findings to stakeholders (i.e. thesis examiner, management, employees)

Multivariate research design

According to Walsh (2005) those are the tasks within multivariate research design which is commonly used in positivist paradigm:

- Choosing appropriate sampling method (Sudman, 1976)
- Choosing appropriate measurement instrument
- Choosing appropriate data analysis technique

This type of research can choose among the following sampling techniques: random sampling, systematic sampling, stratified sampling, convenience sampling, judgment sampling, quota sampling and snowball sampling.

Measurement instruments can be chosen from self-administered questionnaires vs. interview; existing scales vs. your own scales; single vs. multi-item scales; short vs. long questionnaire and interview guide vs. standard questionnaires.

Multivariate research involves multivariate data analysis such as correlation analysis, regression analysis, cluster analysis, analysis of variance, and factor analysis (exploratory and confirmatory). Firstly, correlation analysis deals with measuring how well the predicted values from a forecast model fit with the real-life data. If there is a perfect linear relationship

between the two variables; we have a correlation coefficient of 1; if there is positive correlation. If there is a perfect linear relationship with negative slope between the two variables, we have a correlation coefficient of -1. Regression analysis is a method for studying the relationship between a dependant variable and two or more independent variables in order to provide prediction, explanation and theory building.

Factor analysis aims to model correlation patterns in a useful way so as to suggest new, uncorrelated variables that explain the original correlation structure as well as allowing for contextual interpretation of the new variables.

Experimental research

Acquiring knowledge can be achieved through observation of nature, reflection and experimentation. Observation collects facts, reflection combines them and experimentation verifies the results of that combination. Hawthorne experiments are well known which was conducted in 1924 at Western Electrical Company, Chicago and investigated the relationship between working conditions such as lightening, temperature, humidity etc. and productivity. Types of experiments are (Beech, 2005):

- True/ classical experiment – subjects are assigned at random to experimental or control groups. Conditions for the experimental group (the independent variable) are manipulated by the researcher. The effects of the manipulation are measured (dependant variable)
- Quasi experiment – when it is not possible to randomise allocation to experimental and control groups.
- Passive experiment
    - Natural experiment – the experimental condition arises naturally rather than resulting from direct manipulation by the researcher.
    - Retrospective experiment – observes an existing condition and looks back in time for explanations.

Model building

Model building is a representation of reality. There are a number of modelling techniques such as cognitive maps (Eden & Ackermann, 1998), influence diagrams, Bayesian belief nets and event trees. Thinking in models is a decisive strategy of communication and explanation in the field of art and science. Conceptual models generally are developed in relation to research questions and research objectives and show the relevant variables and how those variables relate to each other. Conceptual frameworks development tasks are:

- Using graphical representations
- Revising and refining the framework
- Presenting all relevant relationships
- Thinking and theorising

It is very important to make sure the methodology relates to the chosen theoretical framework and conceptual model (Walsh, 2005).

Grounded theory

Grounded theory was discovered by Glaser et al. (1967) during the golden age of rigorous qualitative analysis. The roots of grounded theory go to the belief that theory should be discovered from data which is called 'grounded theory' (Cresswell, 1998; Dinnie, 2005). Glaser (1992) defines grounded theory as an ability to create concepts from data and to relate them according to the normal models of theory in general. The researcher's knowledge, understanding and skills foster his or her generation of categories and properties into theory building. Cresswell (1998) identifies key characteristics of grounded theory as follows:

- the aim is to discover or generate a theory
- the researcher has to set aside theoretical ideas to allow a substantive theory to emerge
- theory focuses on how individuals interact in relation to the phenomenon under study
- theory is derived from data acquired through fieldwork interviews, observations, and documents
- data analysis is systematic and begins as soon as data is available

- data analysis proceeds through identifying categories and connecting them
- further data collection or sampling is based on emerging concepts
- these concepts are developed through constant comparison with additional data
- data collection can stop when no new conceptualisations emerge
- data analysis proceeds from identifying categories, properties and dimensions (open coding) through examining conditions, strategies and consequences (axial coding) to selective coding around an emerging storyline
- the resulting theory can be reported in a narrative framework or as a set of propositions

Grounded theory in management research is useful in capturing the complexities of the context in which action unfolds, enabling researchers to better understand specific substantive issues. Grounded theory well suited to the study of complex entities through its ability to produce a versatile account of organisational action in context (Dinnie, 2005).

In addition, ethnography, participant observation, discourse analyses are commonly used methods together with grounded theory. Discourse analysis focuses on language, talk, speech acts and emotions. Narrative analysis generally refers to stories which are often used as explanations. They may reveal more about the story-telling than the apparent subject, therefore might contain structures of thought and can have implications for roles, actions and expectations (Beech, 2005).

After giving brief explanations on some of the available research methods for management research, the next section will give further details about case study method more in depth.

Case study method

Case study method allows researchers to keep the holistic, rich and significant characteristics of real-life events. Case studies are applied to topics such as "decisions, individuals, organisations, processes, programs, institutions and events" (Yin, 2003b: 12). Therefore, "case studies are rich, empirical descriptions of particular instances of a phenomenon that are typically based on a variety of data sources" (Eisenhardt & Graebner, 2007: 25; Yin, 2003b). Case studies are empirical investigations which address the following:

- To investigate a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident
- To cope with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result
- Relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result
- Benefits from the prior development of theoretical propositions to guide data collection and analysis (Yin, 2003b: 13-14).

1. When to employ case study research

Generally, case studies are the preferred method when *how* and *why* research questions are being investigated (Eisenhardt et al., 2007), when the researcher has slight control over events, and when the focus is on a contemporary phenomenon surrounded by some real-life context and unexplored well previously.

Case studies are similar to story telling about a firm. For instance, Leonard-Barton (1990) described a case study as "a history of a past and current phenomenon, drawn from multiple sources of evidence. It can include data from direct observations and systematic interviewing as well as from public and private archives. In fact, any fact relevant to the stream of events describing the phenomenon is a potential datum in a case study, since context is important" (Voss, Tsikriktsis, & Frohlich, 2002: 197).

Even though there are some critics about case studies being subjective; (Eisenhardt et al., 2007) points out that "well-done theory building from cases is surprisingly *objective*, because its close adherence to the data keeps researchers *honest*. The data provide the discipline that mathematics does in formal analytical modelling" (Eisenhardt et al., 2007: 25).

2. Case study research types

Case studies can be applied for diverse research intentions. The types of case studies are (Voss et al., 2002; Yin, 2003b):

2.1. Explanatory/ causal case studies

In explanatory case studies, the researcher tries to "determine whether event A led to event B. Thus, the researcher investigates causality between variables however it is very important not to miss any other variable that might cause B. *How* and *why* questions are related with explanatory research (e.g. Allison & Zelikow, 1999) because these types of questions cope with operational relationships calling for to be traced over time, rather than only frequencies (Yin, 2003b: 36).

2.2. Descriptive case studies

Histories and surveys are deemed to be appropriate in descriptive studies however case studies are also used in this type of research such as Whyte's Street Corner Society (1943, 1955) in Yin (2003b) where William Whyte outlines the sequence of interpersonal events over time, portrays a subculture that had not often been the topic of prior study and realizes the key phenomena such as the career progressions of lower income youths and their ability to break neighbourhood ties by using a descriptive case study method.

2.3. Exploratory case studies

It is commonly accepted in management research that case study method is suitable for exploratory phase of a research. The goal might be to develop pertinent hypotheses and propositions for further inquiry. Exploration is needed to develop research ideas and questions. As Frohlich (1998) has drawn attention to the fact that many doctoral theses begin with one or more case studies in order to produce a list of research questions that are merit pursuing more (Voss et al., 2002).

2.4. Theory building

Theory can be deemed with four components as suggested by Wacker (1998) in Voss et al. (2002: 197); "definitions of terms or variables, a domain regarding the exact setting in which the theory can be applied, a set of relationships and specific predictions". The main advantage of case study type of research in theory building is its strength in clarifying meanings and removing uncertainty in the explanation of constructs as pointed out by Mukherjee et al. (2000) in Voss et al. (2002). As it is suggested in Christensen & Sundahl (2001), Eisenhardt (1989) and Whetten (1989) in theory building, the researchers go thorough observations and classifications cycle in order to not only proof seeking but also searching for anomaly between empirical work and existing theory. Similarly Eisenhardt et al. (2007: 25) suggest that "the theory-building process occurs via recursive cycling among the case data, emerging

theory, and later, extant literature". Figure 4 shows this cycle in the process of theory building.

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Insert Figure 4 about here

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A theory is a statement of what causes what, and why. If the theory is built upon a sound classification scheme, it can explain what, and why, and under what circumstances. A theory is a contingent explanation of causality, it helps researchers and practitioners who observe phenomena under various circumstances understand why things turn out the way they do. The term *framework* maps closely to the term of building robust categorization (e.g. Porter's five forces is an attempt to define categories of phenomena).

The word *model* is synonymous with theory as it is defined here. Armed with a theory that is built upon a classification scheme, researchers can then use the theory to predict what they will observe when they go out and observe more phenomena under various conditions. If the theory accurately predicts what they actually observe, this 'test' confirms that the theory is useful under the circumstances in which the data or phenomena were observed. As Figure 4 suggests, the theory is then returned to the stage where the researcher began, confirmed but *unimproved*. Moreover, external validity is established through classification and thus, the relevant classification should not be too broad where the key variations are lost (Christensen et al., 2001).

Theory building from case studies can be achieved by two ways: (1) persuasive power of the single case (Siggelkow, 2007; Stake, 1995) and (2) theory building from multiple cases (Eisenhardt et al., 2007; Yin, 2003b).

2.5. Theory testing

Case studies are used generally together with survey type of research for triangulation purposes in theory testing research. In spite of the limited use of case studies in theory testing, there are examples of its application area such as strategy implementation (Voss et al., 2002).

2.6. Theory extension/refinement

Case studies offer robust methods in studying dynamic fields in which emerging practices take place continually. Thus, case studies are useful when looking at new application areas or extending the field more deeply or validating (if possible) previous empirical results (Voss et

al., 2002). Voss et al. (2002: 198) has built upon earlier work of Handfield and Melnyk (1998) and developed the following table (Table 2) which shows some distinctions the researcher should consider when matching research purpose with case study methodology types.

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3. Core tasks while conducting case study research

Yin (2003b: xv, 2) suggests that "empirical research advances only when it is accompanied by theory and logical inquiry and not when treated as a mechanistic or data collection endeavour. This turns out to be a basic theme of the case study method". The process of inducting theory using case studies includes specifying questions to reaching closure. Thus, the main seven tasks in a rigorous case study design are (Eisenhardt, 1989; Voss et al., 2002; Yin, 2003b):

1. Designing good case studies
2. Developing the research framework, constructs and questions
3. Choosing cases
4. Developing research instruments and protocols
5. Collecting, documenting, presenting, coding data
6. Analyzing data fairly
7. Writing a compelling report to bring the case study to closure

Moreover, Eisenhardt (1989: 533) expands on the above main tasks and proposes a framework for the process of theory building from case study research as shown in Table 3. She suggests a process that starts with definition of research questions to arrive at a closure in the research. Each step in theory building also contributes to research quality by strengthening the constructs, evidence, theory and internal/ external validity.

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Insert Table 3 about here

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To sum up, the case study inquiry tackles with the technical idiosyncratic condition in which there will be numerous variables of interest than data points, and one result. It also falls back

on multiple sources of evidence, with data requiring converging in a triangulating style. Case studies benefits from the former development of theoretical propositions to lead data collection and analysis (Yin, 2003b).

Interviews

Research interview is a conversation with a purpose and the qualitative research interview seeks to describe the meanings of central themes in the life world of the subjects. The main task interviewing is to understand the *meaning of what the interviewees say*. There are three types of interviews which are structured, semi-structured and unstructured interviews and these can be in the format of telephone, group or face-to-face interviews (McMaster, 2005):

- Structured interviews – based on a schedule of pre-prepared questions
- Semi-structured interviews – no attempt is made to anticipate the replies of the respondent, but questions are generally developed in advance
- Unstructured interviews – based on a rough checklist of topics

It is worth to note that group interviews are different than focus groups because group interviews involve (1) asking questions, (2) listening to the answers and (3) recording the replies. On the other hand, semi structured interviews are powerful methods which enable researchers to generate rich and contextually-situated data. Semi structured interviews takes place with respondents known to have been involved in a particular experience. It refers to situations that have been analysed prior to the interview. It develops on the basis of an interview guide specifying topics related to the research hypotheses. Finally, they focus on the subjective experiences under study (Dinnie, 2005).

Research interviews have a number of strengths such as being more personal form of research, enabling access to views and opinions, being flexible and responsive and being able to follow up information, access detail and depth quickly, providing comparative information on complex issues and building contacts. On the other hand, they demonstrate a few weaknesses such as interviewing can be a slow and expensive process, interviews can be difficult to be arranged, interviewer needs sufficient knowledge of the subject to sustain an intensive conversation, respondents will have little time to consider their response, can be

difficult to ensure comparability and can be unpredictable, the interviewee may be uncomfortable, difficult to talk to and so on. Table 4 summarises the advantages and disadvantages of different interviewing techniques to overcome the above weaknesses.

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Choices Researchers Have to Make

There are large overlaps among management research methods therefore; choosing a research method or a mix of methods should really depend on favouring the most advantageous one and justifying the reasons why (Yin, 2003b). First of all, according to the work developed by Beech (2005) and Mendibil (2003), there are two main drivers that influence the choice of the research paradigm, and consequently which *methods* to adopt for one particular study:

- The nature of the phenomena (i.e. research problem) under study and kind of output required leads to choice of approach
    - The researcher is expected to justify his/her approach
- Personal preferences/styles and philosophical assumptions of the researcher
    - The researcher should explicate his/her knowledge claim

Consequently, it is possible to figure out the research paradigms and methods the researcher might prefer to employ. Figure 5 maps the research paradigms and some of the research methods according to involvement of the researcher to the phenomena and the setting and the nature of reality as perceived and preferred by the researcher in line with the above two criteria. Thus we can also divide different epistemologies regarding ontological propositions '*objective versus subjective'* and the level of participation of the researcher to the research process *'involved versus independent'*.

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Insert Figure 5 about here

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Secondly, according to Yin (2003b), researchers are required to make some trade offs and choose among some research design alternatives. These elements are regarding the researcher's involvement in the research process, sample size, starting with data or literature/

existing theory resulting in theory testing or theory building or co-operative inquiry approaches, looking at a specific context or investigating a universal theory and finally confirmation or falsification. Table 5 summarizes some of these choices the researcher has to make depending on the nature of the problem and the preferences of the researcher (Yin, 2003b).

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Insert Table 5 about here

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Thirdly, the research design map as shown in Figure 3 can be considered as a robust basis for the researcher's design adapted to the relevant inquiry. Generally the choice of a research paradigm and methodology brings along the methods suitable within that paradigm and epistemology as summarised in Figure 3. This can guide the choice processes that the researcher should go thorough for a credible and valid research.

CRITERIA FOR ASSESSING THE QUALITY OF RESEARCH

To this end, this study explained various approaches to management research. Research methodology plays an essential role when designing research methodology for achieving high research quality and accuracy. Now, this paper focuses on ensuring research quality and deals with the methods and techniques that make every research reliable, generalisable, credible and feasible.

"Sound empirical research begins with strong grounding in related literature, identifies a research gap, and proposes research questions that address the gap" (Eisenhardt et al., 2007: 26). The objective, throughout the research process, is to find reliable and robust answers to these questions. However, how can the researcher ensure that the right research process will be carried out? The answer is defining an appropriate research methodology and ensuring the research quality. The following seven research quality criteria derived from literature (Easterby-Smith et al., 2004; Eisenhardt, 1989; Yin, 2003a; Yin, 2003b) as well as the researcher's conversations with leading academics in PhD symposiums, academic conferences, methodology courses and university visits. These academics involve Prof. Gerry Johnson (BAM 2007 PhD Seminar), Prof. Abby Ghobadian (Henley Management College visit 2007), Prof. Ken Platts and Dr. Steve Tanner (EurOMA 2007 PhD Seminar), Prof. Fran

Ackermann, Prof. Nic Beech and Prof. Chris Huxam at Strathclyde Business School Research Methodology Course 2005.

7-key criteria to ensure quality in this research:

1. What counts as data/ research evidence?

2. What counts for as a 'contribution' to knowledge?
   2.1 Theoretical basis for research (research should link to a theoretical debate)
   2.2 Enfolding literature

3. What counts for as a 'contribution' to practice?

4. Internal validity

5. External validity / Generalisability

6. Construct validity
   - Triangulation of data (e.g. case study research not only embracing interviews)
7. Reliability
   - An auditable process in data analysis that another person could adopt

The next section explains what the above research quality criteria are:

Data/ research evidence

What counts for data which will provide evidence to answer research questions is very important in order to conduct a good quality research with credibility. Data can be 'raw data', 'secondary data' or 'worked data' (based on the use of analytical techniques). The variety of data/ evidence can be gathered and created through research and worked and used in a variety of ways – these options require overt decision making on the part of the researcher. Some data examples are (Beech, 2005):

- Organisational data
- Financial and performance figures
- Experimental data
- Reported perceptions (i.e. others, yours)

- Transcripts
- Field notes
- Documents
- Artefacts
- Created representations (e.g. cognitive maps, metaphors, narratives)
- Project processes and outcomes
- Workshop outcomes (captured using e.g. flip charts, response sheets, IT)
- Observations etc.

Contribution to knowledge

One of the major expectations from a good quality of research is its contribution to knowledge in terms of novelty of research and the added value to what is known already in literature. This contribution could possibly in the following means (Beech, 2005):

- Confirmation of existing theories
- Extension of a theory into new areas
- New conjunctions between previously separate theories or disciplines
- Advances in methodology
- Developments in the application of techniques
- A proof
- Disproving a null-hypothesis
- Generation of hypothesis
- Generation of grounded theory
- Generations of insights
- Theoretical reflection on practice

Contribution to practice

Contribution to practice is a relevant research quality criterion if the research is mainly in applied research domain. This kind of contribution can be in the form of acknowledging policy makers or practitioners in such a way the research implications and conclusions can help them in decision making into business or social issues. Since management research is applied research, therefore applicability in practice needs a context specific robust

classification while theory building. Furthermore, it has been a popular topic in management research to connect theory with practice recently as emphasized in academic conferences in 2007 such as Irish Academy of Management, British Academy of Management and Strategic Management Society Conference.

Internal validity

This criterion is related to "explanatory and causal studies" merely, and not for "descriptive or exploratory" studies. This research quality standard refers to setting up a causal relationship, whereby definite circumstances are exposed to lead to other circumstances, as distinguished from spurious relationships (Yin, 2003b: 34).

External validity/Generalisability

This quality criterion brings up establishing the domain to those research findings can be generalised so as to ensure credibility. The external validity has been a key problem for case study research. Critics generally declare that single cases present a poor basis for generalising, thus *replication logic* should be applied in order to test and to replicate the findings in multiple contexts (Eisenhardt et al., 2007; Yin, 2003b: 37).

Construct validity

Construct validity ensures that the correct operational measures for the concepts being studied are in place. In order to ensure construct validity, the use of multiple sources of evidence, in a way encouraging convergent lines of inquiry which is appropriate during data collection. A second tactic is to establish a chain of evidence, also relevant during data collection. The third tactic is to have the draft case study report reviewed by key informants (Yin, 2003b).

Reliability

The research should demonstrate that the operations of a study – such as the data collection procedures – can be repeated, with the same results in an auditable way (Yin, 2003b). For instance, the process the researcher use going thorough in data analysis should be auditable and should follow a clear process that another person could adopt (i.e. it is not idiosyncratic). Hence, the purpose of reliability as a research quality criterion is to lessen the mistakes and biases in a research. Development of a case study protocol and a case study database are tactics to overcome reliability issues in case study research. "In this sense, an auditor is also performing a reliability check and must be able to produce the same results if the same procedures are followed. A good guideline for doing case studies is therefore to conduct the research so that an auditor could repeat the procedures and arrive at the same results" (Yin, 2003b: 39). Table 6 summarises some of general tactics to cope with research quality criteria.

……

Insert Table 6 about here

……

Yin (2003b: 34) suggests the following tactics (Table 7) in order to cope with some of the above research quality criteria.

……

Insert Table 7 about here

……

CONCLUSIONS

The objective of this paper is to clarify the concept of research methodology and its implications for management research. To this end, the characteristics of research philosophies and a generic research methodology were described. It is suggested that the content and the proposition of the research questions and the researchers preferences should be analysed in order to define the methodological requirements of a particular study.

Furthermore, this paper clarified how to warrant the choice of the appropriate research methods, the philosophical research paradigms and their assumptions that surround a research by suggesting helpful tactics for research design choices and processes. Hopefully, the tactics

and techniques presented in this paper to choose the most conducive methodology will be of help for management researchers.

Finally, this paper concludes asserting that research quality assessment is very important to ensure credible research findings and implications. Therefore case study type of research which is a powerful method in management research is chosen and expanded on regarding seven research quality criteria derived from literature.

APPENDIX

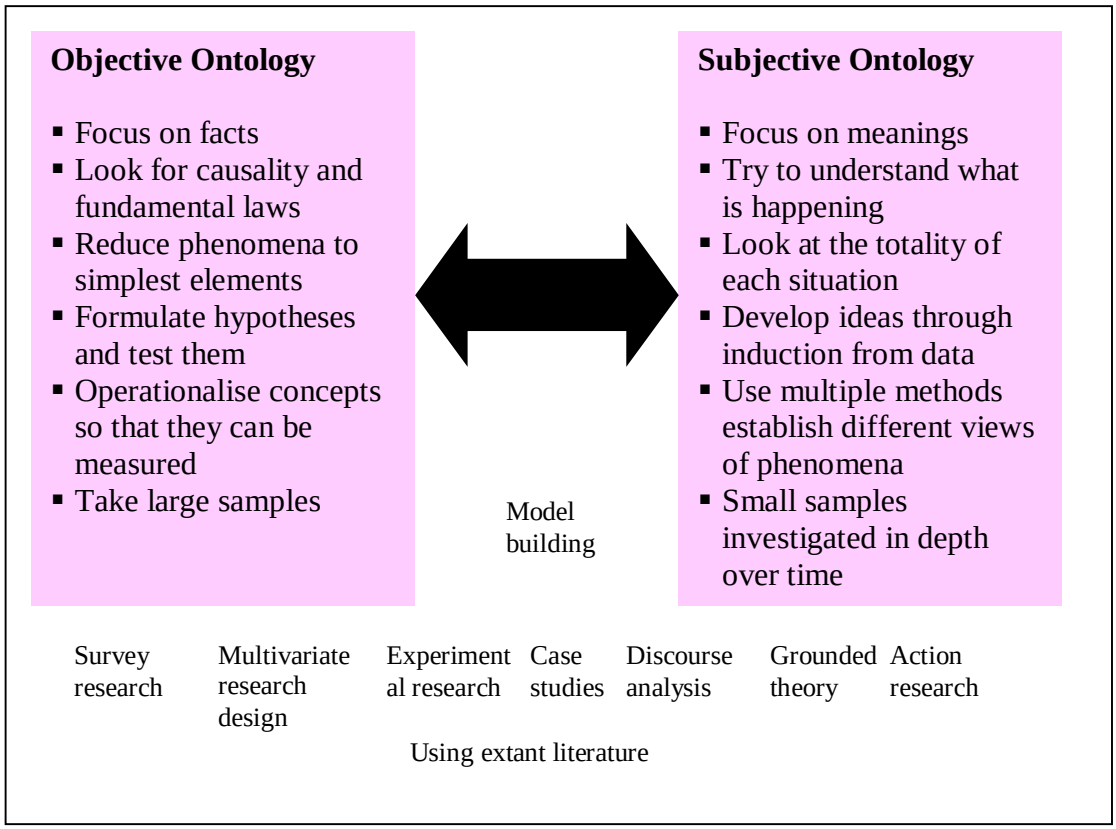

Figure 1. Choice of research methods related to ontology (Beech, 2005)

Table 1. Ontologies and epistemologies in social science research.

Adopted from (Denzin & Lincoln, 2000; Easterby-Smith et al., 2004)

Elements	**Positivism**	**Critical realism**	**Interpretivism**
Truth	Is determined through verification of predictions	Requires consensus between different viewpoints	Depends on who establishes it
Facts	Concrete	Concrete but cannot be accessed directly	All human creations
Aims	Discovery	Exposure	Invention
Starting points	Formulation of explicit hypotheses which guide research	Suppositions/ Research Questions	Meanings/ Research questions
Research position (goal investigation)	Prescriptive, causal, deductive, theory confirming, ungrounded	Exploratory, descriptive, theory building, inductive, analytical	descriptive
Direction of research inquiry	Measurement and analysis of causal relationships between variables that are generalisable across tome and context	Development of idiographic knowledge based social experiences such as human ideas, beliefs, perceptions, values etc.	Development of idiographic knowledge based social experiences such as human ideas, beliefs, perceptions, values etc.
Designs	Experiment, survey	Triangulation, case study, convergent interviewing	Reflexivity, interviews, participant observation
Methodology	Outcome oriented, verification oriented	Process oriented, discovery oriented	Observation, process oriented
Techniques	Measurement	Survey	Conversation
Sample size	Large	Small	Very small
Data collection	Structured	Semi-structured, unstructured	Unstructured
Hardware, software	Questionnaires, statistical software programs	Tape recorders, interview guides, transcripts, qualitative software programs, visual methods	Tape recorders, interview guides, transcripts, qualitative software programs, visual methods
Type of data gathered	Replicable, discrete elements, statistical	Information-rich, contextual, non-statistical	Information-rich, contextual, non-statistical, somewhat subjective reality
Interview questions	Mainly closed with limited probing	Open with probing	Very open
Interaction of interviewer and phenomenon	Independent and value-free, a one way mirror	Mutually interactive but controlled by triangulating data, an open window	Passionate participant, transformative intellectual
Respondent's perspective	Emphasis on outsider's perspective and being distanced from data	Emphasis on the insider's perspective	Emphasis on outsider's perspective and being distanced from data
Information per respondent	Varies (specific to question)	extensive (broader question)	extensive
Analysis/ Interpretation	Verification/ falsification	Probability	Sense-making
Type of data analysis	Objective, value-free, statistical methods	Non-statistical, triangulation	Value-loaded, non-statistical
Causality	Cause-effect relations	Causal tendencies, generative mechanisms	Not addressed
Outcomes	Causality	Correlation	Understanding
Judgement of research quality	External validity and reliability are critical	Construct validity is important	Credibility, transferability, dependability, and confirmability

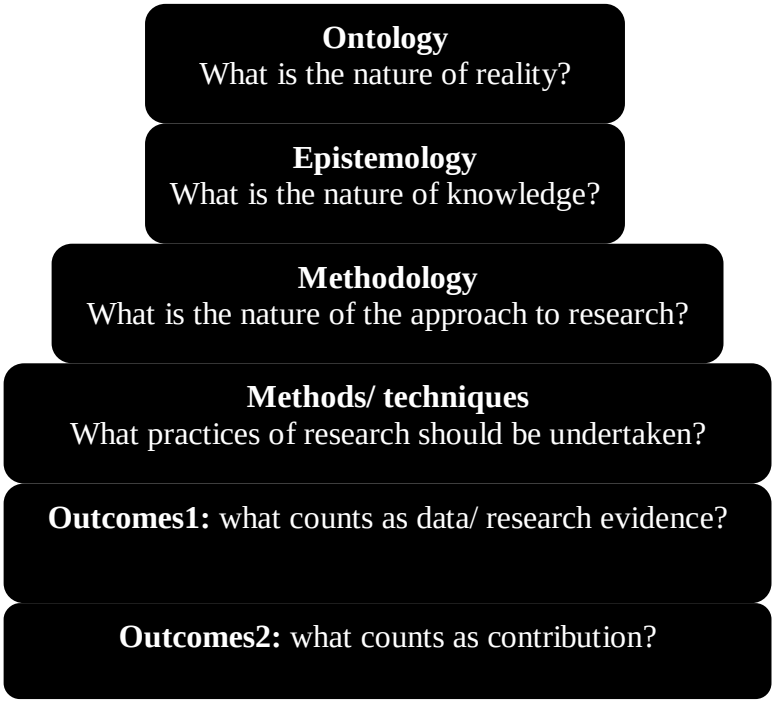

Figure 2. Research methodology design building blocks (Beech, 2005)

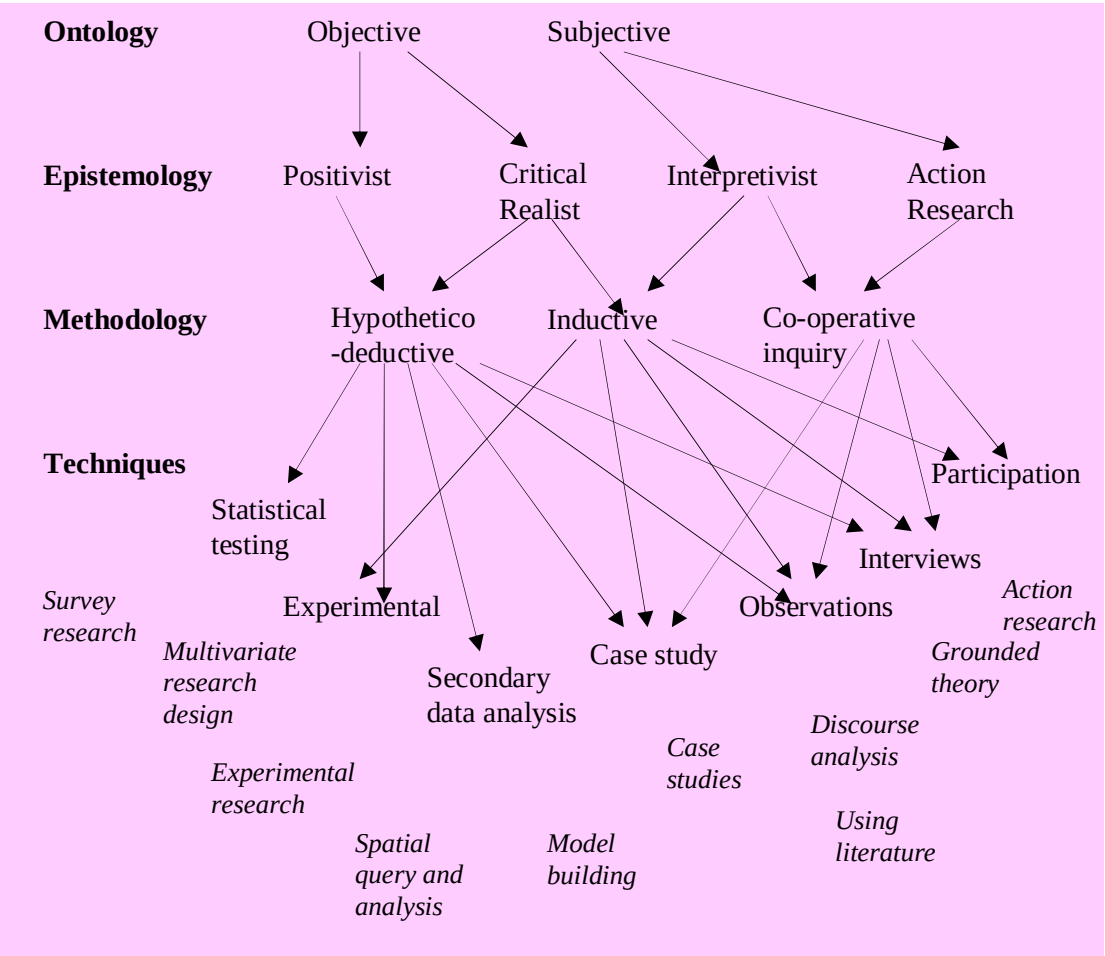

Figure 3. Research design map (Beech, 2005)

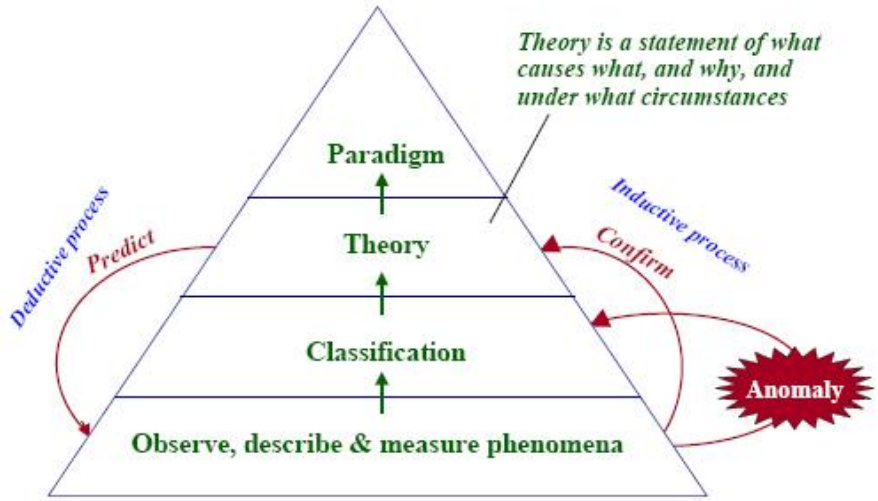

Figure 4. The process of theory building

Table 2. Matching research purpose with case study types

Adopted from (Voss et al., 2002: 198)

Purpose	**Research question**	**Research structure**
Exploration Uncovering areas for research and theory development	Is there something interesting enough to justify research?	In-depth case studies Unfocused, longitudinal filed study
Theory building Identifying or describing key variables Identifying linkages between variables Identifying 'why' these relationships exist	What are the key variables? What are the patterns or linkages between variables? Why should these relationships exist?	Few focused case studies In-depth field studies Multi-site cases studies Best-in-class case studies
Theory testing Testing the theories developed in the previous stages Predicting future outcomes	Are the theories we have generated able to survive the test of empirical data? Did we get the behaviour that was predicted by the theory or did we observe another unanticipated behaviour?	Experiment Quasi-experiment Multiple case studies Large-scale sample of population
Theory extension/ refinement To better understand the theories in light of the observed results	How generalisable is the theory? Where does the theory apply?	Experiment Quasi-experiment Case studies Large-scale sample of population

Table 3. Process of building theory from case studies (Eisenhardt, 1989)

Step	Activity	Reason
Getting started	Definition of research question Possibly a prior construct	Focuses efforts Provides better grounding of construct measures
Selecting cases	Neither theory nor hypotheses Specific population Theoretical not random sampling	Retains theoretical flexibility Constraints irrelevant variation and sharpens external validity Focuses efforts on theoretically useful cases – i.e. those that replicate or extend theory by filling conceptual categories
Crafting instruments and protocols	Multiple data collection methods Qualitative and quantitative data combined Multiple investigators	Strengthens grounding of theory by triangulation of evidence Synergistic view of evidence Fosters divergent perspectives and strengthens grounding
Entering the field	Overlap data collection and analysis including field notes Flexible and opportunistic data collection methods	Speeds analyses and reveals helpful adjustments to data collection Allows researchers to take advantage of emergent themes and unique case features
Analysing data	Within case analysis Cross cases pattern search using divergent techniques	Gains familiarity with data and preliminary theory generation Forces researchers to look beyond initial impressions and see evidence through multiple lenses
Shaping hypotheses	Iterative tabulation of evidence for each construct Replication, not sampling, logic across cases Search evidence for 'why' behind relationships	Sharpens construct definition, validity and measurability Confirms extends and sharpens theory Builds internal validity
Enfolding literature	Comparison with conflicting literature Comparison with similar literature	Builds internal validity, raises theoretical debate and sharpens construct definitions Sharpens generalizability and raises theoretical level
Reaching closure	Theoretical saturation when possible	Ends process when marginal improvement becomes small

Table 4. Strengths and weaknesses of research interviews (McMaster, 2005)

Structured interviews	**Semi-structured interviews and unstructured interviews**
Strengths	
Comparable data	More informal
Easier to time and control the interview	Not imposing preconceptions, or putting words in the respondents mouth
Suitable for less experienced interviewer	Allows for new points to be followed up
Weaknesses	
Imposing a structure and predicting the answers	Can be difficult to compare the results
Inflexible and difficult to follow up points of interest	Easy to lose control of the interview Need for a experienced interviewer who can hold an interesting conversation during the interview

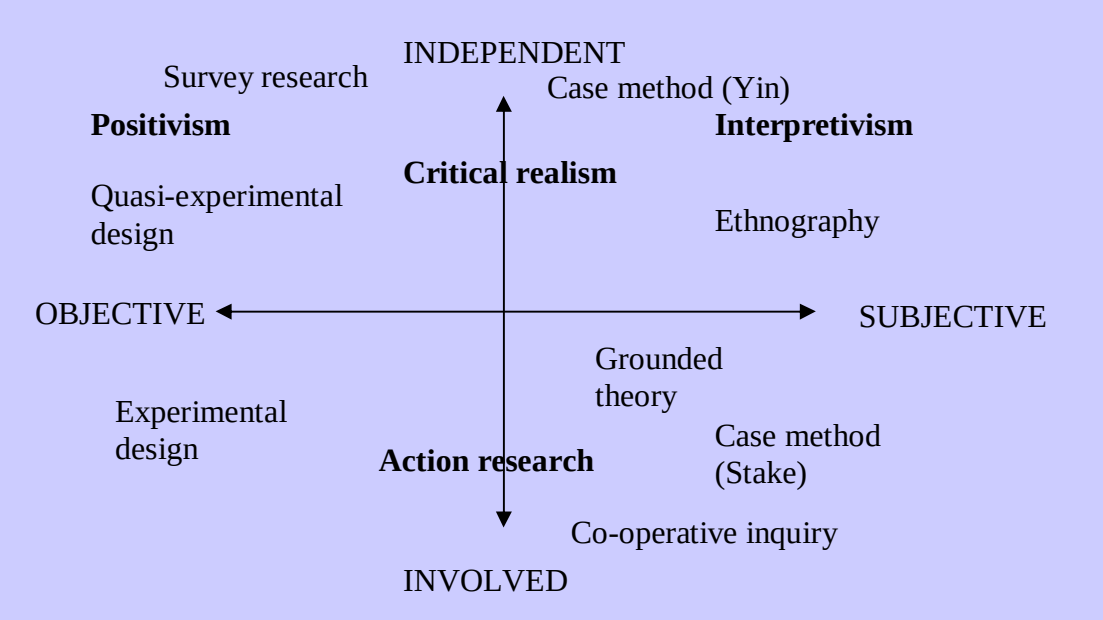

Figure 5. Research design and related method choices

Adopted from (Easterby-Smith et al., 2004)

Table 5. Key choices of research design (Yin, 2003b)

Researcher is independent	Versus	Researcher is involved
Large samples	Versus	Small numbers
Testing theories	Versus	Generating theories
Experimental design	Versus	Fieldwork methods
Universal theory	Versus	Local knowledge
Verification	Versus	Falsification

Table 6. Research design viewpoints related to research quality. Adopted from (Easterby-Smith et al., 2004: 53)

	Viewpoint		
	Positivist	**Critical Realist**	**Interpretivist**
Validity	Do the measures correspond closely to reality?	Have a sufficient number of perspectives been included?	Does the study clearly gain access to the experiences of those in the research setting?
Reliability	Will the measures yield the same results on other occasions?	Will similar observations be reached by other observers?	Is there transparency in how sense was made from the raw data?
Generalisability	To what extent does the study confirm or contradict existing findings in the same field?	What is the probability that patterns observed in the sample will be repeated in the general population?	Do the concepts and constructs derived from this study have any relevance to other settings?
Most important criterion in judgement of research quality	External validity and reliability	Construct validity	Credibility, transferability, dependability and confirmability

Table 7. Some ways to deliver research quality criteria

Research quality criteria	Case study tactic	Phase of research in which tactic occurs
Construct validity	▪ Use multiple sources of evidence ▪ Establish chain of evidence ▪ Have key informants review draft cases study report	▪ Data collection ▪ Data collection ▪ Composition
Internal validity	▪ Do pattern-matching ▪ Do explanation-building ▪ Address rival explanations ▪ Use logic models	▪ Data analysis ▪ Data analysis ▪ Data analysis ▪ Data analysis
External validity	▪ Use theory in single-case studies ▪ Use replication logic in multiple-case studies	▪ Research design ▪ Research design
Reliability	▪ Use cases study protocol ▪ Develop case study database	▪ Data collection ▪ Data collection

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