A snapshot on qualitative research method

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This paper presents an overview of different research paradigms that are used in research. The aim of this article focuses on qualitative research. Qualitative research has gaining momentum for the past decade or so. Unfortunately, not many people fully understand how to conduct a well designed qualitative research. It is hoped that this article can provide some guidance and assistance to those who wish to embark on qualitative research.

Key words: Paradigms, qualitative, quantitative, case, interviews, reliability, validity, ethics.

BACKGROUND

The author has been with Education Research Reviews Journal first as a peer-reviewer, then assistance editor and now Editor-in-Chief. Over this time, he came across quite a few manuscripts and felt that while most of the quantitative researches are of high quality, there appears to be a lack of understanding on how to conduct a qualitative research.

The purpose of this article is then trying to provide a blueprint for research methodology using qualitative research method. It is hope that this article can provide some insights to how qualitative research should be conducted.

The article starts with discussion on different research paradigms, followed by research method, such as qualitative and/or quantitative. Arguments on qualitative research as well as case building are discussed. The most important aspects of qualitative research protocol are highlighted.

Different paradigms used for research

The first step in research design is to choose the research paradigm that would be most suitable for the research. Four major research paradigms of positivism, constructivism, critical theory and realism are discussed.

A paradigm is ‘an understanding or view of the world and is used to determine what problems are worthy of research exploration as well as what methods are available to contend with these research problems.’ (Perry and Cavaye, 2004, p.2.2). Therefore, as suggested by Guba and Lincoln (1994, p.105) a paradigm is a ‘basic belief system or worldview that guides the investigator.’ There are many paradigms being developed to guide research with most of these paradigms based on qualitative and quantitative beliefs, while others such as Burrell and Morgan (1979) argue that there are three levels to the approach: the philosophical level, which reflects basic beliefs about the world; the social level, which provides guidelines about how the researcher should conduct his or her endeavour; and the technical level, which involves specifying the methods and techniques which should ideally be adopted in conducting research. Easterby-Smith et al., (1991) classified paradigms as positivist and phenomenological based on their deductive and inductive orientation. Guba and
Lincoln (1994), Perry et al. (1999) summarised the paradigms into four categories that could be used to guide research: positivism, constructivism, critical theory and realism. In the following review, each paradigm will be discussed in terms of its ontology, epistemology and methodology.

The following table based on O'Leary (2001, p.65) summarises the four major scientific research paradigms.

### Positivism

The ontology of positivism (Table 1, column 1) holds that that social world exists externally, and that its properties can be measured through objective methods. It also holds that knowledge is only of significance if it is based on observations of this external reality. (Easterby-Smith et al., 1991, p.22) The primary role of the research enquiry is based on theory-testing (deduction). This paradigm also focuses on measurement and analysis of causal relationships between variables that are consistent across time and context. (Perry et al., 1999, p.16-17; Easterby-Smith et al., 1991; Ticehurst and Veal, 2000) The primary data collection techniques include controlled experiments and sample surveys, which are outcome-oriented and assume natural laws and mechanisms. In other words, the positivists are concerned with the confirmation or disconfirmation of a theory.

The epistemology perspective requires the researcher to be separated from the research process so that he/she views the world through a ‘one way mirror’ (Guba and Lincoln, 1994, p.110) and to maintain value-free and theory-free. The other advantages of this scientific paradigm include wide coverage of the range of situations: it can be fast and economical and is statistically orientated so that credibility is assured. (Easterby-Smith et al., 1991).

The methodology for this paradigm is to achieve its aims through well-structured experiments and surveys that can be controlled by the researcher and are aimed at verification or negation of theoretical hypotheses.

### Constructivism

The ontology of constructivism (Table 1, Column 2) proposes that truth is subjective as opposed to the positivists’ singular and objective views. In this paradigm, truth is based on individuals’ perceptions of reality - ‘truth is a construction which refers to a particular belief system held in a particular context.....Meaning has more value than measurement, for perception itself is the most important reality...constructivists enquire about the ideologies and values which lie behind a finding. Researching this created knowledge depends on the interaction between interviewer and respondent. (Perry et al., 1999, p.18). The epistemology perspective calls for the researcher and respondent to create findings jointly. (Lincoln and Guba, 1985).

The methodology of this paradigm holds that the researcher must be fervently involved during the research purpose and requires the researcher to become a ‘passionate participant’ (Lincoln and Guba, 1985, p.17; Perry et al., 1997; Perry et al., 1999). The research instrument used is based on dialogue and consensus. (Lincoln and Guba, 1985)

### Critical paradigm

The ontology of critical theory (Table 1, column 3) is one of historical realism. This paradigm assumes comprehensive social realities, incorporating historically situated structures. Within this paradigm, the researcher aims at ‘critiquing and transforming social, political cultural, economic, ethnic and gender values.’ (Perry et al., 1999, p.17).

The epistemology is the researcher’s ability to interact with the research participants. Research is based on perceptions held by group of individuals. The process depends on the researcher’s expertise, experience and his/her ability, with the aim to transform the ignorance and misconception into a new, informed perception. (Guba and Lincoln, 1994).

### Realism paradigm

This is the final paradigm. The ontology of realism suggests that the external reality is probably true, rather than completely true. It suggests that there is a ‘real’ world to be discovered even if it is only imperfectly and probabilistically apprehensible. (Guba and Lincoln, 1994) Whilst ‘constructivists and critical theorists consider there are many realities, realists consider that there is only one reality although several perceptions of that reality must be triangulated to obtain a better picture of it’ (Perry et al., 1999, p.18).

Realism research is to examine human behaviour and to answer the “how” and “why” questions in dealing with a particular issue/problem. Information obtained from this type of research cannot be claimed as conclusively representing reality, but rather a ‘window’ through which this reality may only be imperfectly apprehended. (Perry et al., 1999, p.18).

Further, the researcher is neither isolated from the research, as the positivists contend, nor attempting to be passionate and attempting to transform the findings (like constructivists and critical theorists). Rather, the researcher is part of the research but remains as objective as possible through the research process - he or she cannot be completely value-free but can aim to be value-aware. (Perry et al., 1997).

Within this paradigm process, the researcher uses case
**Table 1. Principal research paradigms and associated views**

<table>
<thead>
<tr>
<th></th>
<th>Positivism paradigm (1)</th>
<th>Constructivism paradigm (2)</th>
<th>Critical theory paradigm (3)</th>
<th>Realism paradigm (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ontology</strong></td>
<td>Science is able to discover the true nature of reality. There is a single apprehensible reality whose nature can be known and characterised.</td>
<td>Relativism-truth is subjective, based on the individual’s perceptions of reality, resulting in a state of multiple realities</td>
<td>Social realities are apprehensible based on historically situated structures. Focuses on analysis &amp; transformation of social, political, cultural, economic, ethnic and gender values</td>
<td>Critical realism-reality is apprehensible but can only be imperfectly and probabilistically comprehended.</td>
</tr>
<tr>
<td><strong>Epistemology</strong></td>
<td>Observer is separate from the research process; findings are value-free &amp; may be generalised to entire population. Theory-free, findings true.</td>
<td>Researcher and respondent create findings jointly; researcher and research subject are mutually interactive.</td>
<td>Interactive link between researcher and research object. Reality is based on perceptions held by group of individuals.</td>
<td>Researcher is part of research process, but remains as objective as possible. Modified dualist/objectivist. Findings are probably true.</td>
</tr>
<tr>
<td><strong>Common methodologies and processes</strong></td>
<td>Experimental / manipulative; verification of hypotheses; chiefly quantitative methods such as experiments / surveys.</td>
<td>Depends on a researcher being a ‘passionate participant’ in research process; consensus; dialogues. Principally qualitative.</td>
<td>Depends on the interpretative ability of a scholar who is a ‘transformative intellectual’; focus groups. Principally qualitative.</td>
<td>Depends on triangulating several perceptions of reality to capture a better picture of phenomenon. Modified experimental / manipulative; case studies / convergent interviewing. Principally quantitative, but may include qualitative techniques.</td>
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</table>


Further, the key concept of quantitative research is in dealing with variables, so that there is a link between data and variables. (Punch, 1998). On the other hand, qualitative research deals with subjectively constructed rather than objectively determined. It is not concerned with statistical analysis. It involves gathering a great deal of information through small numbers of people or organisations. It is based on the beliefs that ‘a full and rounded understanding of the organisational experiences and situations of a few individuals, however unrepresentative they may be, is of more value than a limited understanding of a large, representative group’. (Ticehurst and Veal, 2000, p.21) ‘Qualitative data can be defined as empirical information about the world, not in the form of numbers.’ (Punch, 1998, p.59)

Furthermore, unlike the statistical findings of the quantitative methods, the findings of qualitative research are not to be used to test a theory; rather they are used to build a theory or to identify a phenomenon for further research.

**Qualitative research**

Comparison between the choice of methodology that is part of a paradigm: quantitative and qualitative.

In summary, quantitative research is based on presentation of statistical information. That is, a research methodology that involves statistical analysis. ‘It relies on numerical evidence to draw conclusions or to test hypotheses. To be sure of the reliability of the results it is often necessary to study relatively large numbers of people or organisations.’ (Ticehurst and Veal, 2000, pp.20-21) The statistical significance levels of the findings can then be generalised.

In answering the research questions, quantitative research aims to answer the ‘what’, ‘who’, ‘how much’ and ‘how many’ questions - explanatory in nature, whilst qualitative research aims to answer the ‘why’ and ‘how’ questions - exploratory in nature.

Studies/convergent interviews, based on qualitative analysis technique, in order to present a fair degree of confidence of its findings to represent the reality without claiming fully that they are reality. (Perry et al., 1997).

Further, the key concept of quantitative research is in dealing with variables, so that there is a link between data and variables. (Punch, 1998). On the other hand, qualitative research deals with subjectively constructed rather than objectively determined. It is not concerned with statistical analysis. It involves gathering a great deal of information through small numbers of people or organisations. It is based on the beliefs that ‘a full and rounded understanding of the organisational experiences and situations of a few individuals, however unrepresentative they may be, is of more value than a limited understanding of a large, representative group’. (Ticehurst and Veal, 2000, p.21) ‘Qualitative data can be defined as empirical information about the world, not in the form of numbers.’ (Punch, 1998, p.59)

Furthermore, unlike the statistical findings of the quantitative methods, the findings of qualitative research are not to be used to test a theory; rather they are used to build a theory or to identify a phenomenon for further research.

**Research design**

Research designs are about organising research
Table 2. Key choices of research design

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<tr>
<td>Researcher is independent</td>
<td>Researcher is involved</td>
</tr>
<tr>
<td>Large samples</td>
<td>Small numbers</td>
</tr>
<tr>
<td>Testing theories</td>
<td>Generating theories</td>
</tr>
<tr>
<td>Experiential design</td>
<td>Fieldwork methods</td>
</tr>
<tr>
<td>Verification</td>
<td>Falsification</td>
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Source: adapted from Easterby-Smith, Thorpe & Lowe (1991)

activities, including data collection, in order to achieve the predefined research aims. Table 2 summarised the five key choices for research design.

Qualitative methods are required to explore this complex issue in depth, in order to gauge peoples’ behaviour and attitude when faced certain situation. Further, when the extent of theory development relevant to the research is considered to be low, then ‘case study’ is a suitable strategy for theory generating. The information obtained could assist in theory building that might be further examined through quantitative methods.

Secondly, the type of information obtained for the purpose of this research can only be gained from in-depth detail of the participants’ attitude and behaviour. ‘...the need to delve deep to gain an understanding of the phenomenon.’ And ‘the depth and detail of qualitative data can be obtained only by getting physically and psychologically closer to the phenomena through in-depth interviews...’ (Perry et al., 1999, pp. 20-21)

Defining and justifying the use of ‘case study’ research

Having selected the research paradigm and a qualitative research method, it is now necessary to apply this methodology for data collection and analysis - the qualitative ‘case study’ methodology within the realism paradigm.

Definition of case study research

A case study is a description of a management situation over time that provides a rich description of the situation. Case study is defined as 'a research strategy that focuses on understanding the dynamics present within single settings'. (Eisenhardt, 1989, p.534)

Yin (1994), however, focuses on case study research as actual processes and the use of case studies as a researching tool. He defines case study as:

‘...an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident and in which multiple sources of evidence are used; and should not only be looked upon as a data collection tactic or solely as a design feature, but also as part of a comprehensive research strategy.’ (p.13)

Perry (2001, p.305) synthesises some of the literature and define case research as:

1. an investigation of a contemporary, dynamic phenomenon and its emerging (rather than paradigmatic) body of knowledge (Eisenhardt 1989; Yin 1994; Romano 1989; Chetty 1996; Gable 1994; Bonoma 1985)
2. within the phenomenon's real-life context where the boundaries between the phenomenon and context under investigation are unclear (Bonoma 1985; Chetty 1996; Stake 1994; Yin 1994)
3. when explanation of causal links are too complex for survey or experimental methods (Eisenhardt 1989; McGuire 1997) so that single, clear outcomes are not possible (McGuire 1997)
4. using interviews, observation and other multiple sources of data. (Bonoma 1985; Perry 1998; Robson 1993)

Case research methodology

This section justifies the strategies adopt in choosing case study as the research tool. Yin (1994) proposes that the choice of the right research methodology among the five strategies, namely histories, experiments, archives, surveys and case study, is dependent on satisfying three situations. These situations are: the type of research question posed; if the research requires the researcher to have direct control of the participants' behaviour; and the degree of the research focus. Table 3 summarised these three conditions.

Form of research questions posed - the research questions ‘how’ and ‘why’ are better addressed by experiment or the case research method. "If you were studying ‘who’ participated in riots, and ‘how much’ damage had been done, you might survey residents...or conduct a ‘windshield survey’ of the riot area. In contrast, if you wanted to know ‘why’ riots occurred, you would have to conduct [case research] interviews and draw upon a wider array of documentary information." Yin (1994, p.8).

Further, case research methodology usually addresses research problems within the realism paradigm (Perry et al., 1999) and tries to explain things (phenomenon) rather than measure them.

That is, the research problem is a usually a “how and why” problem. Yin (1994, p.18) states that “how” and “why” questions [in case research are] ... exploratory ... such questions deal with operational links needing to be traced over time, rather than mere frequencies or incidence ...’ that are used in quantitative research such as surveys. Thus, case study research usually involves a relatively complex, social science issue about which little is known. (Carson et al., 2001) Therefore, the purpose of
Table 3. Three conditions for determining the appropriate type of research method

<table>
<thead>
<tr>
<th>Research method</th>
<th>Form of research question</th>
<th>Requires control over behavioural events?</th>
<th>Focuses on contemporary events?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment</td>
<td>How, why</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Survey</td>
<td>Who, what where, how many, how</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Archival analysis</td>
<td>Who, what, where, how many, how</td>
<td>No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>History</td>
<td>How, why</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Case Study</td>
<td>How, why</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Source: adapted from Yin (1994)

this research is of exploratory nature, with an attempt to understand and define ethical behaviour in business. The data obtained could be used to develop a frame of reference and definition of the problem/phenomenon under study and to engage in detailed examination of its implications.

As with the positivist, those who require a significant degree of control over behavioural events should use the experiment method. Those who cannot control events should use the case research or survey method because these two methods do not allow control over what is going on in the real world. Case study methodology is most suitable when the researcher attempts to understand the complex contemporary events in certain behaviour, whereas the researcher has no control over the dynamic behaviour and variable under investigation. (Bonoma 1985; Yin 1994).

Because this research is focused on the contemporary issue and an attempt to develop an understanding of the phenomena, the case study research method is appropriate choice. Further, case research does not only focus on gathering information on contemporary events but also allows the researcher to obtain in-depth information, as well as providing tremendous details on the research topic. (Patton 1990).

Therefore, case research is the appropriate choice when the research is focused on contemporary issue under investigation, the researcher is unable to control the behaviour and the research is attempting to answer the ‘how’ and ‘why’ questions, as illustrated in Table 3.

Construct validity

In simple terms, construct validity is to establish correct operational measures for the concepts being studied. (Perry 2001). Construct validity is ‘the ability of a measurement instrument to measure a construct or concept’ (Aaker and Day, 1980) The heart of case research involves construct validity because researchers are always trying to establish agreement or disagreement about what a construct means. There are three tactics that can be used to increase construct validity (Table 4 row 1).

Perry (2001) suggests the first, exploratory stage of case research is being flexible from interview to interview, allowing refined understanding of a construct to occur. Second, use of prior theory before and during the convergent interviews, that is, checking and cross-checking ideas with previous researchers in the literature and train-gulatting the findings as much as possible.

The construct validity of this research is based on the flexibility of introducing appropriate cases during the interview, to allow the participant to introduce his/her own case scenarios.

Multiple sources of evidence were obtained through a literature review, case research review protocols, and documents collected from the participants during the interviews.

The triangulation process based on Patton (1990 as cited in Perry 2001, p.319) can be considered:
Table 4. Case study tactics for four design tests

<table>
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<tr>
<th>Tests</th>
<th>Case Study Tactics</th>
<th>Phase of research in which tactics occur</th>
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<tbody>
<tr>
<td>1. Construct Validity</td>
<td>- use multiple sources of evidence</td>
<td>Data collection</td>
</tr>
<tr>
<td></td>
<td>- establish chain of evidence</td>
<td>Data collection</td>
</tr>
<tr>
<td></td>
<td>- have key informants review draft case study report</td>
<td>Data collection</td>
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<td>Data analysis</td>
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<tr>
<td>2. Internal validity</td>
<td>- do pattern-matching</td>
<td>Data analysis</td>
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<td></td>
<td>- do explanation-building</td>
<td>Data analysis</td>
</tr>
<tr>
<td></td>
<td>- do time-series analysis</td>
<td>Data analysis</td>
</tr>
<tr>
<td>3. External validity</td>
<td>- use replication logic in multiple case studies</td>
<td>Research design</td>
</tr>
<tr>
<td>4. Reliability</td>
<td>- use case study protocol</td>
<td>Data collection</td>
</tr>
<tr>
<td></td>
<td>- develop case study database</td>
<td>Data collection</td>
</tr>
</tbody>
</table>

Source: Yin 1994, p.33

1. Several sources, for example, interviews with different actors in a case;
2. Several types of sources, for example, an interview and observations about a case;
3. Several analysts, for example, having colleagues recode transcripts of interview; and
4. Several perspectives, for example, qualitative and quantitative methods.

A chain of evidence is established for this research as is included either in the main text or as an appendix to the report. Further, research protocol such as the research interview guide has been discussed with key personnel and through pilot research to clarify its ambiguities in order to increase the construct validity of the research.

External validity/transferability

External validity is concerned with the generalisability of research findings beyond the scope of the cases, to the population. (Perry 2001, p.319; Lincoln and Guba, 1985).

Care is taken to select the appropriate cases, as well as the participants, to ensure the external validity in theory building and analytical generalisation are achieved. In analytical generalisation, the researcher is striving to generalise a particular set of results to some broader theory (Yin 1994, p.36). ‘For case research must be primarily theory-building, rather than the testing of the applicability of a theory to a population. (Perry 2001, p.320)

Internal validity

Internal validity is a concern only for causal (explanatory) case studies, in which an experiment is required to establish a direct cause link between x and y. (Yin 1994; Perry 2001) This is not appropriate for exploratory studies as these studies are not concerned with making causal statements. Therefore, with qualitative research, internal validity is not of a major concern. However, it is still necessary to eliminate or minimise contradiction and ambiguity.

Internal validity is achieved through prior theory, proper probing during the interview, and good in-depth listening skills. (Perry 2001) Internal validity is enhanced during the data analysis stage to establish linkages between data collected in the form of inferences, explanations and meanings, to ensure that conclusions drawn have been systematically explored. (Yin, 1994). Further, internal validity for this research is achieved through within-case analysis, in order to build explanation. (Yin 1994; Miles and Huberman, 1994)

Reliability/dependability

Reliability refers to how consistently a technique measures concepts so that other researchers will get the same results when the process is replicated. (Perry 2001; Yin 1994) Therefore, it is necessary to develop case study protocol in the research design stage and use this protocol to collect data and develop a case database during the data collection stage. The database provides a copy of all-important documents and evidences used - for example, protocol, consent form and interview transcripts. In short, all procedures must be documented so that others can replicate. (Yin 1994)

In order to improve the reliability of this research, it may be possible to engage someone to assist in conducting interviews, plus the cross-checking of all findings during the data analysis stage. These steps can help in minimise
interviewer bias.

**Prior theory**

‘Although case research can have elements of theory building and theory testing, there is controversy about how much theory-building or induction compared to theory-testing or deduction should occur in the research’ (Perry 2001, p.307). Eisenhardt (1998) argues that case research should consist of pure induction (theory-building) and therefore no theory should be established prior and to allow theory to be generated during the field research. Yin (1993) however, is close to the theory-testing, confirming/disconfirming-deduction.

For ‘pure induction without prior theory might prevent the researcher from benefiting from existing theory, just as pure deduction might prevent the development of new and useful theory’ (Perry 2001, p.309). The following sections examine the different views and explain why this research takes the balanced view.

**Induction (theory-building) view**

Some researchers (Eisenhardt 1989; Dyer and Wilkins, 1991) believe that case research should consist of pure induction, which is theory-building. Dyer and Wilkins (1991) focus on the deep structure of rich descriptions of the context within which social events occur. They downplay deductions such as investigation of particular constructs and cross-case analysis. They argue that case studies should be mere stories and not have any theorising associated with them.

Eisenhardt (1989, p.532 as cited in Carson et al, 2001, p.98) describes a process that has inductive features such as ‘flexible and opportunistic data collection methods’ that allow additions to questions in an interview protocol during the series interviews. She further argues that the initial research problem ‘may shift during the research’ as data is gathered, and ‘research is begun as close as possible to the inductive ideal of no theory under consideration and no hypothesis to test. That is the literature is enfolded around the data after it has been collected literature is used as little as possible prior to data collection.’

The disadvantage of using one inductive stage is that it may run the risk of drifting away and may even ‘rediscover’ existing theory and thus not contributing to the research. Also, because of this unstructured approach, the cases are difficult to compare with hence making data analysis difficult.

**Deduction (theory-testing/confirming or disconfirming) view**

Yin (1993) however argues that case research should be well structured with the view of testing, confirming/disconfirming of prior theory. That is, a very tight structure should be developed prior to commencing the interview. This can be achieved by ‘the posing of clear [and precise] questions...[and] the use of theory and reviews of previous research to develop hypotheses and rival hypotheses; the collection of empirical data [is] to test these hypotheses and rival hypotheses.’ (cited in Carson et al, 2000, p.98) Yin argues against changes of direction once the interview has commenced and for a standard, consistent interviewer’s guide used for all interviews (Yin 1994). Further, Miles and Huberman (1994, p.17 cited in Carson et al, 2000, p.98) have emphasised the importance of ‘prestructured research’ for new qualitative researchers working in areas where some understanding has already been achieved. As well, Jensen and Jankowski (1991, p.68) warn that ‘researchers who set out to practise the precepts of grounded theory frequently went aground in unchartered analytical terrain.’

**Combining induction and deduction in this research**

Carson et al (2000) and Perry (2001) propose a blending of these two approaches. As previously discussed, pure induction without prior theory might prevent the researcher from benefiting from existing theory, whilst pure deduction might prevent the development of new and useful theory. Therefore, this research adopts a combination of these two approaches.

Carson et al (2000), suggest that this blending approach can be achieved in three ways. Firstly, an early stage of convergent interviews with practitioners is incorporated into the research design while the prior theory from the literature is being reviewed. (Nair and Riege 1995, cited in Carson et al 2001, p.100).

 Secondly, pilot studies should be conducted to fine-tune the interview protocol, before the major data collection stage. These pilot studies are not a pre-test or ‘full dress rehearsal’; they are an integral part of the whole protocol writing process (Yin 1994, p.74).

**Research design for case selection**

This section examines the type of case designs available for case selection. It also explains the conditions which the researcher believes are most suitable for this choice.

**Types of case studies**

Yin (1994) suggests that there are four types of case research designs. These are summarised in Table 5.

**Holistic or embedded as unit of analysis?**

According to Yin (1994) Type 1 involves a single case
Table 5. Types of case research design

<table>
<thead>
<tr>
<th>Single-case designs (1)</th>
<th>Multiple-case designs (2)</th>
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<tbody>
<tr>
<td>Holistic (single unit of analysis) (1)</td>
<td>Type 1</td>
</tr>
<tr>
<td>Embedded (multiple units of analysis) (2)</td>
<td>Type 2</td>
</tr>
</tbody>
</table>

Source: Yin (1994, p.39)

design with a holistic or single unit of analysis (column 1, row 1). Type 2 is a single case design with embedded or multiple units of analysis (column 1, row 2). Type 3 involves multiple case design with a single unit of analysis (column 2, row 1) and type 4 multiple case designs with multiple unit of analysis (column 2, row 2).

A case is considered to be holistic if it contains only one unit of analysis, or embedded if it contains multiple units of analysis (Perry 1998; Yin 1994). If the research is about what a person can do, then the unit of analysis is an individual. Sometimes researchers use small cases that are a part of a big case that is the unit of analysis for a study. These parts of sub-cases are called embedded cases because they are embedded in the bigger unit of analysis (Carson et al., 2001).

Further, if the research is abstract, as it seeks to utilise convergent interviews from the participants to build a theory, then “A holistic design is used when the research requires information at a broad or ‘abstract’ level or when logical sub-units are not identifiable” (Yin 1994, p.42).

**Single or multiple case studies?**

There are no precise guides to the number of cases to be selected. Lincoln and Guba (1985,) suggest sampling of cases until saturation is reached. Patton (1990) claims there are no rules for sample sizes for qualitative research. Eisenhardt (1989) recommends that cases should be added as the interviews unfold, until theoretical saturation is reached.

Yin (1994) suggest that one case is acceptable if it meets at least one of the following three criteria (as cited in Carson et al., 2001, p.103):

1. the case is a critical one for confirming, challenging or extending a theory because it is the only one that meets all the conditions of the theory;
2. the case is rare or extreme and finding other cases is so unlikely that research about the situation could never be done if the single case was not investigated;
3. the case provides unusual access for academic research, and unless the case is investigated, an opportunity to examine a significant social science problem may be lost.

**Selection of the cases**

There are two types of logic underlying the selection of cases: *sampling logic* and *replication logic*. Sampling logic is commonly used in surveys, which is used to assume a ‘represent’ a large pool of respondents. Replication logic according to Yin (1994, p.45) is ‘analogous to that used in multiple experiments…same results are predicted.’ In other words, selection of the cases should be relevant and purposive to the situation rather than sampling representative logic. Indeed, ‘random selection of cases is neither necessary, nor even preferable’ (Eisenhardt, 1989, p.537).

Also, replication is carried out in multiple case research to achieve literal or theoretical replication.

**Number of cases and interviews**

**Number of cases**

Selection of the optimal number of cases for this research is a critical decision (Eisenhardt, 1989; Yin 1994). Eisenhardt’s view (1989, p.545) is that ‘While there is no ideal number of cases, a number between four and ten cases often works well. With fewer than four cases, it is often difficult to generate theory with much complexity, and its empirical grounding is likely to be unconvincing.’ Hedges (1985, cited in Carson et al 2001, p.104) suggests an upper limit of twelve because of the high costs involved in qualitative interviews and the quantity of qualitative data which can be effectively assimilated. In this research fourteen cases were used.

**Number of interviews**

In addition to determining how many cases, in turn the number of interviews needs to be determined. Once again there is no rule to dictate how many interviews should be conducted. Carson et al. (2001) suggest that thirty or so interviews are required to provide a creditable picture in a reasonably sized research project.

However, ‘The validity, meaningfulness and insights generated from qualitative inquiry have more to do with the information-richness of the case selected and the observational/analytical capabilities of the researcher than with sample size’ Patton (1990, p.185 cited in Carson et al. 2001, p.105).

**Data collection procedures**

This section outlines the procedures used to collect data:
the researcher’s actions during the case interviews; the case research protocol used for the interviews; and the source of data collected to supplement the interviews. (Yin, 1994).

**Participant’s actions during the interview**

Indeed, as suggested by Eisenhardt (1989), all of the interviews undertaken in this research adapted the approach of being ‘flexible and opportunistic data collection methods’ that allow additions to questions in an interview protocol during the series interviews.

A standard, consistent interviewer’s guide should be developed and should be used for all interviews. This guide was provided to the participants and briefly discussed prior to commencing the interviews. Any questions concerning the research could be raised at this point and would be fully answered prior to commencement. This approach conforms to Yin’s (1994) suggestion that all interviews be standardised and that there be no change of direction (with the exception of introducing cases as the interview progressed) once the interview has commenced. It should be noted here that in order to add reliability of the research or manuscripts, it is suggested researchers should include a sample of the consent form as appendix.

**Case study protocol**

The case study protocol is the most important tactic in achieving reliability. This protocol should provide guidance for another researcher who might attempt to repeat the case study. (Yin, 1994, p.63). The protocol contains the instrument but also contains the procedures, instruments and general rules that should be followed.

This following outlines the contents of the protocol.

**Content of the protocol**

The case study protocol requires an overview, field procedure, guide and case study questions to be specified (Yin 1994). An overview of the research should be provided to the participants at the first contact stage. If the approach is based on non-directive, open-ended questioning, the format of the interview is unstructured to enable participants to freely express their views. All the questions raised at the interview were raised with “why”, “how” and “what” so that real, rich and deep data could be gathered.

The interview protocol provided an overview and background of the project as well as the interview procedures. The participants’ details, such as names, job titles and organisations were documented and included in the interview transcripts. Finally, it outlined the ethical procedures followed by the researcher - that is, that the participant had the right to confidentiality and to terminate the interview at any time if he/she decided not to proceed. The procedure also explained to the participant that the interview would be taped for analysis purposes. These details should be communicated to all participants prior to the interview (ie via email) and should be explained again to the participant prior to the commencement of the interview. A consent form confirming the above was signed by each of the participants prior to the commencement of the interview.

**Analysing the data**

The analysis of the data collected forms the basis of theory building. It also aims at confirming/disconfirming prior theory. Unlike quantitative research analysis, there are no guidelines established for analysing qualitative data. However, Patton (1990) and Yin (1994) provide some guidance in this respect.

The aim of this section is to examine these guidelines and procedural suggestions and how they affected the data analysis.

**Cross-case analysis**

Patton (1990), Miles and Huberman (1994 cited in Perry 2001, p.316), suggest that once the data is gathered, it is customary for case analysis to always precede cross-case analysis, because it provides the data for the cross-case analysis.

Perry (2001, p.316) suggests that the description of each case near the beginning of the data analysis part of the report is restricted to less than half a page per case, with other descriptive material relegated to appendixes or the database.

In the cross-case analysis, the report emphasises reasons why differences occur, with an explanation of why a difference was found, frequently using quotations obtained from the interviews to justify conclusions about differences between cases in the cross-case analysis.

Data analysis for this type of research is based on coding the data and by clustering the data so that a theme or hypothesis can be identified. ‘For cross-case analysis, most qualitative researchers use some form of content analysis initially to analyse their data, that is, they code groups of words in their transcripts into categories. These categories usually determined by the research issues that were the starting point for the research. ‘These codes are retrieval and organising devices that allow the analyst to spot quickly, pull out, then cluster all the segments relating to a particular question, hypothesis, concept, or theme’ (Miles and Huberman 1984, p.56, Carson et al, 2001, pp. 106-107).

In summary, prior theory from the literature review, pilot
cases and convergent interviews are linked to the cases through practices of data collection and analysis that include:

1. the open research issues at the end of the literature review
2. the relatively more specific interview probe questions used to “flush out” quotations and ideas about aspects of those research issues, after more open questions have been posed
3. appropriately selected cases. (Perry 2001, pp.317-318)

Limitations of case study methodology

Although case research is considered a distinctive form of empirical inquiry which is rigorous, coherent, and based on a justifiable philosophical position (Perry 1998a), the unique characteristics of case study research that produce these strengths may also produce weaknesses (Eisenhardt, 1989; Easterby-Smith et al., 1991)

Firstly, there is an argument on case research that there is a lack of rigour and bias (Easterby-Smith et al, 1991, Yin 1994). This can be overcome by using the techniques suggested above to minimise the lack of rigour and bias.

Secondly, it is argued that case study is not easily open to generalisation (Easterby-Smith et al., 1991, Yin 1994). As discussed previously, the case study research within the realism paradigm aims to generate theories (analytic generalisation) and not to enumerate frequencies (statistical generalisation). That is, this type of research does not use “sampling units” as measurement; rather it is selected as a laboratory investigator selects the topic of a new experiment (Yin, 1994, p.31).

Thirdly, case studies are difficult to conduct because of potential logistical and operational problem (Easterby-Smith et al., 1991, Yin 1994). This can be overcome through detailed planning of the investigation, design of a research protocol, preparation of an interview guide and systematic collection of data during the interviews.

Ethical considerations

As Zikmund (2000, p.71) suggests, ‘There is no general agreement among philosophers about the answers to such a question [ethical question].’ And ‘Of course, the answer to the question ‘What is ethical?’ is not easy - only one’s conscience operates to inhibit any questionable practice’ (p.83). Nevertheless, when dealing with research ethics it is necessary to keep in mind that ‘The principles of ethical propriety at the base of most of these guidelines resolve into simple considerations of fairness, honesty, openness of intent, disclosure of methods, the ends of the researcher to guarantee unequivocally individual privacy, and an informed willingness on the part of the subject to participate voluntarily in the research activity’ (Leedy, 1997, p.116).

Researchers are reminded that research is conducted purely for research purposes. It is not intended to use the data collected for any other purpose. Confidentiality and anonymity are paramount to the researcher and the participants. Although Zikmund (2000, p.72) suggests that there are three parties to the research, it is probably the best if one can only involve two parties - the researcher and the respondent.

In addition, it is imperative to note that when interview is conducted with a mirror, the research protocol including consent must be obtained by the parent/guardian. This is extremely important in order to protect the children as well as the researcher. This action also enforces the validity of the research.

Conclusion

As presented above, this paper is intended to provide a guide to assist those who wish to embark on qualitative research. The study of contemporary problems as well as human behaviour could yield better results by using qualitative research.

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