

# CHAPTER THREE:

## RESEARCH APPROACH

3.1	Introduction	3-2
3.2	Research approach	3-2
3.3	Theoretical approach	3-7
3.3.1	Epistemology	3-8
3.3.1.1	Constructionism	3-9
3.3.2	Theoretical perspective	3-10
3.3.2.1	Interpretivism	3-11
3.3.2.2	Phenomenology	3-12
3.4	Research methodology	3-15
3.4.1	Practical approach – objective two	3-17
3.4.1.1	Case study – research strategy	3-17
3.4.1.2	Case study 1: non-GDES small hotels in a Welsh local authority	3-21
3.4.1.3	Sampling for case study 1	3-22
3.4.1.4	Research methods	3-28
3.4.1.4.1	Semi-structured interviews	3-29
3.4.1.4.2	Direct observation	3-34
3.4.1.4.3	Document analysis	3-35
3.4.2	Practical approach – objective three	3-37
3.4.2.1	Case study 2: small hotels committed to GDES	3-37
3.4.2.2	Sampling for case study 2	3-38
3.4.2.3	Research methods	3-39
3.4.2.3.1	Semi-structured interview	3-39
3.4.2.3.2	Direct observation	3-41
3.4.2.3.3	Document analysis	3-41
3.5	Data analysis	3-42
3.6	Validity, reliability and triangulation	3-44
3.6.1	Validity	3-44
3.6.2	Reliability	3-45
3.6.3	Triangulation	3-47
3.7	Generalisation	3-48
3.8	Summary	3-49

### **3.1 Introduction**

This chapter gives an overview of the research approach adopted in the thesis. It identifies the thesis's epistemology and theoretical perspective. It further looks at the research methodology and the practical approach adopted to achieve objectives two and three. Case study was used as a research strategy as it is distinguished by its ability to investigate the phenomenon of SWM in small hotels from different perspectives and focus on relationships and processes. The chapter explores case study 1 (non-GDES small hotels in a Welsh local authority) and case study 2 (small hotels committed to GDES in Wales) and rationalizes the sampling strategies and the research methods used for collecting the data in each case study. Data was collected using three qualitative research methods: semi-structured interviews, direct observation and document analysis. The chapter then looks at the qualitative analysis techniques which were used for analysing the data. It ends with a discussion of issues related to the validity, reliability, triangulation and generalisation of the results.

### **3.2 Research approach**

- **Qualitative versus quantitative research approach**

The distinction between qualitative and quantitative research is a methodological issue. The decision to choose a specific methodology should be based on its suitability to answer the research questions (Bryman, 1988). Denzin and Lincoln (1998) asserted that qualitative research emphasises the process of discovering how the social meaning is constructed and stresses

the relationship between the investigator and the topic studied. Conversely, quantitative research is based on the measurement and the analysis of causal relationships between variables. Berg (2001) discriminated between qualitative and quantitative research arguing that qualitative research referred to the meanings, concepts, definitions, characteristics, metaphors, symbols and descriptions of things, while quantitative research referred to the measures and counts of things.

Qualitative and quantitative research approaches differ basically in some major areas, including: their analytical objectives; types of questions posed; types of data collection methods used; types of data produced; degree of flexibility in study design (see Table 3.1) (Mack *et al.*, 2005). Snape and Spencer (2003) indicated that qualitative research is a naturalistic/interpretative approach concerned with understanding the meaning people give to the phenomena within their social setting. They outlined a number of key elements which distinguish the qualitative approach, among these: it is the approach which provides a deeper understanding of the social world; it is based on a small scale sample; it uses interactive data collection methods, i.e. interviews; it allows new issues and concepts to be explored.

**Table 3.1: Comparison of quantitative and qualitative research approaches**

	Quantitative	Qualitative
<b>General framework</b>	<ul style="list-style-type: none"> <li>- Seek to confirm hypotheses about phenomena</li> <li>- Instruments use more rigid style of eliciting and categorising responses to questions</li> <li>- Use highly structured methods such as questionnaires, surveys and structured observation</li> </ul>	<ul style="list-style-type: none"> <li>- Seek to explore phenomena</li> <li>- Instruments use more flexible, iterative style of eliciting and categorizing responses to questions</li> <li>- Use semi-structured methods such as in-depth interviews, focus groups and participant observation</li> </ul>
<b>Analytical objective</b>	<ul style="list-style-type: none"> <li>- To quantify variation</li> <li>- To predict casual relationships</li> <li>-To describe characteristics of a population</li> </ul>	<ul style="list-style-type: none"> <li>- To describe variation</li> <li>- To describe and explain relationships</li> <li>- To describe individual experiences</li> <li>- To describe group norms</li> </ul>
<b>Question format</b>	Closed – ended	Open – ended
<b>Data format</b>	Numerical (obtained by assigning numerical values to response)	Textual (obtained from audiotapes, videotapes and field notes)
<b>Flexibility in study design</b>	<ul style="list-style-type: none"> <li>- Study design is stable from beginning to end</li> <li>- Participant responses do not influence or determine how and which questions researchers ask next</li> <li>- Study design is subject to statistical assumptions and conditions</li> </ul>	<ul style="list-style-type: none"> <li>- Some aspects of the study are flexible (for example, the addition, exclusion or wording of particular interviews questions)</li> <li>- Participant responses affect how and which questions researchers ask next</li> <li>- Study design is iterative, that is, data collection and research questions are adjusted according to what is learned</li> </ul>

(Source: Mack *et al.*, 2005:3)

Previous studies (Groundwork, 1995; Meritt, 1998) reported a number of problems in investigating environmental issues in small businesses using questionnaire surveys. The most important of these is that the results of the survey tend to be inconclusive either because of the low response rate or misunderstanding of the questions. Moreover, *“there is a tendency for*

*consumers to overstate their interest in, and concern for, the environment in questionnaire surveys and therefore to create the impression of being and acting in an environmentally-conscious way” (Davies et al., 2002:44).* Therefore, respondents tend to give answers which may not be accurate but consider agreeable from the social standpoint (Malhotra, 1993).

Accordingly, I decided to use a qualitative approach to accomplish the overall aim of the study as most of the business and environment literature has largely focused on quantitative studies that lack deeper theoretical analyses (Stokes, 2000). The qualitative approach has helped me to get a deeper understanding of the issues being investigated. It is an approach that has enabled the research questions to be answered by providing a rich picture on the actual conditions surrounding SWM practices in non-GDES and GDES small hotels. As Gray (2004) showed, qualitative research is distinguished as a highly-contextual approach where data is gathered over long periods and in natural real life settings. It can answer how and why questions rather than giving a brief view about the phenomenon studied.

I started the research process by identifying the research problem, setting out the aim and objectives of the study, developing five research questions, reviewing the related literature, selecting the research methodology and the methods that will be effective in answering the research questions, gathering the data from the field using multiple qualitative methods and finally analysing the data. I tried to understand and make sense of the data collected in which

a best practice model for the public sector to encourage better SWM practices in small hotels along with a conclusion have been drawn based on the participants' views regarding the issues being investigated.

- **Inductive versus deductive research approach**

It is important also to classify the research approach in terms of whether it is inductive or deductive. Saunders *et al.* (2003) differentiated between these two types of the research design. First, the deductive approach – known as testing a theory, in which the researcher develops a theory or hypotheses and designs a research strategy to test the formulated theory, second, the inductive approach – known as building a theory, in which the researcher starts with collecting data in an attempt to develop a theory. A researcher should explain clearly which approach is being followed in his or her research project. Marshall (1997) illustrated the theoretical use of both terms (inductive and deductive) as follows:

*When researchers first begin to open up any new line of enquiry there will be no useful theories available from which to deduce propositions for testing. Knowledge has to begin with collecting facts and then trying to find some order in them. This is known as induction. Deduction is the technique by which knowledge develops in more mature fields of enquiry. It involves a sort of logical leap. Going a stage further than the theory, data is then collected to test it.*

(Marshall, 1997:17)

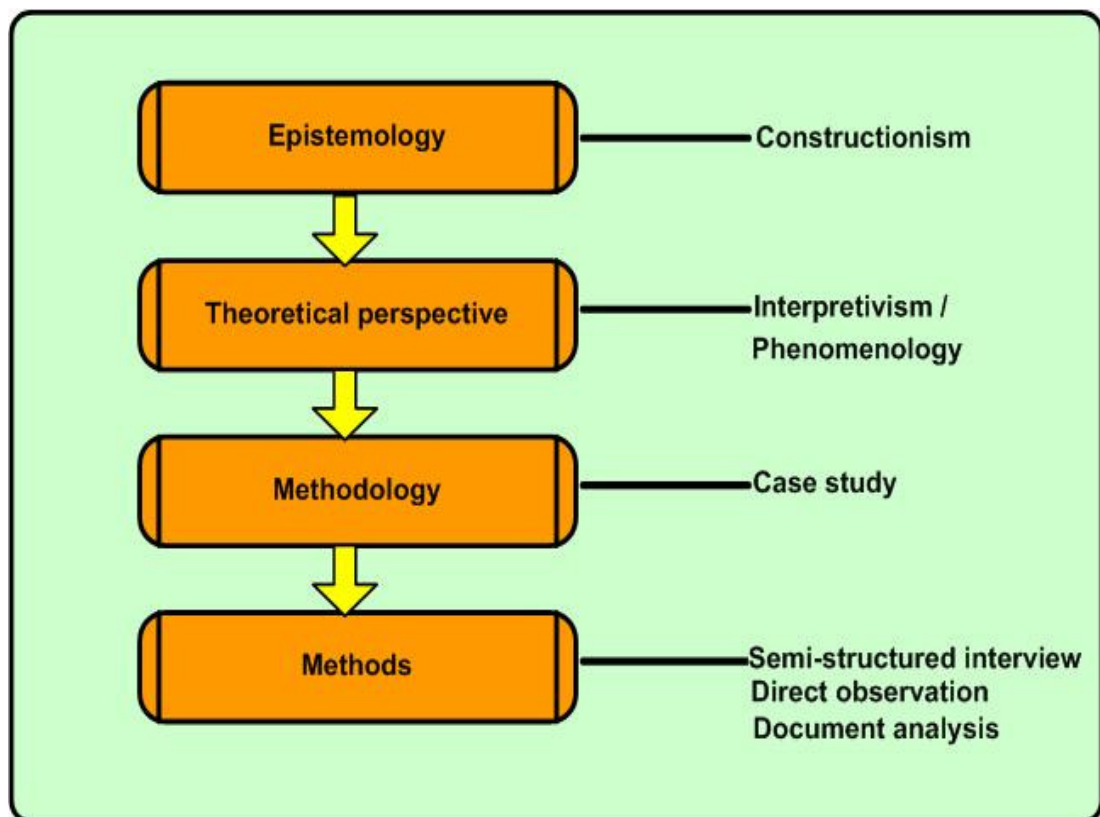
The current study is shaped with using inductive research design. Saunders *et al.* (2003) noted that the inductive approach gives the chance to have more explanation of what is going on. I have started the research process by exploring and collecting the data from different sources and by using multiple

sources of evidence: semi-structured interviews, direct observation and document analysis in an attempt to develop a best practice model for SWM in small hotels. The secondary sources of data used in this research, involving: critically reviewing previous research, reports, records and documents on SWM and small hotels, while primary data were collected by interviewing the owner/manager of non-GDES and GDES small hotels; executives of the public and private waste sector and Arena Network officials. Easterby-Smith *et al.* (2002) and Gray (2004) indicated that qualitative research is often associated with inductive research designs in which a range of methods are used to collect the data and explore the problem from different perspectives.

### **3.3 Theoretical approach**

In an attempt to distinguish the research approach used in this study further than qualitative and quantitative approaches, Crotty (1998) asserted that the research should be distinguished with epistemological and theoretical perspectives in which a researcher could not claim to be both objectivist and constructionist at the same time. In this research, Crotty (1998) is used as a guide to form the thesis' theoretical approach. The views, beliefs and thoughts of small hotel owners/managers and the key representatives of both public and private waste sectors regarding SWM issues in small hotels were reached by following a research string of constructionism – interpretivism/phenomenology (see Figure 3.1). The choice and the justifications behind selecting this approach will be discussed in detail in the following sections.

**Figure 3.1: Thesis' epistemology, theoretical perspective, methodology and methods**



(Adopted from: Crotty, 1998)

### 3.3.1 Epistemology

Crotty (1998:8) asserted that “*epistemology is a way of understanding and explaining how we know what we know*”. Maynard (1994:10) indicated that:

*Epistemology is concerned with providing a philosophical grounding for deciding what kinds of knowledge are possible and how we can ensure that they are both adequate and legitimate*

Epistemology seeks to answer two different questions including: How do we know the world? What is the relationship between the inquirer and the known? (Denzin and Lincoln, 1998). Dawson (2002) added that epistemology

is the study of knowledge and is more concerned with identifying the origin of knowledge.

### **3.3.1.1 Constructionism**

Constructionists perceive reality as if it is socially constructed (Schwandt, 1998, Saunders *et al.*, 2003). Constructions exist in the mind of individuals and the role of the inquirer is to understand, reconstruct, analyse and critique participants' views in a way that leads to construct meaningful findings/outcomes (Guba and Lincoln, 1989). Shadish (1995:67) indicated that social constructionism refers to "*constructing knowledge about reality, not constructing reality itself*". This epistemology rejects the objectivists' perspective of knowledge (Crotty, 1998) implying that both the subject and the object are actively participated in the creation of the meaning (Guba and Lincoln, 1998).

In this sense, people tend to construct meaning in different ways even when looking at the same phenomenon (Crotty, 1998). In other words, the constructionist paradigm is "*a perspective that emphasizes how different stakeholders in social settings construct their beliefs*" (Schutt, 2006:44). The aim of the researcher is to understand and reconstruct people's beliefs trying to reach a common consensus. As such constructions are opened to new interpretations as the information increases (Carr and Kemmis, 1986). Constructionism and phenomenology are interconnected in a way that one

cannot be phenomenological and at the same time owes to objectivist or subjectivist epistemology (Crotty, 1998).

As explained, constructionists believe that reality is constructed and there is no truth without mind. Thus, I had undertaken constructionism as an epistemological stance which allowed me to engage with the social world of small hotels trying to understand and construct the reality from the perspective of different stakeholders who experienced or lived the phenomenon being studied. All participants were carefully selected and challenged to reach a high level of consensus regarding SWM issues being investigated. A common perspective was achieved using effective method of analysis and interpretation (a grounded theory approach involving the constant comparative method).

### **3.3.2 Theoretical perspective**

Crotty (1998:3) defined the theoretical perspective as:

*The philosophical stance informing the methodology and thus providing a context for the process and grounding its logic and criteria.*

The research methods literature has informed a number of research philosophies in which the researcher can use to shape his methodology, including: positivism, post-positivism and interpretivism. It should be clear that the distinction between these philosophical positions did not mean that there was one stance better than the others but they all better in doing different things (Saunders *et al.*, 2003).

### 3.3.2.1 Interpretivism

Social reality can be viewed as being constructed. It is *“based on a constant process of interpretation and reinterpretation of the intentional, meaningful behaviour of people – including researchers”* (Smith, 1989:85). Thus, depiction and/or interpretation of the social inquiry is a constructive process and consequently the researcher cannot be isolated from the phenomenon investigated (Smith, 1989). For interpretivists, the world is too complex to be reduced to a set of observable laws and generalizability is a less important issue than understanding the real conditions behind the reality (Gray, 2004). The main goal of the interpretivist is to understand the meaning of the social situation from the point of view of those who live it. The inquirer must interpret the event, understand the process of meaning construction and reveal what meanings are embodied in people’s actions (Schwandt, 1998).

A part from constructionism, it is important for the interpretivists to find out the subjective meanings or realities which stimulate people’s actions in order to understand and make sense of these actions in a way that is meaningful for the research participants (Saunders *et al.*, 2003). A researcher perceived the data, which he collected with his own sense and interpreted it by his minds. So any researcher could not be certain that he realised the reality properly or his understanding was more valid than the others (Schutt, 2006). Thus, there is not only one reality in social world but researchers understand issues in different meanings (Rubin and Rubin, 1995).

Adopting an interpretivism paradigm, I entered the social world of small hotel owners/managers, public and private sector stakeholders and other key informants to engage with them and collect in-depth information regarding SWM issues in GDES and non-GDES small hotels and to understand what stimulated their SWM behaviours. From the data I collected I have made interpretations to serve the overall purpose of the research which was intended to help small hotels to reach a stage of zero-waste disposed into landfill.

### **3.3.2.2 Phenomenology**

Phenomenology is *“the study of lived, human phenomena within the everyday social contexts in which the phenomena occur from the perspective of those who experience them”* (Titchen and Hobson, 2005:121). It implies that people’s experience of social reality provides a basis to understand the meaning of that reality. Hence, the researcher should work towards having new meanings and increasing his understanding of the phenomena from the social world (Gray, 2004). The phenomenological approach focuses on exploring how human beings experience the phenomenon, i.e. how they perceive it; describe it; make sense of it. To reach such understanding, the researcher should conduct in-depth interviews with people who live with or have directly experienced the phenomenon (Patton, 2002).

Titchen and Hobson (2005) identified two different approaches to look at the phenomenon. Firstly, a direct approach, in which the phenomenon can be

investigated by exploring human consciousness in a direct way, the researcher conducts interviews with the interested stakeholders to reach their experiences of the phenomenon. Secondly, an indirect approach, in which the observer gets into the social context of the phenomenon to live it personally with the participants in order to notice and identify the common meaning and practices. Phenomenology relies on personal experiences to explore and understand the existing issue. This inductive approach tries to find the internal logic of the subject (Gray, 2004). Easterby-Smith *et al.* (1991) outlined the major differences between positivism and phenomenological stances (see Table 3.2).

In this respect, the issues of SWM were treated as a phenomenon and investigated from different perspectives, including those of: non-GDES small hotels, GDES small hotels, public and private sector waste carriers and key informants of GDES in Arena Network. The phenomenon of SWM in small hotels was investigated in a direct way using multiple-qualitative research methods to explore and understand people' experiences regarding the issues being investigated, these include: semi-structured interviews, direct observation and document analysis. Using such qualitative methods allowed me to interact effectively with the stakeholders and obtain in-depth views from different angles regarding SWM issues in small hotels. I then attempted to form a meaning of such views and find out common perspectives from which a conclusion and a best practice model could be made to add a contribution to SWM literature.

Phenomenology is a theoretical perspective that uses relatively unstructured data collection methods and follows an inductive approach for collecting data. It is characterised by its ability to get issues that are not involved originally in the aim of the research. This perspective also has an advantage of generating thick descriptions of people's experiences or perspectives within their natural settings (Gray, 2004).

**Table 3.2: Summary of the major features of positivism and phenomenology research philosophy**

	Positivist paradigm	Phenomenological paradigm
<b>Basic beliefs</b>	<ul style="list-style-type: none"> <li>- The world is external and objective</li> <li>- The observer is independent</li> <li>- Science is value-free</li> </ul>	<ul style="list-style-type: none"> <li>- The world is socially constructed and subjective</li> <li>- The observer is a party to what is being observed</li> <li>- Science is driven by human interests</li> </ul>
<b>The researcher should</b>	<ul style="list-style-type: none"> <li>- Focus on facts</li> <li>- Locate causality between variables</li> <li>- Formulate and test hypotheses (deductive approach)</li> </ul>	<ul style="list-style-type: none"> <li>- Focus on meaning</li> <li>- Try to understand what is happening</li> <li>- Construct theories and models from the data (inductive approach)</li> </ul>
<b>Methods include</b>	<ul style="list-style-type: none"> <li>- Operationalizing concepts so that they can be measured</li> <li>- Using large samples from which to generalise to the population</li> <li>- Quantitative methods</li> </ul>	<ul style="list-style-type: none"> <li>-Using multiple methods to establish different views of a phenomena</li> <li>- Using small samples researched in depth or over time</li> <li>- Qualitative methods</li> </ul>

(Source: Easterby-Smith *et al.*, 1991)

### 3.4 Research methodology

Crotty (1998:3) defined research methodology as:

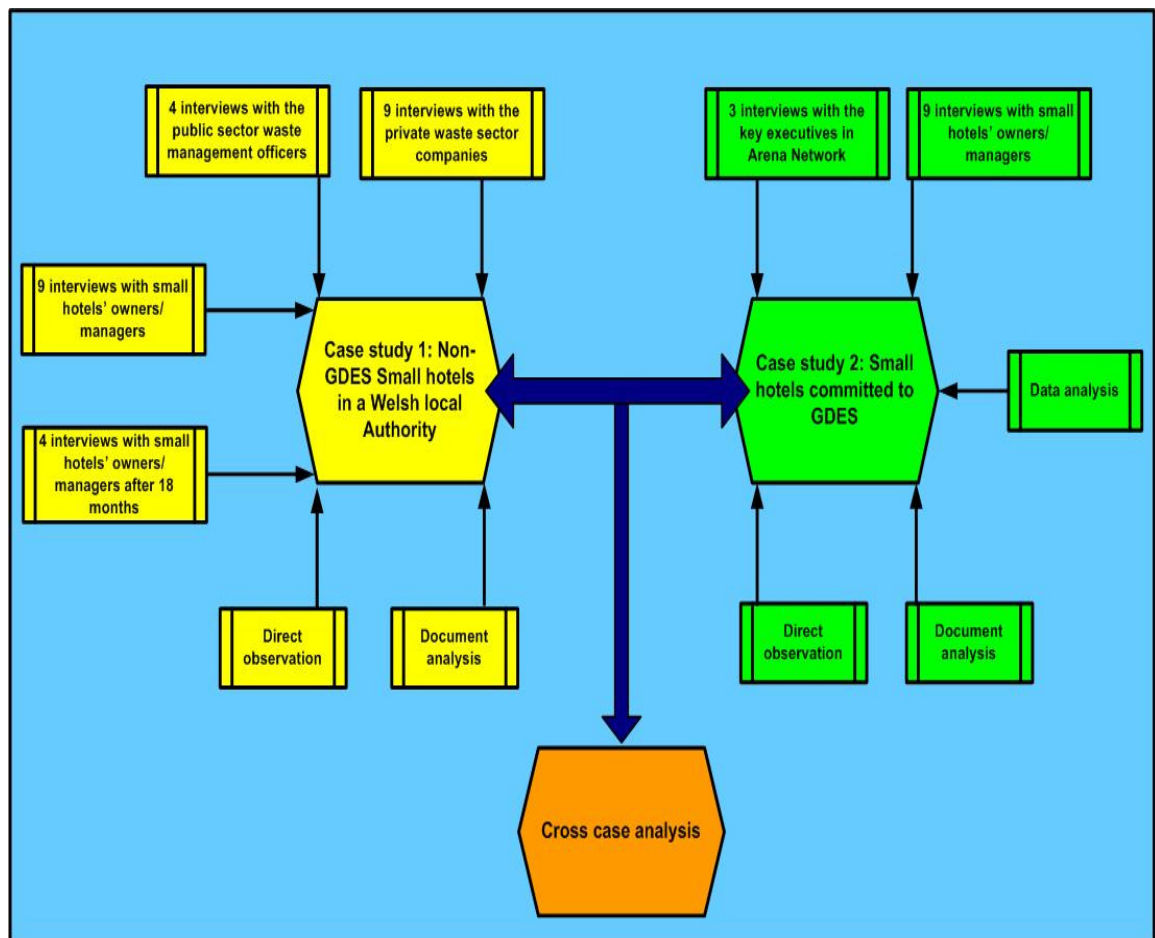
*The strategy, plan of action, process or design lying behind the choice and use of particular methods and linking the choice and use of methods to the desired outcomes.*

The choice of the research methodology is influenced by the researcher's theoretical perspective and also his attitude towards the ways in which the data will be used (deductive or inductive approach) (Gray, 2004). It should also explain the rationale behind the selection of the methods adopted (Crotty, 1998). The present study has undertaken case study as a research methodology to reach the overall aim of the research. Two case studies were formed to investigate SWM issues in small hotels. The justifications for the selection of case study methodology and the research methods are explained in detail in the following sub-sections. The objectives of each case study along with the procedures and the methods used to fulfil such objectives are summarised in Table 3.3 and Figure 3.2.

Table 3.3: Research methodology stages

	Case study 1: non-GDES small hotels in a Welsh local authority	Case study 2: small hotels committed to GDES in Wales
<b>Aim</b>	<ul style="list-style-type: none"> <li>To identify the challenges of adopting sustainable SWM practices in small hotels and provide some potential solutions.</li> </ul>	
<b>Objectives</b>	<p>A- To investigate SWM practices in non-GDES small hotels in a Welsh local authority and explore the support available to them from the local authority and the private waste sector to manage their solid waste in a sustainable way.</p>	<p>A- To explore the attitudes of the owners/managers of GDES small hotels regarding the implementation of more sustainable SWM practices and comparing them to the non-GDES small hotels studied in the second objective.</p>
<b>Procedures</b>	<p>1- Develop a case study of non-GDES small hotels (those having 30 rooms or less) in a Welsh local authority.</p> <p>2- Conduct a series of interviews with non-GDES small hotel owners/managers who participated in the designated case study to identify their SWM practices, their attitudes and the challenges facing them in implementing more sustainable SWM practices, the potential support and the pressure needed to influence them to undertake sustainable practices.</p> <p>3- Undertake a series of interviews with the public and private waste sectors to explore their SWM operations and identify how far they can support small hotels to manage their solid waste in a sustainable way.</p> <p>4- Revisit a number of non-GDES small hotels who participated in the case study to register if there is any changes happened to their SWM practices after the public sector had provided a recycling system for commercial businesses.</p>	<p>1- Develop a case study of small hotels (those have 30 rooms or less) that committed to GDES in Wales.</p> <p>2- Conduct a series of interviews with GDES small hotel owners/managers who participated in the developed case study to explore their SWM practices and to identify their attitudes and the motivations beyond the implementation of more sustainable SWM practices.</p> <p>3- Undertake a number of interviews with key informants in Arena Network Organisation to identify how far they support, influence and control GDES small hotels regarding SWM practices.</p> <p>4- Develop a cross-case analysis between the two cases studied with the aim of developing a best practise model for the public sector to encourage better SWM practices in small hotels.</p>
<b>Methods</b>	<ul style="list-style-type: none"> <li>Semi-structured interviews</li> <li>Direct observation</li> <li>Document analysis</li> </ul>	

**Figure 3.2: Research methodology and sources of evidence used in the study**



### 3.4.1 Practical approach – Objective two

#### 3.4.1.1 Case study – research strategy

Robson (2002:178) defined case study as:

*A strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence.*

This study has used case study as a research strategy to explore SWM practices in GDES and non-GDES small hotels. The choice of a case study research strategy had been attributed to a number of reasons. Case study

has a distinctive advantage over other research strategies when “how” or “why” questions are being posed to discover a current phenomenon and when the researcher has little or no control over the events (Yin, 2003). It offers the opportunity to *“explain why certain outcomes may happen – more than just find out what those outcomes are”* (Denscombe, 1998:31). This is actually very important for the present study to identify why GDES and non-GDES small hotels may or may not engage in proactive SWM behaviours. Gray (2004) confirmed that a case study approach is particularly useful in revealing the casual relationships between the phenomenon and the context in which it takes place.

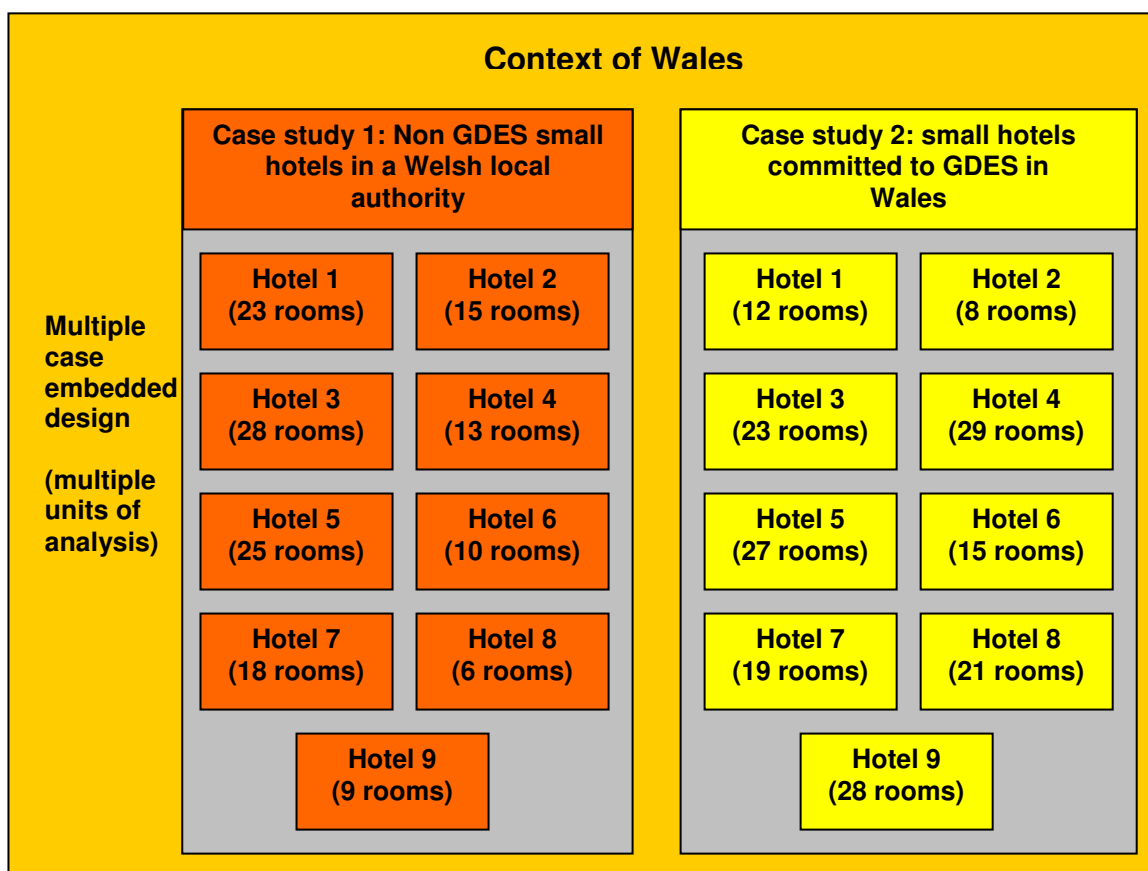
Moreover, the case study enables the researcher to use multiple sources of data and a variety of research methods to explore the research questions which, in turn, foster the validation of data through triangulation (Denscombe, 1998). Thus, any findings or conclusions are likely to be more compelling and accurate (Yin, 2003). This has also supported the use of case study as a research strategy for the current study. The case study strategy is best for gaining a deeper understanding of the research being investigated (Morris and Wood, 1991). However, the case study approach has not been widely accepted as a reliable, objective and legitimate research strategy. One of the most critical criticisms directed to this approach related to the difficulty in generalizing the findings to a larger population (Yin, 1994; Thomas, 2003).

It is essential to define a boundary around the phenomenon – what to include and what to exclude (Stark and Torrance, 2005). Yin (2003) proposed four

different types for case study designs based on a 2×2 matrix. These types include: single-case (holistic) designs; single-case (embedded) designs; multiple-case (holistic) designs; multiple-case (embedded) designs. A major distinction has been made between single and multiple case study designs. It is important to note that holistic designs are based on single unit of analysis whereas embedded cases include multiple unit of analysis.

The undertaking of multiple-case study designs is expensive and time-consuming (Yin, 2003). However, this study adopted multiple case (embedded) designs to investigate SWM practices in two different cases and/or conditions: GDES and non-GDES small hotels (see Figure 3.3). This can be justified using two main reasons. First, the evidence and conclusions coming out from multiple-designs are more reliable and convincing than those based on single-case designs and thus the findings are more likely to be generalized (Yin, 2003). Second, the assumptions that there are different types of conditions surrounding SWM in small hotels and there is a need to have sub-units of cases to cover all different conditions and practices.

Figure 3.3: Basic design for case studies undertaken in this research



According to the purpose of the research, Gray (2004) explained three different forms of study: exploratory, explanatory and descriptive. Robson (2002) indicated that the purpose of the enquiry may change over time. This reflects that the research project may have more than one purpose at the same time. An exploratory study intends to explore “*what is happening; to seek new insights; to ask questions and to assess the phenomena in a new light*” (Robson, 2002:59). It is valuable particularly when there is very little information known about the phenomenon. On the other hand, explanatory study aims to find out the causal relationships between variables (Saunders

*et al.*, 2007). Finally, descriptive study seeks to provide a clear picture about the phenomenon as it already occurs (Hedrick *et al.*, 1993).

The current research is based on two case studies. The first, exploratory, seeks to discover SWM practices in non-GDES small hotels and explore the support available to them from the public and private sector's waste carriers. The second, explanatory, intends to identify the causal relationships and the motivations which make small hotels committed to GDES tend to manage their solid waste in a sustainable way.

#### **3.4.1.2 Case study 1: non-GDES small hotels in a Welsh local authority**

This research was undertaken in Wales because solid waste was considered as one of the biggest environmental problems in Wales (WAG, 2002). Wales has undertaken landfill as a major waste strategy (Cohen, 2006a). Moreover, the hospitality industry in Wales was dominated with small hospitality businesses (WTB, 2000; Morrison, 2002), which significantly impact the environment through undertaking inappropriate waste disposal methods (landfill). Lastly, Wales was the area where GDES was born to support Welsh businesses to undertake environmentally-friendly practices.

A case study of small hotels (those having 30 rooms or less) was developed in a Welsh local authority to investigate in-depth the attitudes and the challenges facing hoteliers to adopt sustainable SWM practices. Using such strategy had enabled me to use multiple research methods, including: semi-

structured interviews, direct observation and document analysis, and thus looking at the problem from different perspectives. Moreover, to understand the whole aspects of SWM practices in non-GDES small hotels, it was essential to examine the role of the waste carriers (public and private waste sectors) and explore the inter-relationships with non-GDES small hotels. Denscombe (1998) reported that the case study approach is characterised by its ability to focus on relationships and processes, which is of great importance to the current research. He added that it can be effective in analysing the complexity of the situation better than other research strategies. It tends to be holistic rather than dealing with isolated factors.

The main rationale behind selecting the Welsh local authority, the main focus of the study, to develop a case study of non-GDES small hotels is attributed to a number of factors, including: it has a large number of small hotel businesses, has the biggest Material Recycling Facility (MRF) in Wales and has obtained the largest funding compared to other local authorities from WAG, in addition to funding granted from the EU. However, the local authority has not got a recycling system for commercial businesses. Moreover, even the domestic recycling system did not cover a lot of areas in the locality.

#### **3.4.1.3 Sampling for case study 1**

Whether probability or non probability sampling strategy is chosen, the sampling frame should be relevant, complete, precise and up-to-date

(Denscombe, 1998). Probability sampling implies that each one in the population has an equal chance to get involved in the sample (Corbetta, 2003). While a non-probability/purposive approach reflects that the chances of each person to be chosen in the sample is unknown but the features of the population are used as the main measure for selection. A purposive approach is well-suited to small-scale and in-depth studies (Ritchie *et al.*, 2003).

Four common methods can be used to identify a non-probability sampling: availability sampling, quota sampling, purposive sampling and snowball sampling. These methods are extremely useful under certain conditions, particularly when the research question seeks an in-depth investigation of a small population or when the researcher is performing a preliminary, exploratory study (Schutt, 2006). This research adopted a non probability sampling strategy using purposive and snowballing techniques which enabled me to select and study cases that would serve the purpose of the study and answer the research questions. Case study 1 “non-GDES small hotels in a Welsh local authority” involved three main stakeholders: non-GDES small hotels, local authority and private waste sector. Table 3.4 identifies the Number of respondents and the sampling technique for each stakeholder.

**Table 3.4: No. of respondents and sampling techniques used in case study 1**

Key stakeholders of case study 1	No. of respondents	Sampling techniques
- Non-GDES small hotels	9	Purposive sampling
- Local authority	4	Snowball sampling
- Private waste sector	9	Purposive sampling
- Non-GDES small hotels after 18 months	4	Purposive sampling
Total	26	

- **Sampling from non-GDES small hotels in a Welsh local authority**

A purposive sampling approach was used to identify a sample from non-GDES small hotels in a Welsh local authority. With the purposive sampling the researcher has to use personal judgement to select cases that will best meet the research questions and objectives (Saunders *et al.*, 2003). Rubin and Rubin (1995) named three main guidelines for selecting a purposive sample. The researcher should select the informants who are knowledgeable about the issues being investigated, willing to talk and representative of the range of points of view. As Schutt (2006:155) asserted about purposive sampling:

*Each sample element is selected for a purpose, usually because of the unique position of the sample elements. Purposive sampling may involve studying the entire population of some limited group (directors of shelters for homeless adults) or a subset of a population (mid-level managers with a reputation for efficiency). Or a purposive sample may be a “key informant survey”, which targets individuals who are particularly knowledgeable about the issues under investigation.*

The number of rooms was used as the primary criterion in the present study to classify hotels as being small/medium or large. This is because number of rooms is the most conventional and accepted measure in the hotel industry as indicated by Garcia-Falcon and Medina-Munoz (1999). For the current study, small hotels were identified as those operations having 30 rooms or less which was consistent with the categorization of small hotels addressed by Glancey and Pettigrew (1997), Main *et al.* (1997) and Baker *et al.* (2000) (see section 2.2.1). Also, this gave the opportunity to as many small hotels as possible to be involved in the research boundary and get benefit from the current study in relation to managing their hotel waste effectively and at the same time helping in reducing the environmental impact of waste disposal into landfill from the small hotel sector. Participants were then selected as those who had experienced the phenomenon being investigated, willing to cooperate and were able to communicate their experiences without any bias and embarrassment.

Initially, a total of 28 non-GDES small hotels was recognised through the websites ([www.visitcardiff.info](http://www.visitcardiff.info) and [www.visitwales.com](http://www.visitwales.com), accessed 210406) in the Welsh local authority which constituted the main focus of the study. Among them six hotels were omitted from the list as they did not meet the purpose of the study because they had either closed down or had changed the nature of their business to a pub. Surprisingly, their details still existed on the Internet as being hotels. Respondents were contacted using two different means: First, a fax letter was organised giving a brief introduction about the

researcher (i.e. name and organisation), describing the aim of the research, showing the importance of the study to small hotels and the environment and finally asking the respondent to take part in the case study (see Appendix 1). The letter was printed on Welsh School of Hospitality, Tourism and Leisure Management headed paper and authorised with my signature. Second, within 24 hours of sending the letter to the targeted person the hotelier was contacted by telephone to arrange a time for interview, if accepted.

I conducted six interviews with non-GDES small hotel owners/managers. It was recognised that getting access to small hotel operators was very difficult as I had targeted thirteen small hotel owners/managers but, unfortunately, they refused to be interviewed because they were not interested in helping my research. Thus, I looked at different ways to access small hotels. For example, in an attempt to encourage small hotel owners/managers participation in the case study, I asked my supervisors and some UWIC colleagues if they could help to get access to them and this technique was successful in reaching three other hoteliers. Consequently, of the 22 small hotels, nine participants were interviewed which represented 41% of the targeted population. Among these nine, four interviewees were re-interviewed 18 months after the initial interviews with them following the introduction of enhanced SWM facilities by the local authority.

- **Sampling from local authority's waste management officers**

A non-probability approach using a snowballing technique was used to sample from the local authority's waste management officers. The

snowballing technique is well-suited for purposive sampling (Denscombe, 1998). With the snowballing technique, the sample is formed as a referral in which each participant is asked to suggest other people who could potentially take-part in the study. Also, this type of sampling is often used with very small-sized samples such as case study or if there is a need to choose participants that are well-informed (Neuman, 2000). The researcher can approach the new person using the name of the nominator as a source of reference to increase his/her credibility (Denscombe, 1998).

*Snowball sampling is often used to find and recruit hidden populations, that is, groups not easily accessible to researchers through other sampling strategies.*

(Mack *et al.*, 2005:6)

I was introduced by my supervisor Professor David Botterill before leaving UWIC to one of his colleagues who worked as a one of the local authority's waste management team. I conducted an interview with Professor Botterill's friend and then I asked the interviewee to suggest some other potential respondents who might be interested in the research topic and could help it further.

- **Sampling from private waste sector**

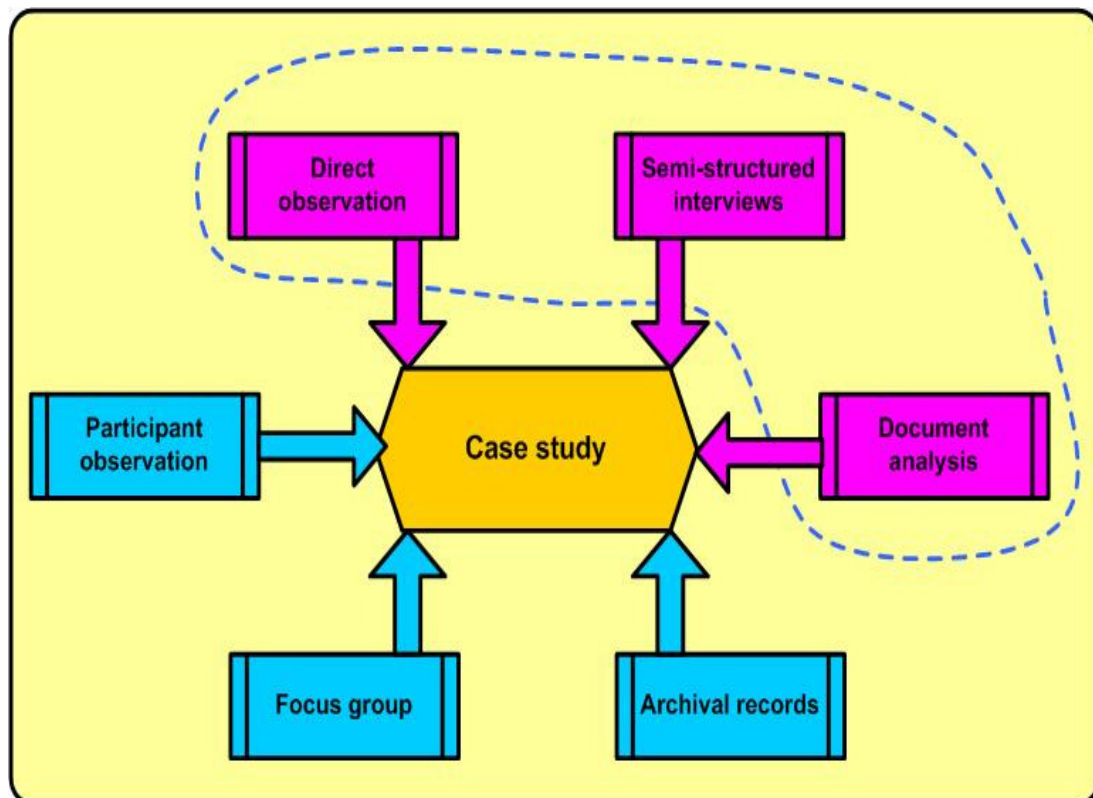
Similarly, a purposive sampling approach was used to select a sample from the private waste sector. A total of 22 waste companies were identified by typing "waste companies + the name of the local authority" or "waste companies + UK" in the Google search engine and also by looking at the Yellow Pages Directory. Of the 22 waste companies, seven companies were

omitted from the sampling frame as they would not fulfil the purpose of the study because they did not provide any waste collection services in the local authority, the main focus of the case study. Actually, nine out of 15 private waste companies' executives were interviewed providing a response rate of 60% of the whole population which seemed to be very satisfactory. The rest of the list (six waste companies' executives) refused to be interviewed reasoning that they were too busy or not interested.

#### **3.4.1.4 Research methods**

Crotty (1998:3) defined research methods as: "*The techniques or procedures used to gather and analyse data related to some research questions or hypotheses*". Yin (2003) identified six sources of evidence for case studies: documents, archival records, interviews, direct observation, participant-observation and physical artefacts. Among these, a boundary was drawn around the three methods used in the current research which include: semi-structured interviews, direct observation and document analysis to distinguish them from other sources of evidence indicated by Yin (see Figure 3.4).

Figure 3.4: Sources of evidences used for the case studies



(Adopted from Yin, 2003)

#### 3.4.1.4.1 Semi – structured interviews

*“The qualitative research interview is a construction site for knowledge. An interview is literally an inter view, an inter-change of views between two persons conversing about a theme of mutual interest”* (Kvale, 1996:14).

Qualitative interviews are effective research instruments for getting deeply insights about how people experience, feel and interpret the social world (Mack *et al.*, 2005).

The research methods literature (e.g. May, 1997; Saunders *et al.*, 2003) has largely identified three different forms of interviews (structured, semi-

structured and unstructured interviews). Dawson (2002) argued that the semi-structured interview is perhaps the most widespread type used in qualitative research. In this kind of interview, the researcher pre-establishes a set of questions to know more information about specific issues and sometimes identify new issues that were not originally part of the interview. It is characterised by its flexibility in which the researcher can add or remove questions from the schedule based on the results of each interview. Also, Saunders *et al.* (2003) indicated that the investigator is not requested to follow a specific order of questions but can vary the order depending on the flow of the conversation.

Interestingly, semi-structured interviews give the researcher the opportunity to 'probe' for more detailed information by asking the respondent to give more clarification to his answer. This is significant for those who adopt a phenomenological approach because a prime concern is focused on understanding the meanings that the respondents ascribe to various phenomena (Saunders *et al.*, 2003). However, the interview is influenced by the level of awareness and the emotional state of the interviewee, so that a possible distortion to data may occur as a result of the interviewee being anxious or annoyed at the time of the interview (Patton, 2002). To avoid having biased data, the researcher should maintain his own knowledge and let the interviewee 'flow' (May, 1997).

To reach the second objective of the present study (see section 1.3) a series of interviews were held with non-GDES small hotel owners/managers and the key representatives of the public and private waste sectors, as shown below.

First, nine interviews were conducted with non-GDES small hotel owners/managers in a Welsh local authority to identify their SWM practices. A list of questions was developed in advance to explore the current methods used by hoteliers for disposing of hotel waste and determine their attitudes towards prevention, minimisation, reuse, recycle and compost hotel waste. Furthermore, the questions attempted to find out the barriers to the implementation of sustainable SWM practices and the potential support needed to help small hotel operators to reduce and recycle their waste. The interviews were concerned also with identifying what could pressurize small hotel operators to consider sustainable SWM options. A schedule of the interview questions is included in the thesis (see Appendix 3).

Second, four interviews were conducted with the local authority's waste management officers to explore the locality's SWM system and identify how far the council could support small hotels in undertaking the full ranges of sustainable SWM options outlined in the theoretical framework (see Figure 2.12). A pattern of questions was developed in advance to guide the conversation with the respondents (see Appendix 4).

Third, the private waste sector plays a major role as well as the public sector in collecting, handling and disposing of MSW in the UK. Therefore, it was very important to explore their contribution to sustainability issues and the impact they could have on SWM in small hotels. Nine interviews were held with the representatives of the private waste companies to explore the SWM options adopted in handling waste materials together with the barriers and the motivations beyond recycling commercial waste (see Appendix 5).

Moreover, four follow-up interviews were undertaken with non-GDES small hotel owners/managers 18 months after the initial interviews with them. The aim of these interviews is to evaluate and register any changes happened to SWM practices in non-GDES small hotels as the local authority had introduced a recycling system for commercial businesses, whereas previously it had only been available for domestic waste. The local authority had provided the mixed recycling bag scheme for commercial businesses one month after the initial interviews with the hoteliers. So the recycling service was already available to small hotels either through the public or private waste sectors and they did not have any real excuse then for not making recycling (see Appendix 8).

At the beginning of each interview, I introduced myself to the interviewee stating my name, position, institution and then explained the aim of the research to formalise the interviewee with the research topic. This brief introduction was followed by asking the interviewee about his/her position

and responsibilities as a way of collecting more detail about him/her and at the same time creating a good atmosphere to conduct the interview and facilitate the interaction with the interviewee.

Most of the questions asked were open-ended in nature. The questions were formulated based on varied sources, including: SWM literature, the council's waste strategy and the Welsh waste strategy (Wise about Waste 2002), along with my background on the topic studied. All respondents exhibited diverse experience in the research topic. All interviews took place within the interviewees' organisation and lasted between 45 – 90 minutes. To remember the conversation, all interviews were recorded with a permission of each participant. Also, hand-written notes of the interviewees' responses were taken throughout the interview. I assured all interviewees about the confidentiality of the information given.

At the end of the interview, all respondents were asked to give me permission to conduct direct observation and take some photographs, for example, to small hotel waste storage areas and the MRF of the public and private waste sectors. Finally, they all were thanked deeply and promised to be supplied with a report of the research results. All interviews were transcribed, analysed and discussed in the next chapters. An example of interview transcription has been shown in appendix 9.

#### **3.4.1.4.2 Direct observation**

This type of observation implies that the observer watches and listens to events directly. The observation can be guided through a set of questions that an investigator attempts to answer (Thomas, 2003). In fact, visiting the field to collect the data through other evidence, i.e. interviews, creates an opportunity to make direct observation (Yin, 2003). Patton (2002) identified several advantages of using the direct observation method. This technique enables the observer to: understand and capture the setting within which people interact; see and discover things that people in the location have not paid any attention to; get things that people will be reluctant to talk about in an interview, i.e. critical issues; go beyond the selective views of people (i.e. participants in interviews); being open, inductive and discovery-oriented to help the observer to obtain great experience about the phenomenon. Thomas (2003) added that direct observation has the advantage of getting the information from natural or unplanned events.

However, the direct observation method also has some limitations, including: the distortion of data because people's behaviour is subject to change particularly when they feel that they are being observed; information is limited to what is observed in the setting; the observation only focuses on the external behaviour as the observer cannot explore people's feelings and perspectives (Patton, 2002).

In fact, using the interview technique helped me to undertake a walk-through direct observation method as a source of evidence for collecting the data for the present study. In respect of non-GDES small hotels, all hoteliers interviewed were asked to allow me to witness the hotel waste storage area and take some photographs to waste storage bins, recycling bags, landfill bags and composter bins. During the observation, I could see the volumes of waste produced by each hotel which took-part in the case study; the way they stored and disposed of hotel waste; the cleanliness, health and safety issues of their waste storage areas.

In relation to the public and private sectors' waste carriers, I had a tour of their MRF accompanied by one of their waste management team. Throughout the observation I watched the way of processing, sorting and baling of different waste streams in their recycling plants. It was useful to see and assess the infrastructure of the two sectors. Also, the photographs which were taken during the observation were beneficial in highlighting the features of each unit and complementing the information gathered through the interviews.

#### **3.4.1.4.3 Document analysis**

A document is any substance that gives information about the investigated phenomenon and exists independently of the researcher's actions. It is normally produced for specific purposes other than those of the research but it can be used by the researcher for cognitive purposes, e.g. letters, newspapers, diaries and websites. (Corbetta, 2003). Yin (2003:87) asserted

that *“For case studies, the most important use of documents is to corroborate and augment evidence from other sources”*. Corbetta (2003) identified a number of advantages of the documents over other research methods. (a) It is a non-reactive technique where the information given in a document is not subject to a possible distortion as a result of the interaction between the researcher and the respondent, e.g. as in interviews; (b) it helps the researcher to study the past; (c) it is a cost-effective method as the information has already been produced (Denscombe, 1998). However, documents may have some limitations in terms of the accuracy and completeness of the data (Patton, 2002).

In the present study, a number of documents were critically analysed, including: the Council’s waste strategy 2005; the Welsh waste strategy (Wise about waste 2002); the website of the local authority; the websites of the larger waste companies which took part in the study. Such documents were of great value to examine the study from different angles and enrich the researcher’s knowledge about the waste strategies and plans of both public and private waste sectors before conducting the interviews with them. This method enabled me to highlight and pursue any contradiction in the evidence emerging as a result of the inconsistencies between the data cleared in the documents and the interviews with the associated stakeholders. Yet, non-GDES small hotels did not maintain any records for waste management, some of them only keep Waste Transfer Notes (WTN).

### **3.4.2 Practical approach – objective three**

#### **3.4.2.1 Case study 2: small hotels committed to GDES**

For the purpose of the current research, the study focuses on studying small hotels in the context of Wales where GDES was born. Consequently, this case study has concentrated on GDES which provides a real opportunity for small hotels, particularly in Wales, to improve their environmental performance (Green Dragon, 2006). A case study of small hotels committed to GDES in Wales was developed to meet the third objective of the thesis, which is: “explore the attitudes of the owners/managers of GDES small hotels regarding the implementation of more sustainable SWM practices and comparing them to the non-GDES small hotels studied in the second objective”. Initially, after I had finished my MPhil/PhD upgrade exam my supervisor Professor Eleri Jones invited a key representative in Arena Network who has the main responsibility for GDES to have a conversation with me and her regarding SWM in small hotels committed to GDES. Afterwards, I decided to develop a case study of small hotels committed to GDES to explore their attitudes and behaviours regarding SWM practices.

Hence, the research was directed towards developing another case study of small hotels who might undertake more sustainable SWM practices rather than the first case study “non-GDES small hotels in a Welsh local authority”. This was, actually, the main reason beyond the development of a case study of a small hotels committed to GDES believing that they might manage their solid waste in a more appropriate manner as they were GDES-certified.

Throughout this case study the researcher was concerned to explore how small hotels committed to GDES manage their hotel waste and understand the motivations beyond the adoption of sustainable SWM practices. In fact, this would help to identify how more small hotel businesses could be encouraged towards the implementation of more appropriate SWM practices.

Lastly, a cross-case analysis (comparative study) was developed between case study 1 “non-GDES small hotels in a Welsh local authority” and case study 2 “small hotels committed to GDES in Wales”. The comparative study was essential to develop a best practice model for the public sector to encourage better SWM practices in small hotels. It identified the most effective means to encourage and/or pressurize small hotel owners/managers towards the adoption of more sustainable SWM practices.

#### **3.4.2.2 Sampling for case study 2**

A purposive sampling approach was adopted to select a sample from small hotels committed to GDES. Together with the number of rooms as a criterion (see section 3.4.1.3) GDES – certification represented another significant criterion for sample selection in this case study. 16 GDES–certified small hotels were identified through the GDES members’ list which was available on the GDES website ([www.greendragonems.com](http://www.greendragonems.com), accessed 150807). Hoteliers were contacted to form a purposive sampling using the same strategy explained in case study 1 (see section 3.4.1.3). Of the 16 GDES–certified small hotels, nine hoteliers were interviewed constituting a response

rate of 60% which made the case study more representative to the original population. My supervisor Professor Eleri Jones had helped me through a colleague of hers to get access to two of these respondents. As a part of this case study, three key representatives of Arena Network Organisation which carried out the main responsibility over GDES were purposively selected and interviewed.

### **3.4.2.3 Research methods**

#### **3.4.2.3.1 Semi-structured interview**

First, a sum of nine interviews was conducted with small hotel owners/managers committed to GDES across Wales to meet the third objective of the thesis. All the interviews were conducted face-to-face within the hoteliers' location except one interview where the respondent asked me to send the questions to him through the electronic-mail because he was too busy and did not have time to meet with me. Moreover, one of the conducted interviews was repeated with the respondent and also with the participation of my supervisor Professor Eleri Jones to ascertain that all the information obtained was plausible and consequently to strengthen and validate the findings of the research. In addition to using the questions asked to hoteliers in the first case study which focused mainly on SWM practices in non-GDES small hotels (see Appendix 3), a new list of questions was developed with the aim of exploring how small hotels achieved GDES; what practices were undertaken; the main drivers which had led them to achieve GDES; did they have any intention to progress further and achieve higher levels of GDES

certification (seven hotels were at Level Two and two were at Level Three (see Appendix 6).

Second, the interviews with GDES-certified small hotel owners/managers showed that Arena Network Organisation could play an important role in supporting and monitoring GDES-certified small hotels in maintaining the standard and improving their SWM practices. Thus, three interviews were conducted with the key representatives of Arena Network Organisation to explore a range of issues, among these: the support provided to help GDES small hotels to undertake environmentally-friendly practices; the challenges facing Arena Network to provide more education and awareness support to businesses; the measures undertaken to monitor businesses maintaining the quality of the standard; how easy a small hotel can achieve the standard; what are the stronger and weaker aspects of GDES; how effectively the standard promoted to general public. A complete list of the questions posed is involved in the thesis (see Appendix 7).

The interviews with GDES-certified small hotel owners/managers along with the key representatives of Arena Network Organisation had been undertaken between January to April 2008. I followed the same procedures used in the first case study in contacting the respondents to arrange for the interviews. The interviews lasted between 45 – 120 minutes. They all were recorded, transcribed, analysed and presented in chapter five, also observation and photographs were taken.

#### **3.4.2.3.2 Direct observation**

Using direct observation technique enabled me to detect some of the issues investigated in a natural and unplanned situation. In this sense, I was accompanied by the hotelier interviewed to have a walk-through observation throughout the operation, mainly, to guest-rooms, reception area and waste storage area. During the observation I observed the types and quantities of waste streams produced in addition to the way of disposing and sorting different waste materials. The observation also was very important to see whether the hotel made its environmental policy clear to customers and staff and to notice how effectively the hotel implemented different measures to conserve energy and water, for instance checking water-flows in toilets; noticing if the hotel use energy-saving light bulbs; supplying brochures or leaflets that ask customers to save water, energy and participate in the hotel's waste recycling program. Throughout the observation I took field notes to the issues observed and supported the notes with pictures.

#### **3.4.2.3.3 Document analysis**

This method was very important to investigate the case study from different angles (e.g. through secondary sources). A range of documents was analysed to corroborate the evidence obtained through the interviews, these include:

- Hotel environmental policies;
- Hotel improvement plans;
- GDES assessment reports;

- Website of GDES ([www.greendragonems.com](http://www.greendragonems.com));
- Websites of GDES-certified small hotels;
- Website of greenbeds (<http://www.greenbeds.adventa.org.uk>).

A number of themes was developed to help focus on the main issues of these documents. The core issues reached by analysing these documents were then linked to the findings obtained by interviewing GDES-certified small hotel owners/managers and the key representatives of Arena Network Organisation to understand all conditions related to SWM practices in small hotels committed to GDES.

### **3.5 Data analysis**

Gray (2004) identified two main approaches for analysing qualitative data: content analysis and grounded theory. The former method attempts to identify specific categories and criteria of selection before the analysis process starts, while in the second method (grounded theory), no criteria are prepared in advance. All the measures and themes come out during the process of data collection and analysis. Hence, it can be recognised that grounded theory is an inductive approach and content analysis is more deductive. Strauss and Corbin (1998:23) defined grounded theory as a theory that *is*

*discovered, developed and provisionally verified through systematic data collection and analysis of data pertaining to that phenomenon.*

Analysis of data using grounded theory technique involves three stages: *Open coding*, in which the data is categorised into units; *Axial coding*, in which the relationships between categories are identified and finally *selective coding*, where the core categories are integrated to produce a theory (Strauss and Corbin, 1998). The constant comparative method also represents an important approach for analysing qualitative data. It involves a series of steps as asserted by Glaser (1978): it starts with collecting data from the field; identifying key issues or activities in the data that would be a focus of categories; writing about the formed categories with an attention to describe all existing issues and constantly looking for new incidents; working with the data in an attempt to develop a model to capture social processes and relationships.

In regards to the current study, the data obtained was analysed by using the constant comparative method which yielded from the grounded theory approach. The analysis process started with transcribing, coding, categorising the data into different sets and then comparing them. Afterwards, I critically analysed the similarities and differences of the formed categories with the aim of finding out the actual meaning of the data. The themes used in the result chapters had been emerged from the questions posed and the analysis process.

### 3.6 Validity, reliability and Triangulation

#### 3.61 Validity

Hammersley (1987:69) asserted that *“an account is valid or true if it represents accurately those features of the phenomena, that it is intended to describe, explain or theorise”*. Insofar, validity is concerned with two main issues: whether the instruments used for measurement are accurate and whether they are actually measuring what they want to measure (Winter, 2000). Ritchie and Lewis (2003) indicated that the validity of research is conceived as the precision or correctness of the research finding. Arksey and Knight (1999) and Winter (2000) identified two different dimensions to the concept of validity, namely internal and external validity. Internal validity ensures that the researcher investigates what he claims to be investigating. External validity concerned with the extent to which the research findings can be generalised to wider population (discussed in detail in section 3.7). Denscombe (1998) added that the use of multi-methods for examining one issue corroborates the findings of the research and increases the validity of the data.

In terms of the current research, validity was achieved by undertaking multiple methods to investigate the problem from different angles and strengthen the validity of the findings. I had also considered selecting multiple/representative case studies to cover the entire issues related to the study and increase the probability of generalisation. Moreover, all the questions posed in the interviews were directly linked to the research's aim

and objectives and covered all aspects of the topic. Data was also transcribed and analysed with a very high degree of accuracy, for instance some English native speakers assisted me to recognise the unclear taped conversations of some interviewees. Moreover, one of the transcriptions was validated and rechecked with the interviewee to ensure the correctness and the accuracy of the data. Finally, all secondary sources of data used were initially assessed to determine the validity of the information given.

### **3.6.2 Reliability**

Reliability is known as to what extent the research findings can be replicated, if another study is undertaken using the same research methods (Ritchie and Lewis, 2003). They asserted that *“the reliability of the findings depends on the likely recurrence of the original data and the way they are interpreted”* (Ritchie and Lewis, 2003:271). Marshall and Rossman (1999) and Seale (1999) argued that the absolute replication of qualitative studies is very difficult to achieve since they reflect realities at the time they were collected and in a situation which is likely to change. It is often referred to as an unrealistic demand. Phenomenological research may be difficult to repeat because it depends generally on unstructured data collection methods (Gray, 2004). Instead, a good practice of reliability can be enhanced through an aspect of reflexivity, which is *“showing the audience of research studies as much as possible of the procedures that have led to a particular set of conclusions”* (Seale, 1999:158).

A number of measures were undertaken to enhance the reliability of the current research, including: all interviews were recorded to present more reliable evidence and avoid any bias which might happen if the researcher attempted to remember the conversation. Gray (2004:345) asserted that *“in terms of reliability, it is fairly obvious that taped conversations will tend to present more reliable evidence than hastily written field notes”*. Also, all the questions were worded clearly and asked in a natural tone of voice. If there was any misunderstanding the question would be repeated in order to enable the interviewee understand what s/he was asked for. Moreover, all interviewees were given the opportunity to explain their own beliefs and thoughts freely without any intervention either with comments or gestures, which would create bias in the interviewee’s response to the question being asked.

It is recognised that the conditions surrounded the research might be different when replicating the current study but in an attempt to help others understand the various decisions and processes adopted along the research journey and increase the probability of replicating the present study, all decisions and procedures were set clearly. The study provides detailed information about the aim and objectives of the research, how the study was undertaken and the justifications of the adopted research strategy and methods.

### 3.6.3 Triangulation

Triangulation is a strategy that can be used to strengthen the confidence of the research findings (Arksey and Knight, 1999). Decrop (1999) indicated that triangulation can reduce and/or eliminate personal and methodological biases and increase the probability of generalising the findings of a study as the data is gathered from different angles and by different methods. Easterby-Smith *et al.* (1991) referred to data triangulation as the process of collecting data over different times or by using multiple methods. Decrop (1999:159) asserted that *“using multiple methods pave the way for more credible and dependable information”*. Denzin (1970) identified multiple triangulations that can be used in the same investigation, these include:

- (1) Methodological triangulation – the use of multiple methods to collect data.
- (2) Data triangulation – the use of a variety of data sources in a study in terms of person, time and space.
- (3) Investigator triangulation – whereby multiple researchers are employed to investigate the problem.
- (4) Theoretical triangulation – the approaching of the research with varied perspectives and hypothesis.

In respect of the present research, data and methodological triangulations had been accomplished through collecting the data from different sources and by using multiple methods, including: semi-structured interviews, direct observation and document analysis. The use of multiple methods assisted in

data triangulation and at the same time was an effective way to overcome most of the weaknesses of each method used (Gray, 2004).

### **3.7 Generalization**

Generalisation can be defined as *“the assertions of enduring value that are context-free”* (Lincoln and Guba, 1985:110). For qualitative researchers, generalizability can be perceived as the “fit” between the cases studied and the other situations to the extent that make it possible to generalise the findings of the research (Schofield, 1994). Ritchie and Lewis (2003) named this type of generalisation as ‘representational’. It can be assessed based on two main issues: firstly, the precision of interpreting and capturing the phenomenon, i.e. quality of field work, analysis and interpretation. Secondly, the extent to which the sample studied is representative to the original population.

Gomm *et al.* (2000) and Schofield (2002) identified two ways for increasing generalizability of the findings based on very small-sized sample (qualitative research), these include: studying a typical case and investigating multiple case studies. In both situations, the resulted evidence is more powerful and credible than those coming out by studying a single case or because it is convenient. Both techniques are applied in the present research and thus enhancing the generalizability of the findings. The study is based on two case studies “non-GDES small hotels in a Welsh local authority” and “small hotels committed to GDES in Wales” in which the evidence generated will

be more convincing. Moreover, both case studies undertaken in this research were representative to the targeted population (as explained previously in sections 3.4.1.3 and 3.4.2.2). The thesis produced a generic model for the public sector to encourage small hotel owners/managers to manage their solid waste streams effectively.

Kalof *et al.* (2008) added two ways to achieve the generalizability of the research findings: clear description of the sample selection criteria and rich description of the research site. Both tactics had been used in the current study where a thick description of sampling procedures and selection criteria had been provided (see sections 3.4.1.3 and 3.4.2.2). This chapter also provided detailed information about the research site in terms of the procedures undertaken to achieve the aim and objectives of the research, the research methods used along with the data analysis techniques.

### **3.8 Summary**

This chapter has detailed the thesis's theoretical and practical approach and rationalizes the different decisions and processes undertaken throughout the research journey. The study's theoretical approach had followed a string of constructionism – interpretivism/phenomenology (see Figure 3.1). A qualitative approach had been used to reach the overall aim and objectives of the study as it is characterised by its ability to provide a deeper understanding of the phenomenon being investigated. Using case study research strategy had enabled the researcher to explore SWM practices in

GDES and non-GDES small hotels from different angles and by using multiple sources of evidence, including: semi-structured interviews, direct observation and document analysis. Data obtained throughout the interviews were analysed using the constant comparative method which yielded from the grounded theory approach. The chapter finally looks at the validity, reliability and triangulation issues. The next chapter presents and discusses the results obtained from the case study 1 – non-GDES small hotels in a Welsh local authority.