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An examination of public attitudes and behaviour towards waste management: The case of Galway

Submitted as fulfilment of the Requirements for the Degree of Ph.D. by Research to Trinity College, Dublin.

Frances Fahy

2006

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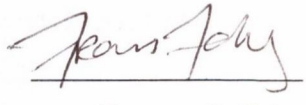

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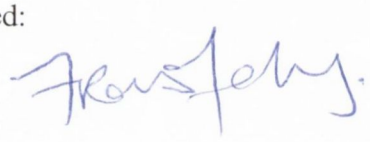

An examination of public attitudes and behaviour towards waste management: The case of Galway

Frances Fahy

Summary

In recent years waste and general environmental issues have become an area of prime concern for national governments, policymakers and local communities. However, research on waste management has largely ignored the role of individual attitudes and actions, preferring to concentrate on technical or scientific solutions to waste management problems. Many of the waste management policies adopted in Ireland focus on the provision of information about waste and the environment in general with the assumption that the public will absorb this information and change their behaviour accordingly. However, this thesis proposes that waste management behaviour is affected by more than just information and that a gap (commonly referred to as the value-action gap) exists between individuals' attitudes and actions towards waste.

Using Galway as a case study and utilising innovative research methods, this research furthers previous studies conducted in Ireland and contributes to the wider literature by establishing the existence of the value-action gap in waste management in Galway and providing an improved understanding of the factors which influence attitudes and behaviour towards waste management generally. Specifically, the research produced an original data set with base-line quantitative information on both public understanding of waste management issues and public attitudes and behaviour towards waste management. In addition, the research enabled the public to identify the variables that shape their waste management attitudes and behaviour and identify the barriers to, and opportunities for, achieving more sustainable waste management.

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Chapter 1: Introduction

1.1 Overview of the Research

This research is an investigation into public attitudes and behaviours towards waste. The objective of the project is to engage with the apparently paradoxical contrast between a citizen's desire for a good quality environment and behaviour that does not directly produce such an environment. The research utilises the case study of Galway, in the west of Ireland, to investigate the wider theme of public reasoning for attitudes and behaviour towards household waste.

Waste management is recognised by the Environmental Protection Agency (EPA) Ireland as "one of the most problematic and challenging environmental issues in Ireland at the present time" (EPA 2002:25). As a topical issue in contemporary Ireland, the problem of waste management and policy to address this problem is constantly evolving. During the inception of this project, proposals to levy plastic carrier bags and introduce a landfill tax came into legislation in Ireland (DoEHLG 2004). Alongside these developments in legislation environmental awareness campaigns attempted to highlight environmental issues, public unrest over waste charges increased and the public demonstrated its unease at proposals to site waste management infrastructure such as landfill and incinerators. Within this dynamic context, the need to investigate public attitudes and behaviour towards waste was identified. However, difficulties with the management of household waste are not specific to the island of Ireland. Waste presents a problem at global, supra-national and international levels. The following sections overview the issue of waste (1.1.1) and present a background review of the focal point of this research, the problem of household waste and the householder's role in many aspects of waste management (1.1.2), before introducing the theoretical background underpinning research into environmental attitudes and behaviour (1.1.3).

1.1.1 Waste in a Sustainable Context

There are several definitions of waste. Waste is defined, in this thesis, in line with definitions provided by the OECD report *Environmental Data* as "materials that are not prime products (i.e. products produced for the market) for which the generator has no further use for own purpose of production, transformation or consumption, and which he discards, or intends or is required to discard. Wastes may be generated during the extraction of raw materials, during the processing of raw materials to intermediate and final products, during the consumption of final products, and during any other human activity" (OECD 1999:156). The twentieth century saw a dramatic increase at the global level in the production of waste. In this current era of urbanisation, waste disposal in many countries is fast becoming a major area of concern. Rising amounts of waste, a scarcity of land available for waste disposal infrastructure such as landfills, and increasingly negative public perception of waste disposal methods, all contribute to waste management problems (OECD 2004:18). In industrialised societies rising wealth has contributed to an increase in the consumption of products, which are disposed of subsequent to their use (McCormick 2001). At the same time problems with waste disposal infrastructure have surfaced. For example, the Environmental Protection Agency in the United States estimated that 75% of the 75,000 landfills in the US are leaking (Tammemagi 1999). In conjunction with this trend, public concern over waste management disposal options is increasing. International research into public fears about waste disposal options is well documented (see for example Walsh *et al.*1997) and reviewed in more depth later in this thesis. In the past, many societies took an "out of sight out of mind" approach to landfill and waste disposal (Tammemagi 1999:8), but given increasing attention to issues of sustainable development landfills are now increasingly being perceived as a burden for the whole globe and for future generations. As the generation of waste is a trans-local and inter-generational issue, waste management policies "appear to fall squarely within the social implications of sustainability" (Fagan *et al.* 2001:xiii).

Since the 1992 UN Conference on Environment and Development in Rio De Janeiro, the concept of sustainable development, with its threefold commitment to environmental protection, social development and economic growth, has been elevated to a new prominence (Connelly and Smith 1999). The concept of sustainable development has given rise to many contested notions. Indeed, even its oft-quoted definition from the Brundtland Report, *Our Common Future* – "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987:8) – faces criticism for raising the difficult-to-define concept of needs and for being anthropocentric (Wheeler 2004). Environmental policymakers are faced with the arduous task of integrating this contested concept into practice. The agenda for the Rio conference aided the practical implementation of sustainable development at different scales as it set out 27 Principles for sustainable development and an action plan entitled *Agenda 21.*

Chapter 17 of *Agenda 21* describes waste as a key problem in the worldwide search for sustainable development (United Nations 1992). One of the primary elements that arose from the Rio Earth Summit was the objective of adopting "an integrated approach to environmental policy, with sustainability as the overall goal" (Holdgate 1996:78). This aspect has influenced attempts to develop a holistic approach to waste management, often labelled *integrated waste management*; "a term which describes the whole system of dealing with waste, which focuses more on regeneration than disposal .... it is not about a single approach to waste management, with one method favoured over others, but instead, as the name suggests, it is a fully integrated approach to the problem of waste" (Cunningham 2002:7). By utilising all waste management technologies, for example reduction, reuse, recycling, incineration, in addition to landfill, it has been contended by researchers such as Tammemagi (1999) that the overall purpose of integrated waste management is to minimise the effect on the environment and maximise the usefulness of the resources involved. Similar to other areas of environmental policy, in recent years waste management policy-makers have attempted to shift attention upstream from end-of-pipe action to production processes and consumption/lifestyle changes. It has been claimed that "these [environmental policies] have gradually shifted from reactive [end of pipe] approaches to pro-active [anticipatory] ones" (Selman 1996:18).

1.1.2 The Problem of Household Waste

The EPA in Ireland defines household waste as waste which is "produced within the curtilage of a building or self-contained part of a building used for the purposes of living accommodation" (EPA 2000a:93). The term municipal waste not only incorporates household waste but also commercial waste and street sweepings. One key aspect of Local Agenda 21 is the issue of waste generation, especially household waste production (Barr 2002). Although municipal waste accounts for only a relatively small proportion of total global waste, for example in the EU municipal waste accounts for approximately 17% of total waste (McCormick 2001), many household items such as newspapers, electrical items and food cause the creation of waste at earlier stages of the production cycle. Household waste is associated with the production of products and packaging throughout the complete process of extraction of materials, the manufacturing process, distribution, retail, consumption and finally waste disposal (Gandy 1994).

Household waste and the attitudes and behaviour of householders towards waste management, are situated at the core of this research project. Although it is recognised that other waste management sectors, such as agricultural or industrial waste sectors, also need examination, it would not be possible to encompass every aspect of waste management within the confines of this thesis. While householders are not the only contributors to waste issues in Ireland they form an important part of the waste generation spectrum and consequently play a vital role in the sustainable management of waste. From the point where the product is produced to the disposal of the product, householders can make a number of choices regarding waste management. As consumers they can choose the kinds of products to purchase or opt to purchase products with less packaging. In addition, as a waste generator a householder can often choose whether to recycle, reuse, or simply dispose of waste. The following table (Table 1.1) constructed from Barr's (2002) research on household waste behaviour in the UK, serves to illustrate various forms of ideal household waste management behaviour and defines the terms that will be referred to throughout this thesis.

Table 1.1: Definitions of ideal household waste behaviour (adapted from Barr 2002)

Behaviour	Definition	Example for Householders
Minimisation	Preventing waste from being produced. Also referred to as waste prevention or waste reduction.	The amount of packaging can be reduced, for example, by buying loose fruit, or not accepting plastic grocery bags.
Reuse	Finding further use or an alternative use for a product after its initial role has been fulfilled.	Old clothes can be used as dusters, glass bottles as flower vases etc.
Recycling	Materials from discarded products from the waste stream can be used to create new products or raw materials for new products.	A large number of items can be recycled depending on the available facilities. For example, glass, paper, and plastic products.
Composting	The decomposition of organic waste usually in a compost bin, wormery or informal compost heap.	Kitchen waste such as vegetable peelings, grass, or other garden waste, can be composted.

In addition, in recent decades a marked feature of developed countries has been the growth in the total number of households. Despite static or slow-growing populations in many developed countries, the number of households is increasing as the size of households is decreasing (Van Diepen, 1998). This trend has a significant impact on household resource use and the production and disposal of waste (Turner 1998). Indeed the project entitled HOMES (Household Metabolism Effectively Sustainable), research undertaken in the Netherlands which focused on flows of energy and materials through households and the production of waste, concluded that the "direct and indirect consumption of resources, the increasing number of consumer goods used by households, as well as the waste generated by and the environmental impacts of these activities, have increased enormously over the last 50 years" (Nooman and Uiterkamp, 1998: 245). As discussed in detail in the following chapter the amount of household waste produced in Ireland is increasing significantly and, as in many other EU countries such as Italy or the UK, the majority of household waste in Ireland is disposed of in landfill (EEA 2005). Over the past decade policy-makers in many of these countries are increasingly concerned about the lack of available landfill. As a result, research into household waste is considered essential.

1.1.3. Researching Environmental Attitudes and Behaviour

The challenge to reduce household waste has become a priority for policy-makers at a national, regional and local level. However, research on waste management in Ireland, to date, has largely ignored the role of individual attitudes and actions, preferring to concentrate on technical or scientific solutions to waste management problems. A small number of studies (Faughan and McCabe 1998; Drury 2000; Drury 2003), conducted in Ireland on public attitudes and actions towards the environment have identified positive attitudes towards the environment in general. The more recent Drury reports (2000; 2003) highlighted the public's growing awareness of environmental and waste management issues. However, the same surveys also identify that individual actions do not appear to mirror these affirmative attitudes. This discrepancy, commonly referred to as the value-action gap, has been recognised by commentators in regard to most environmental issues. As Tenbrunsel *et al.* (1997:2) suggest, "many people have pro-environmental attitudes and yet engage in environmentally destructive behaviours". Many of the waste management policy approaches adopted by the Irish government to change waste behaviour, focus on the provision of waste facilities and information about waste and the environment in general with the assumption that the public will use the facilities, absorb the information and change their behaviour accordingly. However, despite surveys highlighting growing environmental awareness and government policies aimed at improving waste management behaviour, waste at a national level is continuing to rise as is public concern about waste management (EPA 2004).

Research into attitudes and the relationship between attitudes and behaviour was traditionally confined to the discipline of psychology. During the late nineteenth and early twentieth centuries psychologists began experimenting with, and defining, attitudes; definitions which encompassed feelings, ideas, fears, interests thoughts and tendencies (Liska 1975). Research in this field gained momentum such that several academics came to define the discipline of social psychology as the 'scientific study of attitudes' (Allport 1954:43). One of the major achievements in the field of social psychology in North America in the 1930s and 1940s was the measurement of attitudes, and this preoccupation was followed in the 1950s and 1960s

with research focused on attitude change (Graumann 2001). The North American approach to behavioural research tended to focus on the use of quantitative techniques and the development of models to predict behaviour. Consequently research into environmental behaviour in North America concentrated on various physiological behavioural models and their application to a number of environmental actions. In contrast, the bulk of research on environmental behaviour from Europe and in particular the UK, has focused on the use of qualitative methods in researching environmental behaviour, generally dismissing the use of quantitative methods in behavioural research as deterministic (Barr 2002). Acknowledging that all methodologies have their limitations, the current research project adopted a number of approaches to investigate the issue of waste management and, at the same time, facilitate a critical consideration of how best to study complex processes such as attitudes and behaviour. This study utilises both quantitative and qualitative techniques and uses a geographical approach to examine the reasons behind individual behaviour towards waste management.

As a discipline that examines the relationship between humans and their environment, Geography is ideally placed to explore waste management. In recent years Geography has begun to seriously embrace the environment, and nature in particular (Eden 2001). Within this context, the manner in which individuals perceive and practically deal with a critical environmental issue such as waste is grounds for significant geographical research. While the study of behaviour is, as Turner (1988) notes, the proper subject matter of psychology and sociology examines the organisation of individuals in society, both these disciplines have tended to isolate humanity from its wider environmental context, although this has been changing in recent years. Adopting a geographical framework explicitly allows for a study of human-environment interactions and draws on a multitude of theories and methods to bridge the gap between theoretical and applied work. The following sections outline the aims and objectives of the research project (1.2), and the layout of the thesis (1.3).

1.2 Research Aims and Objectives

Following a review of the problem of household waste management it is apparent that an improved and more comprehensive understanding of public attitudes and behaviours towards waste is required. For the purpose of this thesis, references to phrases such as 'attitudes and behaviour towards waste' and 'waste management attitudes and actions', encompass attitudes and behaviour towards waste activities in both the private and public sphere. The private sphere incorporates domestic activities such as those outlined above in Table 1.1 and the public sphere encompasses participation in waste management policy and planning. The principal aims of this research are:

1) To expand on previous research relating to attitudes and actions in Ireland by specifically focusing on waste management.

2) To examine whether the value-action gap identified in general environmental surveys exists within household waste management.

3) To provide a clearer understanding of the reasoning behind attitudes and actions in relation to waste management in Ireland.

A number of specific objectives were identified as a means to achieve these aims:

- To produce base-line quantitative information on (i) public understanding of waste management issues and (ii) public attitudes and behaviour towards waste management.

- To identify the variables that shape attitudes and behaviour of the public towards household waste, including the identification of barriers to, and opportunities for, achieving more sustainable waste management.

- To examine the reasons the participants proffer to justify action or inaction with regard to waste, and also consider the contextual factors which might contribute to an individual's reasoning.

- To evaluate practices to narrow the value-action gap and improve waste management behaviour.

To achieve these aims and objectives a case study research approach has been adopted here. The merits of case study research are well documented (Yin 2003; Kitchen and Tate 2000; Hoggart *et al.* 2002). The use of a case study enables a realistic and current account of contemporary research into public attitudes and actions towards waste management. The application of the case study methodology enables the researcher to thoroughly examine and explore the many different aspects of the topic of household waste including the role of context and social setting. This research method enables the development of initially contextual, or 'place-based', recommendations for improved waste management and minimisation policies. The selection of Galway as a case study region and the methods adopted to conduct the research are considered in depth in Chapter 2 and Chapter 5 respectively.

The opinions of the public in relation to the challenges and issues they face regarding household waste management are central to this research. Through the precise phrasing of several open-ended questions in the questionnaire, the interviews, focus groups and household waste minimisation exercise, this research enables the public to identify initially the barriers to more sustainable waste management and subsequently mechanisms for improved environmental policy-making. In addition, in accordance with sustainable development goals this research project strives to include children, who according to academics such as Knightsbridge-Randall (1999) are often identified as traditionally marginalised from policy-making procedures. The focus group discussions were conducted specifically with children in order to garner the views of the younger generation. Each element of the research was designed to enable those who could not read to participate in the project.

1.3 Structure of the Thesis

After presenting the problem of waste on a global scale and having discussed the role of the householder in the management of waste, the following chapter (Chapter 2) outlines the problems of household waste management in Ireland and the policy and planning approaches that have been introduced to tackle the problem of household waste. The chapter discuses waste policy and its implementation in the case study region of Galway. It also outlines the rationale behind the selection of Galway as a case study for this research. Following the policy review, Chapter 3 reviews previous literature in the field of attitudes and behaviour towards the environment and in particular waste management. The research reviewed derives from a range of different disciplines, including sociology, environmental psychology, behavioural psychology, environmental planning and geography. In addition to reviewing surveys conducted on attitudes and actions towards the environment and waste management in Ireland, this chapter draws upon international research to establish a framework for this thesis. The theoretical frameworks underlying much of the literature reviewed are also considered in this chapter. In particular psychological approaches to attitude and behaviour research are examined. The numerous models and scales that have previously been used to measure and test attitudes and the relationship between attitudes and behaviour are outlined. The chapter discusses the limitations of these theories and, drawing on multiple perspectives from different disciplines, it concludes with a discussion on the development of a framework that will contribute to the field of environmental planning and enhance the understanding of public attitudes and actions towards waste management.

Following the literature review and the discussion of the theoretical aspects involved in the research, Chapter 4 discusses the different methodologies employed to achieve the research aims. After discussing the various methods used in this research, Chapters 5, 6, 7 and 8 present the results of the research project. For the purposes of this thesis, the variables identified as influencing waste management attitudes and behaviours are initially discussed independently and are structured around classifications identified in the literature review. For the main part Chapter 5 primarily focuses on establishing the existence of a value-action gap in waste management. The chapter highlights the main findings of the questionnaire survey and

discusses the variables identified by the respondents themselves that affect their attitudes towards, and actions or inaction with regard to, waste management. The chapter concludes with an examination of how these variables differ when demographics such as age, gender, and housing tenure are examined. Chapters 6, 7 and 8 primarily report on the exploration, through qualitative analysis, of the variables identified in the quantitative stage of the research. These chapters outline specific sets of variables, *personal, practical* and *contextual* respectively, that are reported as influencing waste management attitudes and behaviour. Chapter 6 discusses how personal variables such as altruism, satisfaction, personal experience, civic pride, and personal efficacy have an impact on an individual's behaviour. Chapter 7 examines the practical reasons that shape public waste management actions, such as provision and accessibility of services and information, availability of transport, space, time and money, and economic and administrative incentives. Chapter 8 explores how contextual variables such as societal responsibility, notions of fairness and justice and social and cultural influences, all play a role in influencing waste management behaviour.

The concluding chapter, Chapter 9 draws together each of the sets of variables and synthesises the many issues highlighted throughout the results, concluding that the different sets of variables are interrelated and do not operate in a vacuum. Finally, the chapter discusses the main research findings and examines how the research achieved its aims and objectives. It reflects critically on the conceptual and methodological approaches undertaken in this thesis and the chapter concludes by identifying new areas for future research.

Chapter 2: Waste Management Policy and Planning – Framing Waste in a Policy Context

2.1 Introduction

Waste management in Ireland was once simply regarded as a reserve function of Irish local authorities (Mullally and Quinlivan 2004). However, as the introduction to the problem of waste presented in the previous chapter identified, contemporary waste management planning in Ireland is conducted at multiple levels of government, from EU to local level. The requirements of EU waste management policy agendas have had an important influence on the formulation and implementation of Irish waste policies. This chapter traces the evolution of waste management policy and its application at different scales, European, national, regional and local. The first section (2.2) discusses the waste problem at a European level and outlines the development of European waste policies and their attempts to move towards the sustainable management of waste. Developments in Ireland's waste management policies are then reviewed and critiqued (2.3, 2.4, 2.5). Finally, waste policy in the case study region, Galway, is discussed along with the rationale for the selection of the county as the case study for this research project (2.6).

2.2 Waste Management in Europe: Moving Towards Sustainable Waste Practices?

It is estimated that over 1.8 billion tonnes of waste are generated in the Europe Union (EU) each year (EEA, 2005). In the past 25 years the governments of Europe have focused on the regulation of waste disposal and treatment. The development of EU policy on waste has "accelerated over the past decade, reflecting a rise in both political and public interest in the problem, and concern about the mixed record in bringing it under control" (McCormick 2001:168).

McCormick (2001) notes that EU policies on waste have primarily focused on five policy areas. The first area, discussed by McCormick, is waste management where the initial legislative move was made in 1975 with the objective of "harmonising national waste

measures, and obliging member states to ensure that waste was disposed of without harm to human health and the environment" (McCormick 2001:169). Other activities in this arena were the establishment of a Committee on Waste Management in 1976 to advise the European Commission on waste management policy, and the adoption of a Directive (78/319) requiring member states to reduce the creation of hazardous waste and ensure safe disposal. A second policy area which EU waste policies have focused on, especially during the 1990s, is landfills. As landfills are the most popular form of waste disposal in the European Union, considerable debate occurred as a result of a 1991 draft directive aimed at regulating this method of waste disposal, for example limiting the amount of organic waste added to landfill. In 1999 the Landfill Directive was formally adopted and although the directive initially permitted the disposal of biodegradable waste in landfill, it specified that the disposal of such waste in landfill should be reduced gradually and phased out completely by 2010. EU waste policy has focused on two other primary areas – reducing the creation of specific wastes and managing transfrontier shipments of waste. The final area McCormick (2001) discusses is reducing waste production. The first legislative step to reduce waste production was taken in 1992 by "using market forces to encourage manufacturers to make environmentally friendly products" (McCormick 2001:176). The EU's second attempt to develop a policy on products was in the form of a directive on packaging (94/62), which set a target of 90% per weight of packaging waste to be recovered within 10 years and 60% of that to be recycled. Since 1998 the EU has started to develop an integrated product policy, which would prolong the life of a product, avoid the use of hazardous elements, make recycling and reuse easier and minimise resource use (EEA 2005).

In the past 25 years EU legislation on waste has increased dramatically. Second only to water, waste is responsible for a great proportion of new laws and amendments in the EU environmental sector (EEA 2005). Many of the environmental laws adopted in the EU are in the form of Directives; by 1999 just under 42% of the environmental laws approved by the EU were in the form of Directives (McCormick 2001:73). Directives are binding in terms of the overall objective to be achieved but the onus is on member states to decide the details for implementation of the policies (Jordan 2002:311). EU legislation on waste has been driven largely by directives such as the 1991 Council Directive on Waste (91/156/EEC), the 1993 Commission Decision on a List of Wastes (94/3/EC), the 1994 European Parliament and Council Directive on Packaging and Packaging Waste

(94/62/EC), the 1996 Council Directive Concerning Integrated Pollution Prevention and Control (96/61/EC), and the 1999 Council Directive on the Landfill of Waste (99/283/EC). It is directives such as these that have set the context for waste management in Ireland.

The emphasis of current European legislation on waste has been on the *Waste Hierarchy* (Figure 2.1) and the integration of this hierarchy into European policies. Prevention and minimisation are the preferred options for waste. They are also the most difficult to achieve as their implementation involves a change in attitude and practice of the waste generator (Price 2001). Prevention and minimisation lead to improved efficiency of resources and they benefit the environment by reducing the volume and toxicity of waste produced (EPA 2000b). The next best options as depicted in the hierarchy are re-use, recycling and recovery. The main environmental benefit is the saving of natural resources or materials which might have been utilised had the recovered material not been available (EPA 2000b). In the waste hierarchy, disposal of waste is seen as a last option. The hierarchy illustrates the (ideal) desire of European policies to shift the focus of waste management away from end-of-pipe activities upstream to production processes and consumer changes.

Figure 2.1: European Waste Hierarchy Pyramid. Source: EPA 1999 *Proposed National Hazardous Waste Plan*, p. 6

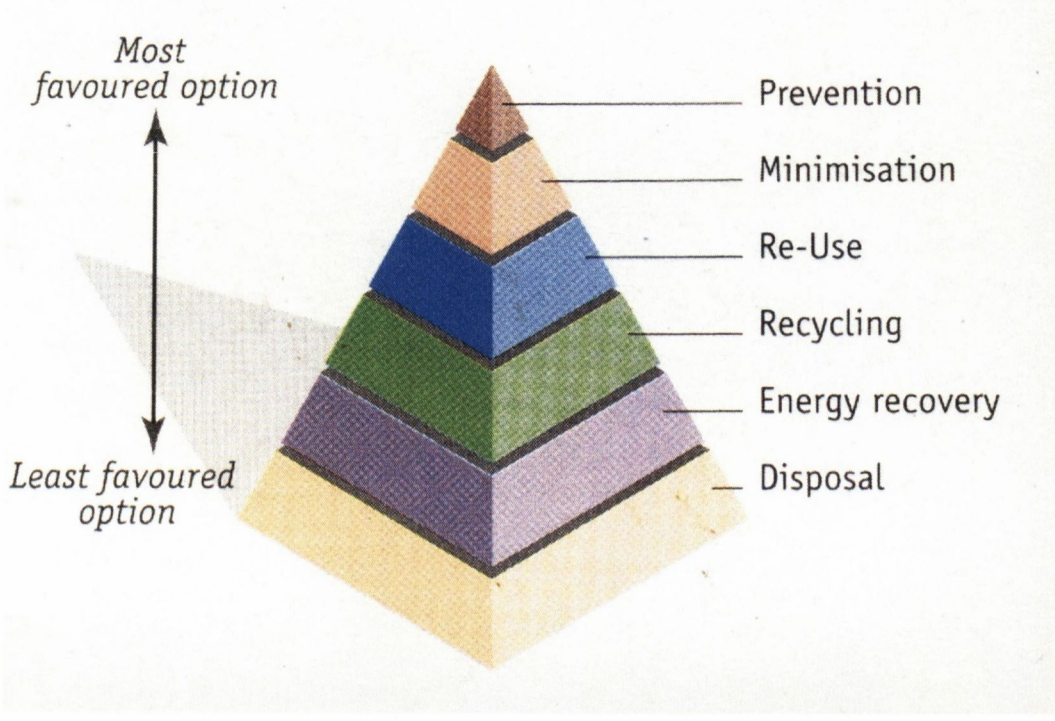
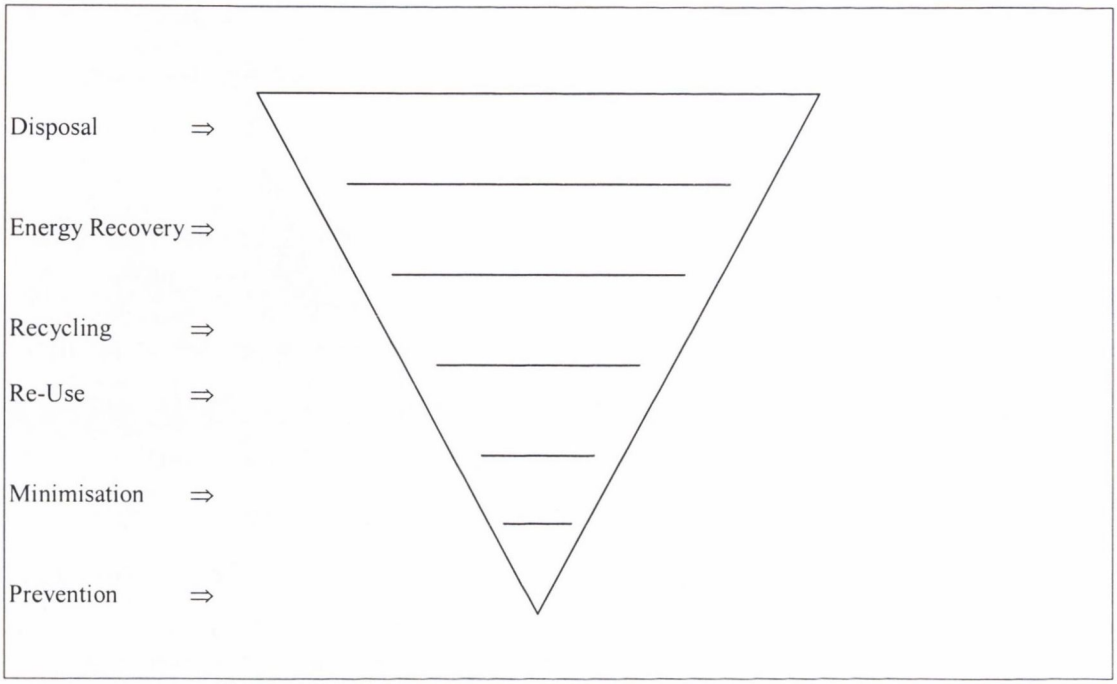


Figure 2.2: Reflective Waste Management Hierarchy



However, while Figure 2.1 displays the ideal waste hierarchy, Figure 2.2 portrays a more reflective diagram of waste management in the EU. At the present time, landfill is still the principal waste disposal route in the EU. According to Fagan *et al.* (2001) this is because in most European countries the cost of disposing waste through landfill is well below the costs of alternative methods. Waste levels continue to increase in Europe even though in the past ten years the EU has implemented many measures to fight against European rubbish mountains. In June of 1993 the European Commission approved a proposal for a directive on landfill waste. The most recent directives on landfill set targets for reduction of biodegradable waste at 75% of 1995 levels by 2006, 50% by 2010 and 35% by 2016 (University of Reading 1999; EEA 2005). Other aims included in recent EU directives regarding the reduction and prevention of waste and landfill as a method of disposal are as follows:

i) To reduce gas emissions and landfilling, gases generated by biodegradable waste, e.g. methane, must be collected, treated and used.

ii) To reduce contamination and improve the control of landfill sites, mixed disposal of non-hazardous and hazardous waste will be banned.

iii) To reduce the amount of hazardous waste being deposited, waste must be treated before being sent to landfill.

iv) The cost of landfill site closure plus the cost of aftercare for 50 years will be included in the costs of disposal (University of Reading 1999).

Another amendment adopted by the Commission is the Polluter Pays Principle (EIS 1994). McCormick (2001:75) notes how the Polluter Pays Principle declares that the cost of preventing and eliminating environmental damage must be borne by "the entity responsible for actually or potentially damaging the environment". However, in practice, there are often problems identifying the responsible party. In the Fifth Action Programme on the Environment, the use of economic instruments such as environmental taxes was recommended to implement the Polluter Pays Principle (McCormick 2001; Jordan 2002). According to Jordan "it is striking that little opportunity has been taken [at EU level] for making use of economic instruments in the attainment of environmental objectives" (Jordan 2002:335). Economic instruments have been more successfully implemented at Member State level. Successful implementation is particularly apparent in the Scandinavian countries, but use of economic taxes has increased in Austria, Belgium, France, Germany, the Netherlands and the United Kingdom since the start of the 1990s (OECD 1995). According to the OECD (1995), environmental taxes have become increasingly important as a revenue source to national governments in Denmark, Finland and the Netherlands (OECD 1995).

The following section outlines the problems of household waste management at the national level, in Ireland, and the approaches that have been introduced to tackle the problem of household waste.

2.3 The Municipal Waste Problem: The Example of Ireland

In response to pressure from the EU, and an appreciation of mounting levels of municipal waste (associated with the economic boom experienced by the country in the last decade) waste management planning in Ireland has recently undergone a radical overhaul. According to the EPA (2000a), waste arising in the Republic increased by over 100 per cent in the fourteen years between 1984-1998. Approximately 74 million tonnes of waste were generated in 2001 (EPA 2003). It is estimated that in 2001 over two million tonnes of municipal waste were generated in Ireland. Of this figure, 1.47 million tonnes were composed of household waste, while 1.16 million tonnes were commercial waste and 78,

469 tonnes were waste from street cleansing (EPA 2003). Landfill is the main destination for municipal waste in Ireland and it is deemed, by organisations such as IBEC (1998) as the most cost-effective method for the disposal of most waste. However, transferring waste to landfill is illustrated in the EU hierarchy of waste as the least favourable option. In 1995, 84.7% of commercial waste, and 95.7% of household waste collected in Ireland was sent to landfill (DELG 1998). In total in 2001 over 8.3 million tonnes of waste were disposed of to landfill (EPA 2004). The number of authorised landfills in the country has decreased from 126 in 1998 to 92 in 2001 (EPA 2004). The reduction in the number of landfills is due to the fact that they (i) reached their capacity or (ii) failed to meet required environmental standards. In 2004, there is an estimated 10 years remaining landfill capacity available for municipal waste nationally (EPA 2004).

Waste recovery infrastructure in Ireland has increased considerably in the past few years. For example, the number of bring banks accepting household waste such as glass and aluminium cans has increased in number from 837 sites in 1998 to 1, 436 sites in 2001 (EPA 2004). An outline of the general terms and definitions used for household recycling infrastructure, throughout this thesis, is presented in Table 2.1. Despite nationwide increases in infrastructure provision, recycling rates in Ireland are still comparatively low. Only 5.6% of all household waste was diverted from landfill in 2001. This nonetheless marks a 100% increase on 1998 levels in terms of tonnes collected for recycling (EPA 2004). In Ireland's current waste management climate attempts have been made to introduce incentives to encourage householders to recycle. For example, pay-by-weight schemes, where the householder must only pay for the waste destined for disposal, have been introduced for householders in cities such as Dublin and Cork. However, waste disposal has been the most convenient method in the past and currently no direct penalties are incurred for not recycling. Although there is little research on householders' recycling activities (use of bring banks, civic amenity sites) research has been carried out on this topic in other countries (and is reviewed in the next chapter). At a national level it is estimated that 11 million tonnes of waste was illegally disposed of by various sectors, industrial, commercial and private householders in Ireland in 2001 (O'Hayes 2004). From such a position (O'Hayes 2004) an understanding of the reasoning behind household waste management behaviour, both positive and negative actions, may well be at the core of any effective improvement in implementing waste management policies. According to many commentators (for example, Buckingham-Hatfield and Percy 1999) such an understanding

of waste behaviour is required if the ambitious goals of sustainability, which are long-term, holistic and all-embracing in nature, are to be realised.

Table 2.1: General terms and definitions for household recycling infrastructure.

Terms for Common Household Recycling Infrastructure[1]	**Definition**
Kerbside collection or green bin recycling	Door-to-door collection of recyclables. The householder may place waste such as paper waste into a separate bin/bag for collection at their doorstep.
Bring/bottle bank facilities	Waste in the form of glass, cans and sometimes textiles may be deposited by the public at these stand-alone units usually located at shopping centres or civic amenity sites (*see below*).
Civic amenity sites or waste recycling centres	Facilities at which the public may dispose of a wide range of waste, e.g. newspapers, plastic, glass or heavy cardboard. There are a growing number of these sites across the country and they are usually located outside of urban areas, often in proximity to an existing or previous landfill site.

2.4 Approaches to Dealing with Municipal Waste at a National Level – Ireland

The following section reviews the policy approaches taken by the government of Ireland to legislate for the problem of municipal waste.

2.4.1 Irish Waste Management Policy

In Ireland until recently waste legislation was based on Public Health acts, with no consolidated legislation on waste. As a response primarily to pressure from the EU, and as an appreciation of mounting rubbish the government realised that there was "a pressing need to develop a modern waste policy foundation and to establish a comprehensive legislative framework that would facilitate and underpin the implementation of sustainable waste management practices" (DELG 2002:1).

[1] Recycling infrastructure is not standardised across Ireland. Householders across the country have differential access to the facilities; those living in some locations may have no access to any of the aforementioned infrastructure. Note also that the facilities may vary greatly with respect to the nature, quantity and type of waste that may be accepted at them.

As a result several pieces of legislation were introduced including the Environmental Protection Agency Act, 1992. This Act established the Environmental Protection Agency (EPA), which provided for a system of integrated pollution control, i.e. a system that would address the generation, recovery and disposal of waste by relevant activities. The EPA became responsible for the establishment of a national waste database and was required to specify and publish criteria and procedures for the selection, management, operation and termination of use of landfill sites (DELG 2002).

Other waste policy developments were:

- The publication of the *National Recycling Plan* in 1994
- The development of the *National Waste Database* by the EPA in 1996
- The publication of the *National Sustainable Development Strategy* by the Department of the Environment in 1997
- The development of a proposed *National Hazardous Waste Management Plan* (EPA 1999).

However, more than any other policy development, the introduction of the Waste Management Act 1996, the 2001 Amendment, and the policy document *Changing Our Ways* have had a resounding impact on the entire Irish waste management system. *Changing Our Ways* is the National Waste Policy Statement issued by the Minister for the Environment and Local Government,[2] in 1998, and was highly influential as it was the first document to outline specific national waste targets for the years ahead (outlined below). The introduction of the *Waste Management Act 1996* consolidated all existing legislation on waste and provided a framework for the implementation of EU directives, some of which had not been implemented in Irish national legislation (IBEC 1998).

[2] Since 1977 the Department charged with responsibility for the environment has been given a number of titles including: Department of the Environment (DoE) 1977-1997, Department of the Environment and Local Government (DELG) 1997-2003, Department of the Environmental, Heritage and Local Government (DEHLG) 2003-present. As a result a variety of titles appear throughout this research. The same varieties of references are made when referring to the Minister in charge of the Department. However, this title is often abbreviated to Minister of the Environment.

2.4.2 Waste Management Act 1996

The Waste Management Act was introduced in May 1996. The Act was intended to facilitate the practical implementation of the European waste hierarchy. There are three main objectives of this Act. Firstly, in response to EU and national requirements a comprehensive regulatory framework for the application of higher environmental standards is to be provided. Secondly, the roles of the Minister, the EPA and local authorities are to be redefined in order to provide more effective organisation of public authority functions in relation to waste management. Thirdly, the Act provides for enabling measures designed to improve performance in relation to the prevention and recovery of waste (DELG 2002). Part II of the Waste Management Act requires the creation of two plans. The first was a hazardous waste plan to be produced by the Environmental Protection Agency. The second plan required local authorities to make waste management plans in respect of their functional areas (DELG 2002). These waste management plans will be examined in the next section.

However, several difficulties arose with all local authorities agreeing to the Waste Management Plans, particularly over the issue of the introduction and location of thermal treatment facilities (DELG 2002). Prior to July 2001, three out of fifteen local authorities in three regional groups had refused to adopt the relevant proposed regional plan. Other local authorities stated that they would adopt the regional plan, but would only do so subject to conditions (DELG 2002). The Government introduced the *Waste Management (Amendment) Act 2001* in order to try and resolve the non-adoption problems.

2.4.3 The Waste Management (Amendment) Act 2001

In 2001 the Waste Management Act was amended and a number of additional features were added:

- A new environmental levy of up to 15 cent on the supply of plastic shopping bags by retailers and, potentially, the extension of the levy to other products which are problematic in waste management terms

- A levy on the landfill of waste, at an initial rate of not more than €19 per tonne
- The establishment of an Environment Fund, through which the proceeds of these levies will be disbursed to finance beneficial environmental initiatives in a range of areas including waste management, environmental education and awareness
- Clarification of the Environmental Protection Agency's position regarding licensing of certain waste activities
- An increase in the on-the-spot litter fine to €127 and provision for future changes in the level of the fine (DELG 2002).

However, one of the primary purposes of the 2001 Act was to stipulate "that the making of a waste management plan will become an executive [management] function, while the power to replace a plan will remain a reserved function of the elected members of the local authorities" (DELG 2001 Section 4 available from www.environ.ie). The government's purported objective of appointing an executive was to overcome obstacles, such as lack of coherence within regional planning, which were argued to have delayed the successful implementation of the waste management planning process.

2.4.4 Changing Our Ways 1998

The *Changing Our Ways* policy document restates that the Irish Government's policy on waste rhetorically revolves around the waste hierarchy with disposal to landfill as the least favoured option and waste prevention and minimisation as the most favoured option (EPA 2000a). It also provides national targets for the achievement of diversion of waste from landfill. The targets to be achieved over a 15-year period outlined in the *Changing Our Ways* document are depicted in Table 2.2. According to the Department of the Environment and Local Government (1998), this policy statement strongly emphasised the need for a dramatic reduction in reliance on landfill, in favour of an integrated waste management approach. However, as the final target reveals, the least favoured option in the waste hierarchy – waste disposal, manifested as waste recovery facilities – still plays a significant role in the future of national waste policy.

Table 2.2: *Changing Our Ways* – national targets to be achieved by 2013 (adapted from DELG 1998)

1. 50% of household waste to be diverted from landfill
2. 65% reduction of the biodegradable waste that goes to landfill
3. 35% recycling of municipal waste
4. Recycle 85% of construction and demolition waste
5. Reduce methane emissions by 80%
6. Reduce the number of landfills
7. Develop waste recovery facilities as an alternative to landfill

As outlined in the Waste Management Act 1996 the government deemed the management of all non-hazardous waste an issue for local government and as such the *Changing Our Ways* policy document was primarily aimed at local authorities, with the intention, according to the national government, of providing "a national policy framework for the adoption and implementation by local authorities of strategic waste management plans under which national objectives and targets will be attained" (DELG 2002 available from www.environ.ie).

2.5 From National to Regional – Ireland's Integrated Waste Management Policy

Since 1996 the legislative thrust of waste management policy in Ireland has been to move away from policies which relied solely on landfill towards policies of integrated waste management. The development of new waste management plans is indicative of this change in direction. As noted previously, Section 22 of the Waste Management Act 1996 requires local authorities to prepare waste management plans. These plans should outline strategies that incorporate prevention, minimisation, collection, recovery and disposal of non-hazardous waste within the Local Authority's jurisdiction. According to the Department of the Environment and Local Government the new waste management plans should "address the development of an integrated waste management infrastructure" (DELG 2002 available from www.environ.ie) and include provisions for:

i) separate collection and segregation of recyclable materials in urban areas

ii) waste transfer stations and civic amenity sites

iii) an extended network of bring facilities in rural areas

iv) recycling capacity for construction and demolition waste

v) materials recovery facilities

vi) biological treatment of 'green' and organic household waste

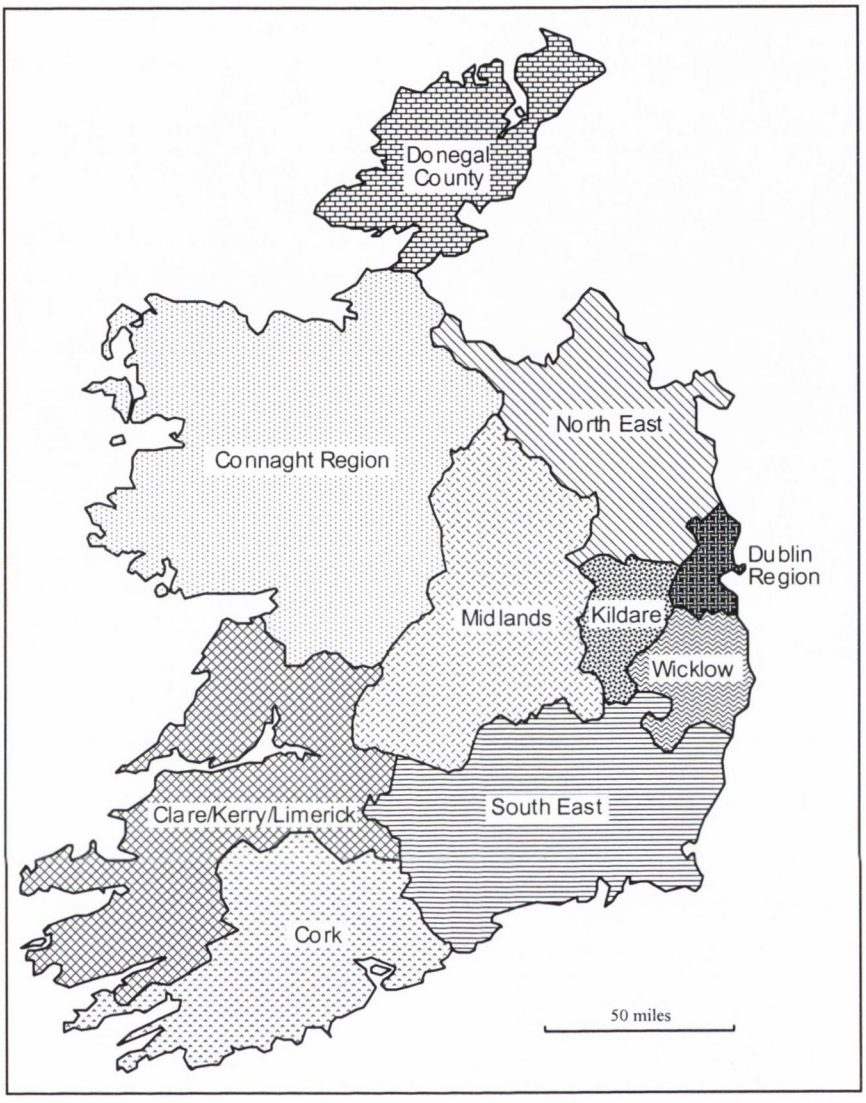
vii) thermal treatment facilities

viii) residual landfill requirements (DELG 1999).

The waste planning process is initiated by the publication (in a local or national newspaper) of a notice announcing the commencement of a waste management plan. There is then a two-month period whereby any interested parties could make a submission. Following this a draft plan is produced but prior to its adoption notices of the plan must appear in the press. The Minister for the Environment and the EPA are among the specific consultees that must also receive a copy of the draft plan (Fehily Timoney 2002). For two months after the date of the second advertisement the public are allowed to obtain a copy of the plan, inspect it and make submissions. Following a review of the submissions, the plan can then be adopted by each local authority and thereafter the onus is with the local authorities to progress with the objectives of the waste management plan.

The Waste Management Act 1996 provided for the collaboration of two or more local authorities to make a waste management plan. The government encouraged local authorities to adopt a regional approach to waste management. It was felt that these regional groupings could avail of economies of scale by facilitating the construction of larger more efficient landfills, creating a market for a number of incinerators and developing recycling infrastructure (Boyle 2001). Since 14 September 2001 all relevant local authorities have adopted waste management plans.

Figure 2.3: Irish Waste Management Planning Regions



Three local authorities, Donegal, Kildare and Wicklow County Councils, have adopted county waste management plans (see Figure 2.3). All other relevant authorities have adopted regional plans as indicated in Table 2.3:

Table 2.3: Waste management planning regions

Regional plan	County Councils
Northeast	Cavan, Louth, Meath and Monaghan County Councils
Dublin	Dun Laoghaire-Rathdown, Fingal, South Dublin County Councils and Dublin City Council
Midlands	Laois, Longford, Offaly, North Tipperary and Westmeath County Councils
Connaught	Galway, Leitrim, Mayo, Roscommon, Sligo County Councils and Galway City Council
Limerick/Clare/Kerry	Clare, Kerry, Limerick County Councils and Limerick City Council
Cork	Cork County Council and Cork City Council
South East	Carlow, Kilkenny, South Tipperary, Waterford, Wexford County Councils and Waterford City Council

The plans contain information regarding each of the regions' present position in relation to waste management, their waste management policy, anticipated developments over the period of the plan and implementation of the waste policy. With regard to the latter point, each waste management plan contains data concerning waste infrastructure at the commencement of the plan and targets for numbers of facilities subsequent to the implementation of the plan. A review of the plans revealed that in developing a waste management policy each region assessed a number of integrated scenarios to determine the Best Practicable Environmental Option (BPEO). Determining the BPEO involves comparing the "relative costs and the relative environmental effects of a number of alternative options in order to identify the most appropriate option" (Gibbons 1999:211). In the regional waste management plans, each scenario involved a combination of different recycling targets, and the possible introduction of thermal treatment leading to landfill disposal of residues (M.C. O'Sullivan and Co. Ltd 2001b). Several of the regional plans discussed identical options to determine the BPEO. The following section discusses the selection of the BPEO contained within the waste management plan for the Connaught Region (which, as identified in Chapter 1, forms the case study for this thesis), and discusses waste planning and the problems associated with waste at the local level.

2.6 Waste Management Planning: From Regional to Local

Galway City Council along with Galway, Mayo, Sligo, Leitrim and Roscommon County Councils collaborated on the Waste Management Plan for the Connaught Region (see Figure 2.3). The plan specifically outlines proposals for the local authorities in the Connaught region to increase kerbside collection, the provision of bring bank facilities, and civic amenity sites. For example, the Waste Management Plan for the Connaught Region aims to achieve a target ratio for the bring bank network in rural areas of "one bank per 500 population" (M.C. O'Sullivan 2001a:61). The Waste Management Plan for the Connaught Region was adopted in September 2001. When compiling the plan, a number of "integrated scenarios were developed in order to assess and determine the Best Practicable Environmental Option (BPEO) for the region's waste" (M.C. O'Sullivan 2001a:58). Three scenarios were devised to determine the BPEO for waste in Connaught.

Scenario 1 – achieve maximum realistic recycling
Scenario 2 – achieve national and EU targets by recycling and thermal treatment
Scenario 3 – achieve maximum landfill diversion through the fastest possible implementation of recycling and thermal treatment.

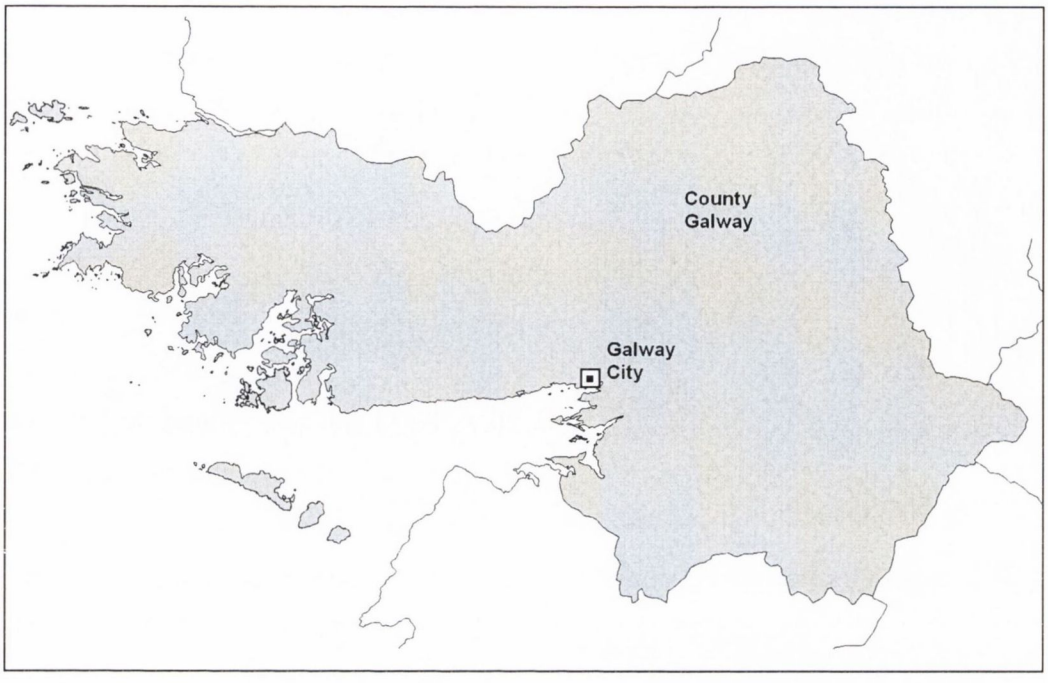
The options were compared on the basis of technical capacity, environmental acceptability and cost. A computer-modelling exercise was carried out to determine the environmental impact and cost of each option. Scenario three was suggested by M.C. O'Sullivan and it was subsequently purported to be the BPEO, "as it meets all Government and EU targets and is environmentally most favoured" (M.C. O'Sullivan 2001a:V). The role of engineering consultants as key decision-influencers has been raised by Davies (2003). With the exception of the waste management plan for the South East, which was prepared by Fehily, Timoney & Co., and the Cork plan, prepared by Tobin Environmental Services Ltd., the remainder of the regional plans were prepared by M.C. O'Sullivan. These enterprises were characterised as 'waste experts' and they were charged with the responsibility of developing a strategic framework for waste in Ireland including the contested identification of a requirement for municipal thermal treatment facilities (Davies 2003:83). As a result most of the regional reports produced reached remarkably similar conclusions. In the case of the Connaught Regional Waste Plan the chosen BPEO anticipates that approximately 33% of municipal waste in Connaught will be thermally

treated and Galway City was suggested as a location for the one thermal treatment facility proposed for the Connaught Region. While discussing waste policy at a county level, the next section examines public reaction to these proposals.

2.6.1 Waste Policy in Galway – A Case Study of Public Attitudes and Actions in Relation to Waste

Galway, situated in the west of the country, is the second largest county in Ireland. Two local authorities, Galway City Council and Galway County Council, operate within this county (see Figure 2.4). One landfill serves both local authorities and is located in Ballinasloe, County Galway. Galway City Council incorporates the city population of 65,774 people (Central Statistics Office 2002). The collection of household waste in the city is predominantly run by the public sector and the extent of coverage of waste collection is over 95% in Galway City (M.C. O'Sullivan 2001a). Compared to other local authorities in Ireland, Galway City Council would be regarded as being progressive in the implementation of its waste management policy. This primarily came about as a response to the proposal at a national level to locate a municipal waste incinerator within the environs of the city. Within a year of the proposal to locate the incinerator in the surrounds of Galway City, Galway City Council introduced a variety of new schemes to improve waste management in its jurisdiction. For example, over 90% of the households in the city have a three-bin service for separating dry recyclables, organic waste for composting and waste for landfill. In comparison, Galway County Council has not implemented waste management policies at the same pace. With a population of 143,052 (Central Statistics Office 2002), household waste collection throughout the County Council region is shared between the public and private sector. Low population density across the county is perceived by the local authority as the main contributing factor behind the large disparity in waste collection recovery rates and fragmented recycling schemes.

Figure 2.4: Galway City and County



Plans to establish a thermal treatment plant in Galway City sparked considerable local resistance. Boyle (2001) suggests that local protest groups opposed incineration on the basis of the following issues: (i) there are concerns about public health risks; (ii) in promoting thermal treatment, prevention and minimisation of waste would be neglected; and (iii) the cost of constructing an incinerator was deemed to be beyond the means of local authorities and fears existed that finances, which might otherwise have gone on new recycling and reuse infrastructure would be absorbed in the construction of the incinerator (Boyle 2001). In addition, a history of concern exists over previous and existing waste management infrastructure, namely standards at landfill sites across the county and extensions to the present landfill in Ballinasloe, County Galway. Along with staging several protests and hosting public debates and meetings, 2,600 people presented individual submissions and a petition to the local authorities with 22,122 signatures expressing their opposition to the plans for incineration (Boyle 2001). This is in marked contrast with the low level of public submissions received to the Draft Waste Management Plan for the Connaught Region (Davies 2003). In line with the Waste Management Act 1996, the public was given an opportunity to submit its opinion on the draft waste plan. However, when submissions were invited on the Waste Management Plan for the Connaught Region only forty-two were received, incorporating public (5) NGOs (7)

Commercial (12) and Public Representatives (18) (Davies 2003:84). The experience of local resistance to waste management planning and the introduction of waste management infrastructure are not unique to Galway. As discussed in a previous section, across Ireland pressure came to bear on most local authorities to resolve their difficulties with the introduction of waste management plans and the enactment of the *Waste Management Amendment Act 2001*.

However, the existence of a tradition of concern over waste issues, including specific concerns regarding landfill, was one of the primary reasons for the selection of Galway as a case study region for this thesis. Other reasons which formed the basis of its selection included the fact that the City Council and County Council both operate within one county, Galway. The presence of both urban and rural populations inside one discrete research area provides considerable scope for comparative analysis particularly in relation to a high disparity in waste collection recovery rates across the two local authorities, with high waste collection rates in the city and very low waste collection rates to the west of the county.

2.7 Conclusion: Framing Waste in a Social Context

Overall the current waste management climate in Ireland, as reviewed in this chapter, has important implications for the framing of the research undertaken for this thesis. At both the EU and national level, policies focusing on the waste management hierarchy and the sustainable management of waste, has attempted to prioritise waste management activities such as waste prevention and minimisation. However, these are the two options for waste which are the most difficult to achieve as they not only involve changing attitudes but also changing practices of the waste generators (the generator in the case of household waste is the householder). In addition, EU Directives such as the Polluter Pays Principle, translated at the Irish national level into schemes such as pay-by-weight bin charges and the plastic bag levy, are having a direct impact on the Irish householder. The prominent role that the householder plays with regard to the management of household waste is an intrinsic part of the conceptual and methodological framework of this thesis.

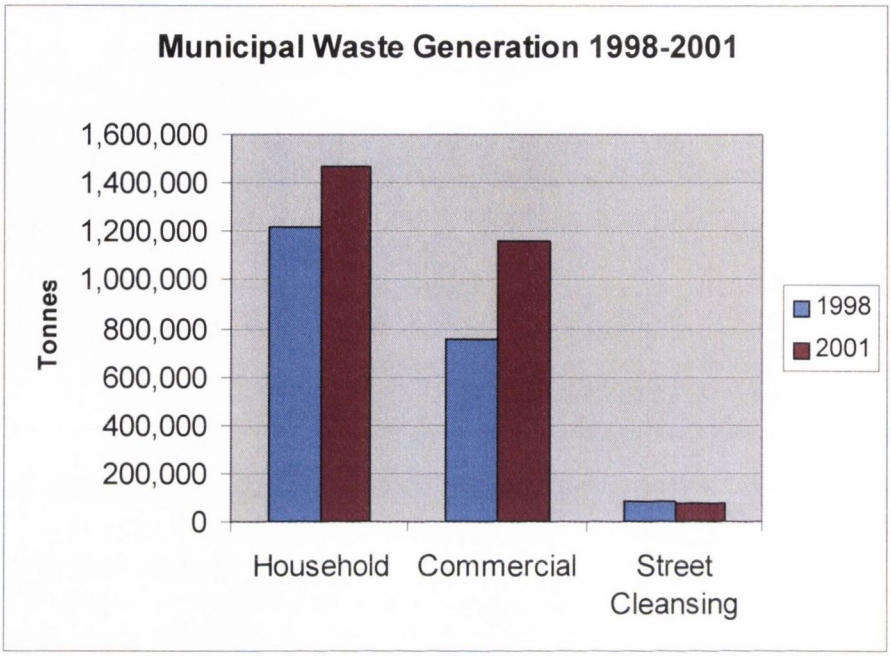
To date, there has been a general tendency to focus on individual responsibility for household waste management problems. For example, in the current decision-making climate, it is commonly held that the success of the new waste management plans relies on

changing public attitudes (EPA 2004). However, Government attempts to change the attitudes and actions of the public towards waste management have been limited. The Department of the Environment and Local Government initiated quantitative research which attempted to investigate public attitudes and actions towards the environment in general. These surveys, reviewed fully in the next chapter, reveal that a discrepancy exists between people's desire for a good quality environment and behaviour that does not directly produce such an environment. The Government of Ireland's primary response to the findings of these surveys was to initiate a mass media environmental awareness campaign – *It's Easy to Make a Difference.* The campaign has since been followed by a similar advertising style promotion that concentrates solely on the topic of waste. The primary tenet of the *Race Against Waste* campaign focuses on increasing public awareness about waste and highlighting the opportunities available for individuals to reduce, reuse and recycle. Research which examines these campaigns and the effectiveness of awareness campaigns in general, is considered in the next chapter.

Despite the development of new national and regional waste management strategies, environmental awareness campaigns, and surveys of public opinion that indicate that the Irish population is increasingly concerned about the quality of the environment and the problem of waste management, there is no decline in the amount of household waste being sent to landfill. Between 1998 and 2001 the amount of household waste sent to landfill increased by 20.3% (see Figure 2.5).

More specifically, as reviewed in this chapter, recycling rates in Ireland are still low despite increasing provision of recycling infrastructure, and this discrepancy raises fundamental questions regarding issues such as public perceptions of the type of recycling facilities available, the location and accessibility of these facilities. In addition, the increase in illegal dumping is another prominent feature and blight in the current waste management landscape in Ireland. However, to date, there appears to be a dearth of research examining people's perceptions of illegal dumping, and the reasons behind this behaviour. These are just some of the many issues which are investigated throughout this thesis. As implied in this chapter, an understanding of the reasoning behind household waste management behaviour, both positive and negative actions, may well be at the core of any effective improvement in implementing waste management policies.

Figure 2.5: Municipal Waste Generation 1998-2001. Source: Adapted from EPA (2003) National Waste Database



Beyond the waste management activities of householders in the home, this chapter also identified that the introduction and location of the infrastructure associated with an integrated approach to waste management has met with resistance, particularly to proposals for municipal waste incinerators, but also in relation to the extension of landfills and even the location of recycling facilities. Indeed, the Government of Ireland is aware that "new waste management facilities are generally unwelcome to the public" (Dempsey 1998:19). The Galway case study (reviewed in Section 2.6.1) demonstrated the low level of public involvement in the formal process of waste management planning (Davies 2003) and yet the high level of public protest regarding the proposal to locate an incinerator in the Galway City region. These trends indicate that waste problems cannot be solved by technical solutions on their own. There is a need to understand the social, economic, cultural and political issues involved in the management of waste. Consequently, the remainder of this thesis considers attitudes and actions towards the management of household waste not only in the private sphere (activities such as recycling or composting) but in the public sphere (attitudes towards involvement in waste planning processes, participation in protest over waste management infrastructure etc.).

As the following review of research on attitudes and behaviour reveals, researching the social and political aspects of waste is not a straightforward task. Increasing awareness and changing attitudes about the environment or, more specifically, waste, does not necessarily translate into improved environmental or waste management behaviour. No in-depth research has yet been carried out specifically about this subject matter. This thesis will help address this gap in research.

Chapter 3: Literature Review And Underlying Theoretical Frameworks

3.1 Introduction

As the aims of this research are to expand on previous research relating to attitudes and actions in Ireland by specifically focusing on waste management, and to provide a clearer understanding of the reasoning behind attitudes and actions in relation to waste management, this chapter reviews previous research considering (i) the public's role in waste management planning and (ii) public attitudes and actions towards the environment and waste management. As discussed in the previous chapters, in Ireland in addition to rising amounts of waste, scenes of public resistance to waste management planning and the introduction of waste management infrastructure have become commonplace on the Irish landscape. Consequently, this thesis examines attitudes and behaviour towards participation in waste management policy-making in addition to attitudes and behaviour towards domestic waste management. Therefore, for the purposes of structuring the research and providing a better understanding of the topic, two primary perspectives were identified from the literature, namely public participation in waste management and environmental attitudes and actions.

Before discussing these two perspectives in turn, the following section (3.1.1) presents a general overview of waste management research in Ireland. It reviews and critiques recent reports and previous research conducted on waste management in Ireland. The National Government under the auspices of the Department of the Environment, Heritage and Local Government and the Environmental Protection Agency are the principal actors involved with much of this research and these reports. The current emphasis on technical solutions to waste management problems and the predominance of top-down approaches to waste management planning are important in light of the aim of this research to examine public attitudes and actions towards waste from a bottom-up or grass-roots perspective. The section reviews and critiques the limited amount of current research conducted in Ireland investigating public attitudes towards the environment.

Following this general overview of recent research on waste management in Ireland the chapter then examines literature on the first primary perspective, public participation in waste management planning and policy (3.2). The section initially examines international research and research from Ireland on public participation, deliberation and waste management. However, as the majority of previous research conducted in Ireland on public participation in waste management planning is confined to debates about public opposition to waste management infrastructure and assumptions about a *not in my backyard* (NIMBY) position among the public, the section subsequently reviews international research on the contested NIMBY position and discusses public motives for potential opposition to waste management planning (3.2.1).

The chapter then turns to consider literature that focuses on the second perspective, environmental attitudes and behaviour (3.3). The main emphasis of this thesis involves an examination of the attitudes and actions of the householder towards waste management. However, in order to isolate the subtext of these attitudes and actions in their proper context, it is necessary to go beyond the level of the individual and to consider wider social contexts. The chapter reviews existing literature that examines environmental attitudes and the relationship between environmental attitudes and behaviour. In addition, this chapter examines the conceptual frameworks underpinning much of this literature. It explores the theoretical foundations of attitude and behaviour research and examines how they have been applied to the field of waste management (Sections 3.4, 3.5). Theories of attitude and behaviour are examined because, as discussed in previous chapters, waste policy research has tended to be regarded as a technical problem rather than a conceptual issue. The limitations of these theories and literature regarding the value-action gap are subsequently discussed (3.6). Section 3.7 outlines more recent theoretical frameworks. In addition, literature discussing the influence of other variables on behaviour is considered and a framework for analysis of literature and subsequent research data, which includes personal, demographic, practical and contextual variables, are outlined in this section (3.7).

This chapter concludes with a discussion of the challenges and opportunities the different perspectives identified throughout the literature review bring to bear on the empirical research conducted for this thesis. Drawing on multiple perspectives from different disciplines the chapter proffers the application of a *grounded theory* approach to

researching environmental attitudes and behaviour, which will contribute to the field of environmental planning and enhance our understanding of public attitudes and actions towards waste management.

3.1.1 Waste Management in Ireland – Recent Research

The current waste management crisis in Ireland and developments in the waste management planning system have not gone unnoticed. Researchers such as Clinch *et al.* (2002), Mullally and Quinlivan (2004), Boyle (2001), Davies (2003) and Fagan (2001) have, in their respective disciplines, namely politics, geography and sociology, studied the waste management situation in Ireland. While Clinch *et al* (2002) concern themselves with the physical increase in amounts of waste arising, Boyle (2001) and Mullally and Quinlivan (2004) discuss the problems associated with implementing the country's new waste management plans and relate these difficulties with the government's political decision to scale waste management problems. In a similar political vein Fagan (2001) examines the Irish waste situation in the context of waste networks and the political processes of waste governance. Davies (2003) focuses attention on the under-researched area of the role of the public in waste management.

In the main, literature on waste management in Ireland has predominantly focused on the formation and implementation of international and national waste policy. The literature largely comprises government documents and scientific reports and, as such, most of the information available about waste is derived from a top-down perspective. Much of these data focus on the promotion of technical solutions to the problems of waste management at the expense of other methods higher up the hierarchy. For example, the plans and the chosen BPEO for each waste management planning region prioritise end-of-pipe solutions. An urgent need for landfill and the introduction of thermal treatment facilities are core elements of the chosen BPEO in each regional plan. As discussed in the previous chapter, these options rely on a change of attitude and behaviour on the part of the waste generator. The Waste Working Group is an organisation in Ireland that has published submissions highlighting the fact that the new waste management plans rely heavily on end-of-pipe disposal activities (Waste Working Group 2002b). This group, which is a coalition of non-governmental organisations, including Voice and Earthwatch and other individuals who work in the area of waste and resource management, have produced and published detailed

submissions outlining its strong objections to each of the waste management plans. The group contends that the scenarios used to determine the BPEO within each of the plans focused on the "least sustainable options as outlined by the EU waste hierarchy … options essential to a sustainable plan such as source reduction, reuse and repair are ignored …" (Waste Working Group 2002a:1).

Table 3.1: Sample of waste management reports published by the DoEHLG and the EPA

Source	Report
Department of the Environment, Heritage and Local Government	▪ Waste Management in Ireland – Policy Statement (1995) ▪ Waste Management – Changing our Ways (1998) ▪ Consultancy Study on Plastic Bags ▪ Capital Grants Scheme for Waste Management Infrastructure Projects ▪ Introduction of a Landfill Levy ▪ Waste Management (Movement of Hazardous Waste) Regulations, 1998 (S.I. No. 147 of 1998) ▪ Waste Management (Use of Sewage Sludge in Agriculture) Regulations, 1998 (S.I. No. 148 of 1998) ▪ Waste Management (Transfrontier Shipments of Waste) Regulations, 1998 (S.I. No. 149 of 1998) ▪ Waste Management (Licensing) (Amendment) Regulations, 1998 (S.I. No. 162 of 1998) ▪ Waste Management (Hazardous Waste) Regulations, 1998 (S.I. No. 163 of 1998) ▪ Waste Management (Farm Plastics) Regulations, 2001 (S.I. No. 341 of 2001) ▪ Waste Management (Licensing) (Amendment) Regulations, 2001 (S.I. No. 397 of 2001) ▪ Waste Management (Environmental Levy) (Plastic Bag) Regulations 2001 (S.I. No. 605 of 2001) ▪ Waste Management (Packaging) Regulations 2003 (S.I. No. 86 of 2002)
Environmental Protection Agency	▪ Waste Electrical and Electronical Equipment 2001 ▪ National Waste Database Report 1998 ▪ National Waste Database Report 2001 ▪ Landfill Site Design Manual 2002

The majority of reports commissioned by the government under the auspices of the Department of the Environment, Heritage and Local Government and the EPA on the topic of waste management are scientific in nature (see Table 3.1 for some examples). The scientific content of much of the current research on waste issues in Ireland lends to a top-down approach to waste management planning. From the overview of waste management planning in Ireland, presented in the last chapter, it is clear that the government, policy makers, and 'expert' consultants play dominant roles in developing waste management policies.

3.2 Public Participation, Deliberation and Waste Management

The lack of attention paid to the attitudes and actions of the general public in relation to waste management is especially significant in light of current emphasis on public participation as a key element of sustainability strategies. The involvement of the public in environmental policy-making has been proffered as a way of developing citizen empowerment, increasing social responsibility and enhancing institutional legitimacy. Macnaghten and Jacobs (1997) discuss how the contemporary prominence of public participation, within the sustainability discourse, has two sources, value based and instrumental. With regard to the former, participation is viewed as an end in itself – one of the core principles of Agenda 21 argues that if ordinary citizens, particularly those from marginalised groups, join in decision-making processes, the outcomes of those processes will be regarded as more robust. Indeed an increasing body of literature (Healey 1997; Mason 1999; Weber 2003; Kenyon *et al.* 2003) exists reviewing approaches to enlarge participation and overcome the problem of social exclusion in processes of decision-making. The challenge for management of local environmental change, according to Healey (1997:128), is "to discover what the diverse people in a place are concerned about and to find a way forward which will work for most people without excluding too many interests and values". The second source of participation within the sustainability discourse, identified by Macnaghten and Jacobs (1997) is instrumental. It is commonly held that essential social, economic and environmental changes will only be achieved if ordinary members of the public are prepared to change their behaviour and embark on sustainable living. The public can directly partake in domestic environmentally friendly behaviours (recycling, 'green shopping') or indirectly participate by taking part in

consultative processes on public policy issues, which may lead to political support for sustainable policies (Macnaghten and Jacobs 1997).

In the UK in recent years, particularly since the introduction of Local Agenda 21, bottom-up approaches to reach agreement and develop proposals and policies on many types of planning issues including waste have been established (Bickerstaff and Walker 2002). However, Arnstein (1969) remarks that there are significant gradients in public participation and that real participation is only possible when there is full control by the participants or at the very least complete partnership. Otherwise participation can retreat to levels of "tokenism", where participants can hear (are informed) and be heard (are consulted) but they lack the power to ensure that their views will be incorporated by those in power (Arnstein 1969:217). Wilson *et al.*'s (2001) research on eleven municipal waste programmes in nine European countries found that public involvement in waste management, through consultation or actual participation, is growing. However, the research revealed that most of the planning schemes limited public involvement by not going beyond asking for the public's opinion and informing citizens about the proposed options. They were also criticised as not being representative and inclusive. Deliberation, the discussion of reasons for and against something (Concise Oxford Dictionary, 1990), has been proffered as a means for addressing such issues (Splash 2001; Petts 2001). While participation by large numbers is viewed as providing representation of public opinion, deliberation operates most effectively with small groups (Splash 2001). Providing the public with a more pro-active role in the planning process has been approached through the development of a variety of innovative deliberative techniques such as deliberative mapping (Burgess 2003), citizens' juries (Kenyon *et al.* 2003), community (citizens') advisory committee (CACs) (Petts 2001), and focus groups (Davies 1999c). Petts (2001), in her research in the UK, discusses four examples of the application of citizens' juries and community (citizens') advisory committees to develop waste strategies by the English local authorities of Hampshire, Essex and Lancashire. To varying extents, the outcomes of both techniques were perceived as successful in affecting policy decisions. The CACs in particular were noted for their success with encouraging open transparent deliberation, promoting a consensus and coping with dissent and disagreement with regard to difficult waste issues. It is recognised that deliberation in itself is not an unflawed process (Petts 2001; Owens 2000; Davies 2001). As Davies (2001:212-213) remarks, these deliberative forums "work within wider structures of political relations and themselves replicate,

reconstruct and reproduce patterns of powers at a variety of scales". Further discussion on the broader social and political debates surrounding public attitudes and behaviour including participation are presented later in this research.

In the Irish context, the introduction of Local Agenda 21 is still in the very early stages. For the most part, progress on Local Agenda 21 to date has been confined to the reform of local government in Ireland (Mullally 2004). City and County Development Boards have been established with the objective of local development structures and local government and enhancing participative democracy (Comhar 2002). However, an evaluation of community participation in these City and County Development Boards is currently lacking (EPA 2004). As noted by the National Sustainable Development Partnership (Comhar), "the challenge now is to move towards real participation and to support the participation of those traditionally excluded to ensure that it will bring about societal change" (Comhar 2002:29). Paralleling this, in Ireland to date, little research has been directed towards the public and their input in waste management planning. One notable exception is Davies' (2003) examination of the public's involvement in the Irish waste management planning process. As discussed in the previous chapter, the location and introduction of waste management infrastructure has met with resistance, particularly to proposals for municipal waste incinerators, but also in relation to the extension of landfills and even the location of recycling facilities. Davies (2003) identifies a discrepancy between public participation in the formal process of waste management planning and informal protests against the infrastructure associated with waste management. However, in general, it would appear that research on public attitudes towards waste management planning is limited to a surface discussion about opposition to waste management infrastructure and assumptions about a reactive *not in my backyard* (NIMBY) position amongst publics.

3.2.1 NIMBYism and LULUs

As in other countries, waste location or "the geography of rubbish" (Clark and Smith 1992:3) in Ireland has historically met with little public support. As environmental awareness in Ireland has increased in recent years, communities have joined in opposition to waste infrastructure such as waste disposal facilities and thermal treatment facilities. According to Bechtel (1997:115) it is often found that "although the local populace support

the project in principle, they strongly object to it being in their immediate neighbourhood". Incinerator facilities, landfills and proposals for both, have faced opposition from local communities in most countries in Europe for at least the past 15 years (Petts 1994). The uneven location of such infrastructure has been well documented throughout many countries in Europe. According to Blowers and Leroy (1994) facilities tend to be located in peripheral communities, areas that are characterised by remoteness, economic marginality, political powerlessness, a culture of acceptance and existing environmental degradation. The economic, social and political characteristics of these peripheral areas appear to "reproduce the pattern of social, spatial and environmental inequality" (Blowers and Leroy 1994:197). Community opposition to waste management infrastructure has given rise to many phrases including *not in my backyard* (NIMBY) and *locally unwanted land uses* (LULUs) (Popper 1988 in Blowers and Leroy 1994:198). The vast majority of literature that explicitly explores the NIMBY syndrome has been published since the late 1980s and originates from the US (Burningham, 2000). Based on the large amount of American literature on the psychology of opposition to LULUs and on the basis of the NIMBY syndrome, commentators such as Clark and Smith (1992), Petts (1994) and Boyle (2001) have identified some of the prime factors involved in a local community's opposition:

i) Perceptions of risk to the environment and health
ii) A lack of information availability and of communication of risk information
iii) A lack of trust in regulatory bodies to control and monitor facilities
iv) The exclusion of the public from basic policy decisions about waste management or their involvement only after initial decisions has been made.

Burningham notes that NIMBYism has developed from a "focus on individual motives for protest to a concern with social causes and significance of local opposition to proposed developments" (Burningham 2000:55). This movement from NIMBY to NAMBY (not in anyone's back yard) is evident from the factors listed above; opposition to the location of waste infrastructure is not based only on self-interest, wider social and political issues, such as general environmental concern, distrust of decision makers and lack of consultation, also play a role. De-Shalit (2000:126) discusses how NIMBYism, when accompanied by a search for "local sense-of-place values", may help to protect the environment. Owens and Cowell point out that "opposition increasingly questions the very existence of certain forms of development because of the wider threats that they pose"

(2001:129). Indeed, Kemp (1990:1240,1247) argues that the concept of NIMBY may be used too eagerly, that "the notion of 'NIMBY groups' belittles legitimate public concerns by labelling their actions as narrow, self-interested, and localised political protests" and that labelling opposition as NIMBYist "often disguises a more fundamental range of technical, environmental, and socioeconomic concerns". The thrust of Kemp's hypothesis emphasises the need to shift from a simplistic assumption of NIMBYism to a more nuanced understanding of public attitudes towards waste and waste facilities. A primary aim of the current research is to gain such an understanding.

3.3 Environmental Attitudes and Behaviour

It is posited by researchers such as Tenbrunsel *et al.* (1997) and Redclift (1999) that fundamental behavioural change is required to meet even the most modest environmental aspirations. However, changing behaviour requires an examination of the underlying reasons for such behaviour. Over the past 25 years a large amount of research on "environmentally responsible" and "socially conscious" behaviours has emerged (Taylor and Todd 1995:606). However, not much is known about the reasons for individual action in the waste management and environmental arena. In particular little is known about

(i) the relationship between an individual's attitudes and actions, or
(ii) the factors that influence individual waste management activities and participation decisions.

Most literature examining ways to increase levels of pro-environment behaviour has focused on the rationale behind pro-environment attitudes as the primary means to increase behaviour (Van Liere and Dunlap 1980; Oskamp *et al.* 1991). In recent years literature has emerged from a variety of fields, such as psychology, sociology, and economics, which attempts to discuss the numerous other factors that influence environmental behaviour. The relationship between environmental attitudes and behaviour and the theoretical attitude-behaviour frameworks which underpin this relationship and the wider body of literature are discussed and critiqued (Section 3.4). The subsequent sections review the existing literature that examines environmental attitudes (3.5) and explore existing research on the value-action gap (3.6). Section 3.7 reviews more recent theoretical frameworks and literature discussing the influence of other variables on behaviour.

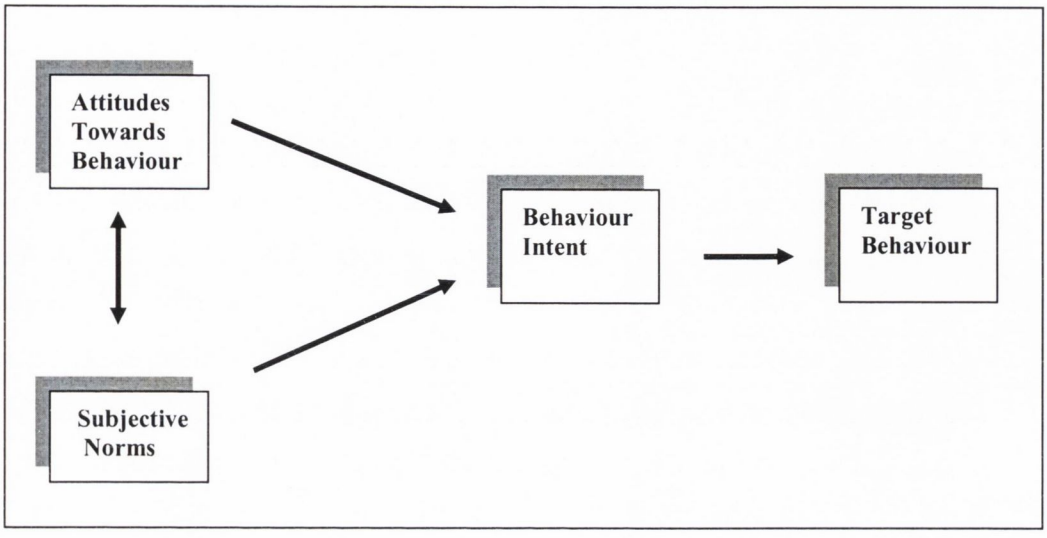
3.4 Theorising Environmental Attitudes and Behaviour

The concept of attitude was originally developed to explain differences in individuals' behaviours, which was a central concern of fields such as psychology and sociology (Liska 1975). Hence, much of the early research on environmental attitudes and behaviour has largely taken place within the field of psychology and, as such, research on factors determining environmental behaviour has focused on the study of individual variables, e.g. values and beliefs. Attitude models, such as Fishbein and Ajzen's (1975) *Theory of Reasoned Action* and Dunlap and Van Liere's (1978) *New Environmental Paradigm,* are based on cognitive theories of how individuals develop their attitudes and plan their behaviour in a logical way. Despite criticism, primarily directed towards the models' almost complete neglect of the role of practical and social variables (for example, the provision of facilities or demographics such as age), these approaches, nevertheless, have served as a springboard for the development of more recent frameworks for researching attitudes in relation to environmental issues. The following sections discuss the Theory of Reasoned Action, the New Environmental Paradigm, and recent frameworks which have emerged to research environmental attitudes and behaviour.

3.4.1 Theory of Reasoned Action (1975)

Since the 1970s a series of theories, or *expectancy-value models*, have been developed to examine the relationship between attitudes and behaviour. Fishbein and Ajzen's (1975) *Theory of Reasoned Action* (TRA) has become a key theoretical framework for examining the relationship between attitude and behaviour (Bohner 2001). Initially developed and manipulated in the US to ascertain public political preferences during elections, the TRA places attitudes in a causal role in relation to behaviour. As illustrated in Figure 3.1 according to the TRA there is an intrinsic link between intentions and behaviour. Fishbein and Ajzen argue that the only predictors of behavioural intention are attitudes and subjective norms.

Figure 3.1: Theory of Reasoned Action (adapted from Fishbein-Ajzen 1975)



This model assumes that attitudes are learned, that attitudes affect action and that action or behaviour, whether favourable or unfavourable, is generally consistent over time. The TRA also presumes that once attitudes are known a person's behaviour is much more predictable. Fishbein and Ajzen concluded that there was a direct interaction between attitudes and subjective norms (or the diverse social pressures under which an individual functions) towards a targeted behaviour. The TRA has been successfully applied to predicting a range of behaviours including simple strategy choices in laboratory games and consumer choices (Bohner 2001). A review of the literature exploring the influence of attitudes on behaviour is presented in the next section (3.5). However, several researchers deem Fishbein and Ajzen's distinction between attitude toward the behaviour and subjective norm as somewhat arbitrary (Eagley and Chaiken 1993). The limitations of expectancy-value models are critiqued later in this chapter. Indeed, in a later work Ajzen (1991) remarked that there were likely to be some individual behaviour that would not be explained by the model. These include carrying out well-learned skills and expressive outbursts. The two researchers also acknowledged that certain individuals can arrive at their decisions in different ways but, in general, both academics still considered their model useful for the majority of people and behaviours. The TRA was initially used to ascertain public voting preferences and has only recently been applied to the field of environmental research (Barr 2002). In contrast, while purposely investigating the relationship between attitudes and behaviours to the environment, researchers Dunlap and Van Liere produced the *New Environmental Paradigm* (NEP).

3.4.2 New Environmental Paradigm (1978)

Constructed in 1978 the NEP examined the relationship between attitudes and behaviour pertaining to the natural environment and associated human attitudes and behaviours. Developed during a decade when concern in the US over environmental issues had reached an all-time high, Dunlap and Van Liere argue that the NEP offered a movement in societal values away from both the *Dominant Western Worldview* (DWW) characterised by materialism and over-consumption and the *Human Exemptionalist Paradigm* (HEP) characterised by growth and mastery over nature, towards the NEP which values nature highly and accepts limits to growth. The NEP proposes that it is people's duty to protect nature, to acknowledge the frailty of ecosystems and to adopt lifestyles which will protect the natural environment. Dunlap and Van Liere devised a short questionnaire in 1978 with a twelve-point scale (presented in Table 3.2) to investigate environmental attitudes. This questionnaire has been tested and continues to be used to this day. Respondents were ranked on a scale which differentiated between those who were willing to help the environment and those who were unwilling. The results suggested that those who exhibit environmental values have different value orientations to those who do not exhibit these values.

Table 3.2: New Environmental Paradigm (Dunlap and Van Liere 1978)

New Environmental Paradigm
▪ We are approaching the limit of the number of people that the earth can support
▪ The balance of nature is very delicate and easily upset
▪ Humans have the right to modify the natural environment to suit their needs
▪ Mankind was created to rule over the rest of nature
▪ When humans interfere with nature it often produces disastrous consequences
▪ Plant and animals exist primarily to be used by humans
▪ To maintain a healthy economy, we will have to develop a steady state economy where industrial growth is controlled
▪ Humans must live in harmony with nature in order to survive
▪ The earth is like a spaceship with only limited room and resources
▪ Humans need not adapt to the natural environment because they can remake it to suit their own needs
▪ There are limits to growth beyond which our industrialised society cannot expand
▪ Mankind is severely abusing the environment

However, paralleling one of the limits of the Theory of Reasoned Action, this paradigm concentrates on the individual and on individual concern for the environment as opposed to the dynamics that exist between individuals as members of households, communities or

groups. In addition, as discussed in the following section, the work of Dunlap and Van Liere has influenced others who have attempted to specify the value orientations which give rise to environmental attitudes and behaviour. However, tests of the NEP conducted by Dunlap and Van Liere (1978) themselves failed to record a strong attitude-behaviour correlation. A review of literature discussing the problems which emerge when these theories of environmental attitudes are translated into practical policies is presented in Section 3.6.

3.5 Environmental Values, Attitudes and Concerns: A Literature Review

While some research debates the differentiation between the definitions of *values, attitudes* and *concerns,* much of the research conducted in this area interchanges these terms (Pelletier *et al.* 1996). For the purposes of this research, values, attitudes and concerns shall be grouped under the term 'attitudes', as it is the most popular term used in research into environmental behaviour (Barr 2002). Further, for the purpose of this thesis, an attitude is defined, in line with many contemporary attitude theorists (Eagly and Kulesa 1997; Bohner 2001), as a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour. The body of literature on environmental attitudes focuses largely on two main areas, trends in public opinion about the environment and the socio-economic correlates of environmental attitudes (Stern *et al.* 1993).

3.5.1 Growth in Environmental Concern

Environmental issues and concerns have become part of our everyday lives. Connelly and Smith (1999) remark that there has been a renewed concern about the environment since the early 1960s and that this is reflected in the increase in membership of environmental organisations and the establishment of many new environmental organisations in the past few decades. Other commentators (Dunlap 1991; Macnaghten and Urry 1998) discuss the evolution of public concern about the environment in the United States since the 1960s – a reported peak around the time of the first Earth Day in 1970, then a decline and a steady rise through the 1970s, followed by a significant rise in public concern during the 1980s and 1990s apparently as a result of heightened media attention to environmental disasters such as the Chernobyl tragedy. In their review of environmental attitudes in European societies, Macnaghten and Urry (1998) report that public concern was constant during the

1970s, rose during the 1980s and peaked in 1989. However, much of the literature tracking public attitudes and values and behaviour towards the environment has been dominated by attempts to measure environmentalism. This is reflected in the use of quantitative approaches to researching this topic. A full review of the methodologies employed throughout the literature on environmental attitudes and behaviour will be considered later in this research.

3.5.2 Socio-Economic Correlates of Environmental Attitudes

Early research on environmental attitudes noted that even when the general level of public concern was high, particular groups of the population expressed more concern than others (Lipsy 1977). For example, Lipsy (1977) in his US based research, notes that education is an important variable which distinguishes those concerned about the environment from those individuals who are not as concerned. He reports that college graduates in the US expressed higher levels of environmental concern than those with a grade school education or less. With regard to the relationship between age and environmental attitudes, Lipsy observes that in many cases no difference has been established between levels of concern expressed by older and younger cohorts. Several researchers (Stern *et al.* 1993; Steel 1996; Buckingham-Hatfield and Matthews 1999) argue that gender differences emerge in relation to environmental attitudes. Steel for example refers to the fact that men tend to perceive moral dilemmas in terms of "more impersonal features of situations and to resolve them by appeal to rules of justice" (Steel 1996:29). In contrast women perceive such dilemmas in terms of "interpersonal relationships and therefore to resolve them by an ethic of care" (Steel 1996:29). The notion that women take a more emotive view of nature is reiterated in some eco-feminist literature, which argues that women hold more pro-environmental attitudes because of biospheric orientation (for a review see Stern *et al.* 1993). In addition to demonstrating in her study that women's concern for the environment is consistently higher than men's, Buckingham-Hatfield's (1994) research in the UK noted that women with children were more likely to be concerned about environmental problems than women without children. With regard to income, Lipsy (1977) notes that people with higher family incomes are more likely to worry about environmental problems. On the same premise, Mason (1999) remarks that for the poorest 20% of society issues regarding everyday survival strategies overshadow concern for the environment. This literature lends to the popular, yet sometimes contested, perspective that environmentalism follows Maslow's

hierarchy of needs which purports that individuals become concerned about quality of life conditions (encompassing the environment) only when their basic needs (such as food and shelter) have been met. Another variable, which is often unobserved, is location, or the relationship between geographical place and environmental attitudes. In one notable exceptional case, Lipsy (1977) notes that Americans living in the Northeast or West of the country express more concern over environmental problems than those living in the South or Midwest. However, he adds that this differential may be a result of the severity of environmental problems in certain regions. Similarly, little research has been conducted investigating the attitudes of individuals living in urban and rural environments. For example, are individuals who live in cities less likely to have positive environmental attitudes than those who live in rural areas and spend more time in close contact with nature?

3.6 Relationship between Attitudes and Actions – Literature on the Value-Action Gap

As demonstrated in Sections 3.4 and 3.5 above, social-psychology literature from the 1970s asserts environmental attitudes as important determinants of environmental behaviours. Several studies have examined the relationship between attitudes and environmentally related behaviours such as conservation (Kotchen and Reiling 2000), political participation (Steel 1996), and measures relating to willingness to pay (WTP) for environmental protection (Stern *et al.* 1993; Ritov and Kahneman 1997). The underlying assumption in much of the research conducted on attitudes, is that those with pro-environment attitudes or who value the environment for its intrinsic worth, are predisposed to act in an environmentally friendly manner. Many people adopt a wider perspective when considering environmental public goods (Jacobs 1997). Lipsy (1977) discusses one early study of environmental engineers and public health officials where those whose personal value orientation emphasised the subordination of nature to human control were inclined to feel that environmental problems were not of great concern and that involving the public in those issues was not sought-after. In contrast those who perceived nature as dominant were more concerned about environmental problems and championed the involvement of the public in the decision-making process. As reviewed above, (Section 3.4) one of the most widely documented studies on measuring environmental attitudes is Dunlap and Van Liere's (1978) scale for environmental attitudes and actions – the New Environmental Paradigm (NEP). This research investigated the ways in which people who are concerned

about the environment view the world differently when compared to individuals who are less concerned about the environment. After testing their scale in Washington State in the US Dunlap and Van Liere reported that those participants involved in environmental organisations scored higher on the scale than ordinary members of the public. However, their research also acknowledged that while the correlation between attitudes and behaviour was significant, it was weak. Several researchers continue to use the NEP to test the relationship between environmental attitudes and actions. For example, Vining and Ebroe's (1992) research on the characteristics of recyclers found that those who recycle had a slightly higher score on their amended NEP than those who did not recycle. However, research on strength of the relationship of attitudes on behaviour revealed that environmental attitudes have only a weak correlation to environmentally friendly activities (Eagly and Kulesa 1997).

As discussed in the introduction to this thesis, a discrepancy between attitudes and actions exists with regard to most environmental issues and this is commonly referred to as the value-action gap. The reality of the value-action gap is illustrated in wider literature examining environmental issues in Europe. Taylor (1997) notes that in the UK over the past few years the population is increasingly concerned with road building, traffic growth and air pollution, yet this has not connected with widespread acceptance to reduce car use. Heidjen (1997) observes the high levels of environmental concern registered by the public in Germany, the Netherlands, Switzerland and Britain and then the modest numbers involved in comprehensive green behaviour. According to Mason (1999) across Europe and North America this behavioural shortfall seems to question the felicity of the public's environmental attitudes, implying expressive rather than normative concern. However, as discussed in the following sections, it is not necessarily differences in environmental attitudes that impact environmental actions. As research conducted by the European Commission in 1999 reveal there was considerable uniformity in levels of concern about the environment amongst respondents across the entire EU. Yet, the same report found that German and Dutch respondents took most action to protect the environment in their daily lives (European Commission 1999). Clearly other factors, such as differences in legislation and cultural norms, play a role in influencing environmental action.

Although no previous dedicated research had been conducted in Ireland on attitudes and actions towards waste management, some research has been carried out on general

environmental attitudes and behaviour of the Irish public. Foundations of research into environmental attitudes exist (Faughan and McCabe 1993; Central Statistics Office 2000; Drury 2000; Drury 2003), but detailed data are limited. For example the *Quarterly National Household* survey produced by the Central Statistics Office in Ireland for the period 1st Quarter 1999 stated that "half a million households recycle". The report went on to state that over 580,000 households recycled some element of their household waste for the period (Central Statistics Office 2000). However, the survey failed to indicate what was being recycled, the volume of material householders recycled, how often and why they recycled.

One of the earliest studies of environmental attitudes, Faughan and McCabe (1998), performed a cross-national survey of environmental attitudes, perception and behaviour. The study compared data from Ireland, Great Britain, Italy, Germany and the Netherlands. The main finding of this research was that respondents in Ireland did not prioritise environmental protection over economic goals. In comparison to their European counterparts, more than half the respondents in Ireland agreed with the statement "people worry too much about the environment and not enough about prices and jobs" (Faughan and McCabe 1998:61). Despite expressing high levels of environmental concern, respondents in Ireland appeared to be "rather superficial when their concrete behaviours were examined" (Faughan and McCabe 1998:59). This was exemplified in the finding that very few respondents in Ireland sorted their recyclable rubbish, cut back on driving a car for environmental reasons, or paid attention to the amount of packaging on products, on a regular basis (Faughan and McCabe 1998). The study found that approximately half of the Irish respondents indicated they were willing to pay higher prices in order to protect the environment. However, they were not so willing to pay higher taxes or accept a reduction in their standard of living (Faughan and McCabe 1998).

A more recent survey, *Attitudes and Actions* (Drury Research 2000), a baseline research national study examining the public's behaviour and sentiments toward the environment in Ireland, found that general concern about the environment had increased. This research, based on a sample of 1,000 respondents from a nationwide sample, indicated that the people of Ireland claim to be concerned about the state of the environment, with many seeing it as a serious and pressing problem. However, the primary finding of the report revealed "there is a public and private morality when it comes to the environment, with

people saying one thing and doing another. While in theory, Irish people acknowledge the environment as an important issue and have a number of specific concerns both at national level and in their own area, this does not necessarily translate into environmentally-friendly behaviour on their part" (Drury Research 2000:6). The *Attitudes and Actions* survey revealed this gap between attitudes and behaviour with regard to recycling. Most respondents stated that in theory they would be willing to recycle, if recycling infrastructure like household collections or bring banks were available in their area. However, the report found that in practice, when such facilities are in place, a large percentage still do not recycle (Drury Research 2000). The report found that the highest levels of recycling were found in areas that had a household collection for recyclable goods, i.e. there was little effort required by the householder to recycle (Drury Research 2000). A follow-up survey performed by Drury Research in 2003 found that although the environmental behaviour of the Irish public has improved (for example, the numbers involved in recycling have increased), Ireland is "still a nation that has a contradictory attitude towards the environment and environmental issues" (Drury Research 2003:4). For example, the 2003 report states that one of the main concerns for people centred on waste disposal and management, yet, there has been a decrease in the numbers who support paying for a household waste collection from 70% in 1999 to 57%. The Ireland-based surveys have highlighted the wide gulf between people's environmental values and people's proactive environmental behaviour. However, these surveys are limited resources for grounding future research on attitudes and behaviour towards waste as they were conducted to examine attitudes and actions towards general environmental issues, and as such waste management as a topic was not specifically investigated. In addition, the Drury reports were based on a nationwide quantitative survey using a sample of 1,000 individuals. In an attempt to be nationally representative, these surveys provide a superficial identification of environmental issues rather than a deep investigation of the many different aspects of environmental issues. The use of quantitative research methods to quantify or measure human attitude and behaviour is also contested in the literature, with some advocates (for example Barr 2002) stating that these methods permit the examination and identification of trends in behaviour which cannot be undertaken if there is an assumption that all humans are different. Others such as Blake (1999) and Hobson (2003) feel that the use of quantitative methods in the study of human behaviour is overly deterministic.

3.6.1 The Role of Information

> This [information] is the basis for public involvement in environmental issues, for without information there can be no expectation that a particular initiative may be successful (Filho 1999: 36).

Changing environmental attitudes has been approached primarily through education and information provision. Indeed, environmental information is viewed as a vital initial part of any movement towards any form of citizen participation. However, environmental information can be contested, uncertain and highly technical. A number of studies have discussed the difficulties involved in accessing information, understanding that information and the correlation between information, attitudes and behaviour (see for example Petts 1997). Burgess *et al.* (1998) in their comparative study of environmental communication in the UK and the Netherlands, note how uncertainty and confusion about environmental problems were cited as the most prominent reasons for failing to adopt pro-environmental behaviours. On a wider scale information is linked to the issues of trust, not only in the information itself but the science underpinning the nature of the environmental problem, in the people disseminating the information, and public knowledgability (these themes are revisited later in this research). Hawthorne and Alabaster (1999) discuss how the acquisition of information can often be reliant on other variables such as social class and education.

Despite the limitations relating to information provision, it remains one of the key objectives of environmental-awareness campaigns, both national and internationally. The Government of Ireland's primary response to the findings of the previously cited research on attitudes and actions conducted in Ireland was to initiate a mass media environmental awareness campaign – *It's Easy to Make a Difference*. Research conducted by Davies (2002) critically examines this campaign which was aimed at changing attitudes and actions across a number of environmental issues by promoting the idea that individual environmental actions can have a positive effect on the wider environment. The campaign has since been followed by a similar advertising-style promotion that concentrates solely on the topic of waste. The primary focus of the *Race Against Waste* campaign is on increasing public awareness about waste and highlighting the opportunities available for individuals to reduce, reuse and recycle. However, at the present time no literature exists

which discusses the effectiveness of this recent waste campaign. Other international policy-makers have attempted to change environmental attitudes and encourage environmentally-friendly behaviour by initiating similar environmental awareness campaigns, for example *Going for Green* in the UK (for a review see Blake 1999). However, the approaches adopted in these campaigns are frequently based on the *information deficit model* (Mason 1999; Owens 2000). The underlying assumption of this model is that if accurate information about the environment is provided then this would create environmental awareness, change attitudes towards the environment and lead directly to positive environmental actions. As Davies (2002) notes, the *It's Easy to Make a Difference* campaign was based on the assumption that a lack of environmental information was the key reason for a lack of affirmative environmental action taken by Irish citizens. Through its insistence on the top-down provision of information, Davies (2002: 22) observes, the environmental campaign adopted a "simplistic view of the reason for the value-action gap". Pro-environment attitudes or information by itself does not consistently lead to pro-environment behaviours (Vining and Ebreo 1990; Pelletier *et al.* 1996) and recent literature has concentrated on the other factors that influence environmental behaviour and the processes that lie behind these behaviours.

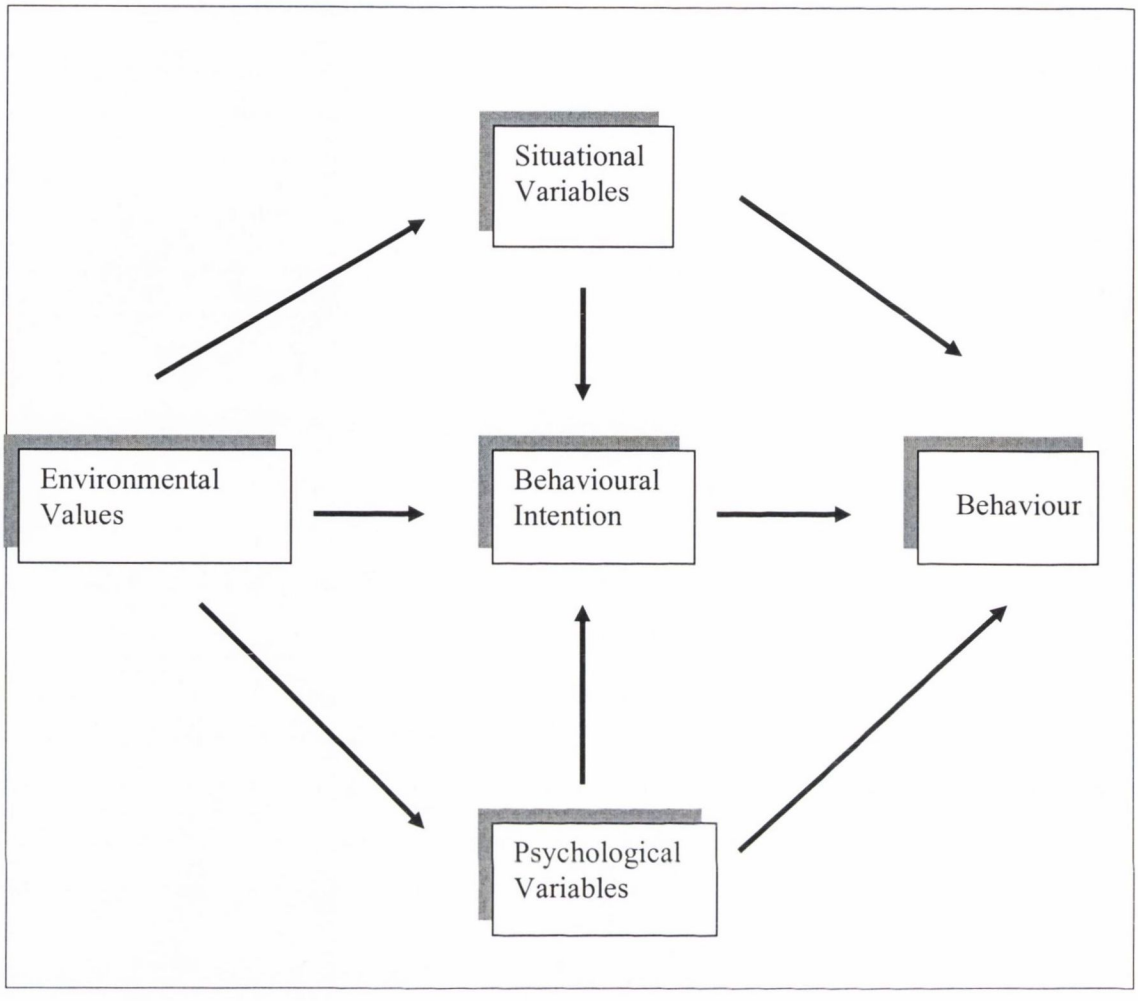
3.7 Theorising Environmental Attitudes and Behaviour: Recent Frameworks

There is a growing acknowledgment, particularly in the discipline of geography, of the influence of context in research on environmental attitudes. As researchers such as Blake (1999) acknowledge there are still practical, social or institutional constraints that may impede people from participating in pro-environmental actions, regardless of their attitudes or intentions. These include lack of finance, lack of time, and lack of facilities such as recycling. Indeed Ajzen (1991) presents an amended version of the Theory of Reasoned Action (see Section 3.4) in the form of the Theory of Planned Behaviour, which incorporates facilitating conditions such as the availability of resources. The modifications to the TRA also take account of the limited individual control over behaviour (Guagnano *et al.* 1995). Recent discussions also recognise the need for greater flexibility when studying human attitudes and behaviour and earlier models, such as the TRA, have been criticised for their minimum flexibility. In recent years, work in this area has begun to employ the utilisation of frameworks to discuss effects on human behaviour (Barr 2002). A more flexible framework which has emerged, focusing specifically on waste management but

interfacing with the previous approaches mentioned, is Barr's (2002) *Conceptual Framework of Environment Behaviour*. Barr's work, although grounded in the Theory of Reasoned Action, offers more than Fishbein and Ajzen (1975) for social scientists or geographers interested in examining environmental behaviour.

Barr asserts that three fundamental sets of variables, environmental values, situational variables and psychological variables, are likely to influence environmental and specifically waste management behaviour (see Figure 3.2). The first set of variables, environmental values, refer to a person's orientation towards nature and the environment and relate to the aforementioned NEP. Barr contends that individuals who value the environment for its intrinsic worth have been found more likely to behave in environmentally appropriate ways. Secondly, Barr links behaviour to situational factors such as an individual's personal circumstance, demographics – for example, age, gender, education, or income – access to services, awareness and experience of relevant behaviour. The final set of variables presented in the framework are psychological variables: an individual's perception about the behaviour in question and/or the social acceptance of the behaviour (Barr 2002). These include selfless motives for recycling, intrinsic and extrinsic motivations and perceptions of environmental threat, social influence and the belief that individuals have a responsibility to protect the environment; termed by Selman (1996) as *environmental citizen beliefs*.

Figure 3.2: Conceptual Framework of Environment Behaviour (adapted from Barr, 2002)

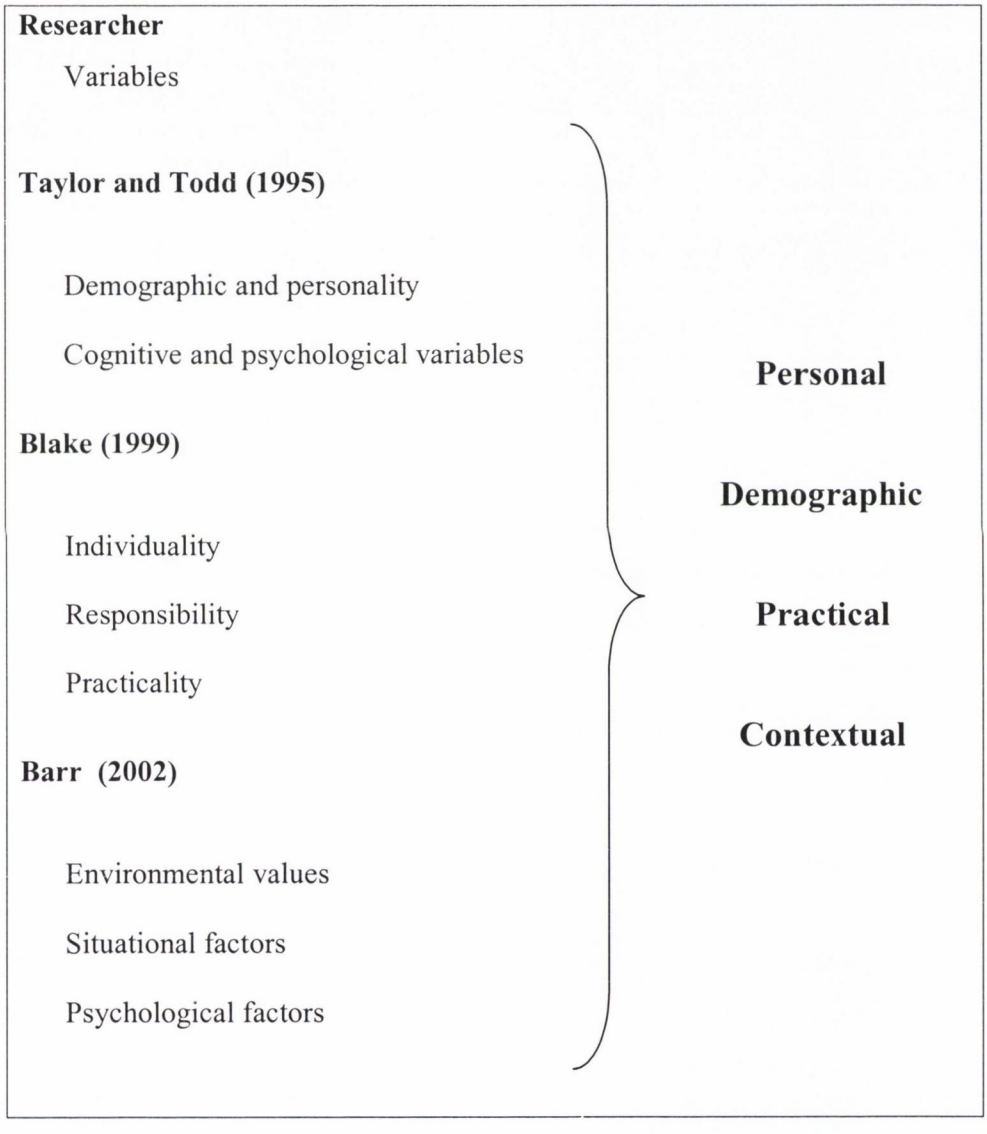


3.8 Other Variables Influencing Environmental Behaviour

In addition to Barr's classification, a review of the literature reveals that a small number of academics have attempted to classify the various variables which shape environmental behaviour into several different categories (see Figure 3.3 for examples). Some commentators organise these variables into internal and external variables. Some (Blake 1999) discuss these variables in the context of barriers to action, while others (Linden and Carlsson-Kanyama 2003) subscribe to the classification 'motivational factors'. In their research, Taylor and Todd (1995) identify 'demographic and personality', and 'cognitive and psychological variables' as the two primary sets of variables that shape environmental behaviour. These variables neglect for the most part the structural and institutional arrangements that facilitate or limit individual environmental action. Blake's (1999)

research identifies 'individuality', which includes laziness and lack of interest, 'responsibility', encompassing lack of efficacy and trust, and 'practicality', comprising lack of time, money, information and facilities. In comparison to Todd and Taylor's research, Blake's research highlights the wider complex relationship between individuals and social institutions.

Figure 3.3: Classifications of variables influencing waste management attitudes and behaviour



Expanding upon these aforementioned classifications, this thesis posits that there are four key sets of variables which shape waste management attitudes and behaviour (see Figure 3.3), and these variables are discussed in full in the following sections. While this thesis

argues that the factors which influence waste behaviour do not operate in isolation (i.e. they are all interrelated), it is necessary to discuss these factors separately for the purpose of developing a framework and analysing the results. To these ends, while reviewing the literature on the factors influencing environmental behaviour, the structure outlined in Table 3.3 will be adopted.

Table 3.3: Structure of variables identified throughout the literature

Classification	**Examples of Variables Influencing Behaviour**
Personal	Altruism, Satisfaction, Personal Experiences
Demographic	Age, Gender, Education, Income, Housing Tenure
Practical	Facilities, Convenience, Time, Space
Contextual	Social and Cultural Variables Underlying Social and Political Processes, e.g. Responsibility, Trust

These categories are flexible; they are not definitive. Some variables have the potential to be included in more than one of the above categories. Note also that the factors discussed are not exhaustive; there is a vast amount of literature from numerous disciplines examining an immense number of variables which can shape attitudes and behaviour. However, this structure serves to organise the literature into an appropriate and explanatory framework to assist in providing a better understanding of the topic and aid the analysis of the results of this research.

3.9 Personal Variables

In addition to research on personal attitudes, which for the purposes of this research have been discussed independently in section 3.4, there are a number of studies that examine the correlation between other individual personal variables and environmental behaviour. These variables include altruism, satisfaction or 'feel good' factors associated with the behaviour, personal experience, personal responsibility (environmental citizenship) and personal efficacy.

Environmental actions almost always involve collective goods and therefore tend to be affected by altruism (Guagnano *et al.* 1995). In the field of psychology, altruistic behaviour is defined as a "willingness to benefit another person when there is a choice to do otherwise" (Archer 2001:27). Schwartz's (1977) norm activation theory has provided the foundations for a collection of studies investigating such environmental actions. The Schwarz model puts forward the notion that for an individual to act altruistically he or she must be conscious of the consequences of a situation on others and direct responsibility to themselves, who by their involvement or inaction can create or prevent such a situation. In the case of recycling, Hopper and Nielsen (1991) employed the Schwartz norm activation model to their study in Denver, Colorado and found that awareness of the consequences of action and personal responsibility involved were significant predictors of recycling behaviour. A small amount of research has found that satisfaction, or feeling good about participating in an activity, plays a large role in shaping individual behaviour (De Young 1986). This research has highlighted the notion that it is more likely that individuals, who derive satisfaction from environmental actions, such as recycling, will participate in voluntary environmental activities (Barr 2002). In contrast other personal variables, which can prevent people from acting in an environmentally-friendly way, are lack of interest, laziness or the fact that individuals perceive themselves as the *not the type* of person who would participate in environmental activities such as protests or campaigning (Blake 1999).

Little empirical research has been conducted on the impact of personal experience on environmental behaviour. However, it is reasonable to accept that experience has an effect on behaviour on several levels. Firstly, the more practical experience individuals have of behaviour, the more likely they are to participate in that behaviour. For example, Taylor and Todd's (1995) research on household recycling and composting revealed that although both waste management activities were perceived as equally complex, the complexity was overlooked by those who recycled but not by those who composted. The research noted that the recycling scheme was in operation for three years longer than the composting scheme and hence participants had a wider exposure to recycling. Taylor and Todd concluded that with increased experience the negative consequences of complexity might be surmounted. Secondly, an individual's experience of an environmental crisis or incident, such as a serious discharge of pollutants, has the potential to permanently change behaviour (Lipsy 1977). Lipsy cites the example of the US public after the petrol shortage

in the early 1970s, which resulted in an increase in the level of conservationist behaviour among the majority of the population. As the previous discussion on NIMBYism considered, planning decisions as well as environmental issues can mobilise individuals and communities into action.

In addition, those who feel a personal responsibility for the environment may be more prepared to engage in pro-environmental behaviour. Since the early 1990s a body of research has emerged focusing on general discourses of individual responsibility and environmental citizenship. However, little empirical research has been conducted specifically linking waste management behaviour with an individual's sense of responsibility towards the environment. Selman's (1996) research on environmental citizenship emphasises the role of the individual as an active citizen with responsibilities to the environment. However, Selman's notion of the 'active' citizen is tied up with the previously discussed concepts of public participation. Discourses of responsibility are discussed in greater depth in the following sections. Finally, the extent to which an individual feels her/his involvement in an action can make a difference may influence an individual's participation in that activity. Personal efficacy, or a person's sense of control over the results of his/her behaviour, has been discussed by several academics (Barr 2002; Eden 1993; Harrison *et al.* 1996). Barr's (2002) research on household waste reported that an individual's belief that his/her action will have a valuable outcome has a direct effect on individual waste re-use behaviour but not on individual recycling behaviour. However, the notion of efficacy is intrinsically tied up with wider concepts of responsibility and trust. Although discourses of trust and responsibility can be construed as personal variables, literature discussing these concepts will be reviewed as contextual variables later in this chapter.

In conclusion, several of the studies reviewed in this section have attempted to model the impact of personal variables on environmental behaviour in isolation. However, following a review of the literature pertaining to the influence of personal variables on environmental behaviour it is clear that personal variables cannot be viewed in isolation as predictors of environmental behaviour; they must be viewed within a wider context of a range of variables which can impact their formation or alteration. For example, as discussed above, personal efficacy can be shaped and changed by notions of responsibility and trust. It is also evident from the literature reviewed above that very little research has been conducted

on certain personal variables, such as personal experience, as factors which could potentially influence environmental behaviour. In addition, it is important to note that the most of the research reviewed in this and the following sections (3.10, 3.11, 3.12) discuss the impact of a range of variables on general environmental behaviour. In the concluding arguments of this research it will be possible to discuss the factors which as the results reveal are important with specific regard to waste management behaviour in Galway.

3.10 Demographic Variables

During the 1970s and early 1980s, literature from the field of sociology in this area focused on the relationship between demographics and behaviour (see for example Van Liere and Dunlap 1980). The relationship between variables such as age, gender, income, education and housing tenure and recycling are well documented. However, research examining the relationship between age and environmental behaviour does not report consistent findings. Some studies contend that age has no correlation to environmental behaviour. For example, Steel's (1996) study of American public attitudes and behaviour towards the environment reported that age did not have a significant impact on behaviour. Other literature reveals conflicting results regarding the expected age of those participating in pro-environmental behaviour. It is commonly held that young people are more likely to be involved in environmental behaviours than older cohorts (Hines *et al.* 1987). This is perhaps based on the perception of young people as more educated, well read and aware of environmental issues than previous generations. As Knightsbridge-Randall remarks, "there has never been a generation more informed about environment issues than this one" (1999:82). However, Vining and Ebro (1990) examined the characteristics of recyclers in the US and concluded that individuals who recycled were often older (average age 42 years old) than individuals who did not recycle (average age 35 old). Barr's (2002) research on household waste behaviour in Exeter reported that those in higher age groups were more inclined to reduce waste than were younger age groups.

With regard to gender, some research has posited that more women than men have strong opinions on the environment and are more willing to participate in environmental activities (Stern *et al.* 1993; Van Liere and Dunlap 1980; Steel 1996). In line with this research, Barr's (2002) previously cited study concluded that women tend to have higher levels of waste reduction. One reason often purported by researchers for the differences reported in

gender and environmental behaviour is the traditional household division of labour (Steel 1996). It is well documented that women undertake the vast majority of domestic work (Buckingham-Hatfield and Matthews 1999). Environmental behaviours frequently include household activities such as purchasing products with reduced packaging (Hobson 2003) or recycling, and as a result women are deemed to be more likely to participate in these activities.

Research has also been conducted examining the relationship between other independent variables, such as income, education, housing type and tenure, and environmental behaviour. Lansansa's (1992) comparative research on curbside recycling behaviour between urban and suburban communities in the US reported that discrepancies existed in householder recycling behaviour across communities. One of the primary reasons for this discrepancy was the variation in the demographic attributes of the participants. She found that income influenced recycling behaviour and that those participants who owned their own homes tended to recycle more. Steel (1996) notes that respondents with the highest incomes and high educational attainment reported the highest levels of political participation in environmental issues. However, Vining and Ebero (1990) in their study of the characteristics of recyclers in the US conclude that income and education are not good predictors of recycling behaviour. Similarly, research conducted by Barr *et al.* (2003) revealed that variables such as occupation, income, household type and composition were not significant in predicting behaviour.

In conclusion, a large number of demographic variables have been used to predict environmental behaviour. However, due to the mixed results emerging from this research any definitive conclusions about the impact of these socio-demographic variables on environmental behaviour are difficult to reach. In addition, similar to literature regarding personal variables, research on demographic variables has, for the most part, concentrated on examining the relationship between these factors and behaviour in isolation, disregarding contextual factors. As several researchers (Mason 1999; Barr 2002) have indicated, caution must be exercised when interpreting studies like those cited above as a result of the complex interplay of environmental attitudes and behaviour. Barr cites the example of research conducted on recycling behaviour in the US by Oskamp *et al.* (1991 in Barr 2002) which reported that age had a negative relationship to recycling, when recycling resulted in an economic incentive. However, there was no evidence of such a

predictive relationship when voluntary recycling was examined. Indeed, an increasing body of literature suggests that variables such as provision of a service and accessibility are better predictors of household waste management behaviours such as recycling (Steel 1996). These and other practical variables are discussed in the next section.

3.11 Practical Variables

Literature demonstrates that a large number of practical (sometimes referred to as situational) variables have been correlated with environmental behaviour. These include provision of services, accessibility of services, availability of information, the inconvenience of performing the behaviour, role of material incentives, administrative measures, and the availability of time, space, transport and money.

With regard to recycling behaviour two practical variables, which have largely been overlooked by literature, are the provision of a kerbside recycling collection for households and the distance (or perceived distance) individuals are required to travel to use facilities (Barr 2002). Indeed, Steel (1996) observes that individuals who live near recycling centres or have a door-to-door recycling service are more likely to recycle. De Young's (1986) research found that in US populations, although general attitudes towards recycling were positive, one of the key obstacles to behaviour was inconvenience. Following this research, Guagnano *et al.* (1995) examined curbside recycling in Fairfax County in Virginia and reported that while making recycling more convenient the curbside collection decreased the perceived personal cost of recycling and increased awareness of the environmental and social outcomes of recycling. A general conclusion from the literature appears to be that few people perform environmental actions that involve changes to their lifestyle and that when little effort is required or inconvenience is relatively low, the public are more likely to participate in environmentally-friendly actions (Lipsy 1977; Blake 1999). On a similar theme researchers have linked waste management behaviours to lifestyles and consumption practices (Linden & Carlsson-Kanyama 2003). Phillips (2000:182), for example, discusses the *discourse of everyday constraints*, offering the constraints of the everyday world as reasons for not acting in a more environmentally-friendly manner. These constraints include time pressure and economic pressure, such as inability to purchase organic produce because it is more expensive than the standard produce. Another practical factor, which is unique to waste management, is the availability of storage space (Blake 1999; Barr 2002).

Barr reported that the availability of space to store recyclables was crucial when analysing behaviour. It should be noted that often individuals might *perceive* many of these practical variables as barriers to environmental behaviour and that their perceptions, of time available for example, may be linked to wider issues of the importance of the action to the individual or the knowledge the person has about that action.

The role of material incentives in shaping behaviour has given rise to extensive research (De Young 1993; Karp 1996; Price 2001). Indeed, forms of economic measures such as taxing, pricing, or charging customers, are found to be efficient in forcing people to shift to pro-environment disposal behaviour (Linden & Carlsson-Kanyama 2003). Following a review of international case studies Price (2001) reported that direct charging has had obvious results in increasing recycling and waste minimisation. However, several studies (reviewed in Guagnano *et al.* 1995:706) revealed that while incentives can play a valuable role in initiating behaviour prolonged participation requires "intrinsic motivation". In Ireland, economic measures such as pay-by-weight mechanisms for charging for waste and the levy on plastic bags have been introduced in order to change public behaviour. To date, no research has been carried out on the effectiveness of the pay-by-weight schemes. However, a recent European survey entitled *Sustainable Consumption and Production in the European Union* estimates that the introduction of the plastic bag levy has reduced consumption of plastic bags by 92% and that receipts from this levy (proceeds are directed towards an environmental fund to support waste management and broader environmental initiatives) during 2003 totalled over 12.7 million Euros (UNEP 2004). De Young (1993) classifies monetary reinforcement (e.g. deposit system for beverage cans, contests for participation in recycling schemes etc.) and monetary disincentives (e.g. consumption-based taxes) as positive and coercive motivational techniques, respectively. These techniques attempt to make behaviour more or less appealing. Other coercive techniques discussed by De Young (1993: 490) include legal penalties and the employment of physical barriers to "nonconserving behaviour" such as restricting the availability of certain consumer products. Administrative measures, from banning activities such as backyard burning to providing information on how to conduct recycling, are cited by researchers such as Linden and Carlsson-Kanyama (2003) as stimulants to behaviour.

It is apparent from the previous discussion on the role of information in changing attitudes that a body of research exists examining knowledge, information and the information

deficit model. However, another perspective, reviewed by De Young (1993), assumes that individuals are ready to act but are uncertain how to proceed or behave. The aim, therefore, is to assist the person to recognise the pro-environment behaviour as well as gaining the knowledge to carry out the behaviour. For example, participation in recycling activities requires fundamental procedural information, such as the location of recycling facilities or times of collection. However, as Macnaghten and Urry (1998:85) remark, information "is only likely to be believed in conditions of trust".

In conclusion, the importance of practical and logistical factors in influencing environmental behaviour and particularly waste management behaviour is apparent in the preceding review of the literature. As Barr (2002) discusses it would be surprising if issues of time, convenience and so on were not issues for several members of society when managing waste. However, as mentioned above, it is important to acknowledge that individuals might *perceive* many of these practical variables as barriers to environmental behaviour and that their perceptions may be linked to wider issues of the importance of the action to the individual or the knowledge the person has about that action.

Much of the literature reviewed above on practical, personal and demographic factors concentrates on investigating the variables that influence environmental behaviour in isolation. Perhaps this parallels the fact that traditionally this research has been conducted in the area of environmental psychology and has neglected to examine social context. However, as is evident from a fundamental review of several of these factors (information, perception of available time or space), many of these variables are interrelated and are connected to wider social frameworks. Much of the research reviewed above (particularly sections 3.10, 3.11) used statistical tests to measure the correlation between assumed factors such as age, gender or facility provision and environmental behaviour. Consequently many of these research studies failed to utilise a research framework which i) enabled the research participant to identify the factors that affected their own behaviour and ii) neglected to incorporate the interplay between various sets of variables. Both of these aspects are built in to the research framework of this thesis.

In recent years geographers and social scientists have added another facet to the body of research on environmental attitudes and behaviour by highlighting the role of social, cultural and political or *contextual* dynamics in shaping behaviour.

3.12 Contextual Variables

Essentially all the factors affecting behaviour are contextual. However, in order to explicate the issues involved in greater depth, aspects such as the role of social pressure, identity and national culture are discussed in addition to broader social, economic, cultural and political themes such, as risk and responsibility.

In the waste field it has been established that social influence, or pressure, is just one of several social and cultural variables which play a role in shaping participant's environmental behaviour. Research by Oskamp *et al.* (1991) on curbside recycling in California found that the behaviour of friends and neighbours around the individual was one of the most significant factors in enhancing involvement in curbside recycling schemes. Taylor and Todd (1995) in their study of recycling and composting practices decomposed these social influences into internal normative influences, such as family, and external influences, such as friends and neighbours, in an attempt to examine the correlation between social influence and behaviour. They reported that both internal and external normative influences were important in determining composting behaviour. A small amount of research has been conducted in this area on the influence of other people's misbehaviour or non-participation in an activity on environmental behaviour. Phillips (2000), in her research on the *discourse of everyday constraints,* reported that other people's inactivity was one of the reasons provided by several of her interviewees for not acting in a more environmentally-friendly manner. Following the earlier discussion on lifestyles, Linden and Carlsson-Kanyama (2003) discuss the connection between the formation of identity and lifestyles, and environmentally-friendly behaviours. The researchers state that an important aspect linked with lifestyles is the impression behaviour makes on other individuals around them. Recycling or sorting of waste are activities that are often visible to others and can "rapidly denote a green identity to other people" (Linden and Carlsson-Kanyama 2003:295). With regard to social norms, in recent years research has emerged examining the nature of environmentally-friendly actions, arguing that negative environmental behaviours are often disguised as "forms of inconspicuous consumption" (Hobson 2003: 102). Arkes and Hutzel (1997:154) discuss "the desire not to waste versus the desire for new things". The paradox is that even though people may dislike being wasteful, they will often abandon minimally used items in an effort to

procure a brand-new item. However, as Hobson (2003) argues, consumption behaviours such as shopping or transport use are types of cultural and social norms that have underlying goals (profit, convenience, safety), which often overshadow environmental concerns.

The role of national culture in shaping environmental behaviour is an issue few researchers have examined comprehensively. Gladwin *et al.* (1997) identifies national culture as an area requiring further research to determine the factors that influence sustainable behaviour, and one of the research questions emerging from their discussion is why sustainable thinking is advanced in countries such as Sweden, Denmark and Germany. One notable exception to the dearth of research in this area is Harrison *et al.*'s (1996) cross-cultural study of citizens in Nottingham in the UK and in Eindhoven in the Netherlands. This study reported that there was no simple explanation to account for the fact that the research participants in Eindhoven expressed a greater tendency to take individual responsibility for adopting environmentally friendly behaviour than the participants in Nottingham. The research concluded that, based on findings in the case studies, citizen empowerment is culturally specific. The wider concepts of responsibility and empowerment and their role in influencing behaviour will be discussed in the following section.

In recent years social scientists have highlighted the importance of embracing concepts such as trust, responsibility, justice, risk and personal agency when researching environmental behaviour (Eden 1993; Harrison *et al.* 1996; Blake 1999; Phillips 2000; Bickerstaff and Walker 2002; Hobson 2003). However, notions that behaviour is influenced by perceptions of risk, who is trusted by the public, who is responsible for environmental problems and how much power the individual has to act, are intrinsically connected and rarely discussed in isolation. Hobson's (2003) research on the *Action at Home* campaign in the UK found that individual consumption patterns were inextricably linked with debates over social and power relations. For example, the study showed how some individuals felt they could not alter their purchasing practices because they had strong feelings about "unequal consumer and producer relations, powers and responsibilities" (Hobson 2003:106). Other individuals in the study questioned how much power they as consumers had to change anything. This notion of perceived power relates back to the earlier discussion about personal efficacy.

Public perceptions of risk have been found by researchers such as Slovic (1997) to be influential in shaping public attitudes and actions towards waste. Since the early 1990s a myriad of research drawing on discourses of risk and responsibility has emerged. In earlier research studies it was inferred that the public was behaving irrationally if it did not concur with, or behave in, accordance with conclusions drawn by experts about particular risks and probabilities of risk (Macnaghten and Urry 1998). Beck's (1992) *Risk Society* has provided the foundations for a large body of research examining how risks are constructed, understood and consumed by the public (Glodblatt 1996; Slovic 1997; Macnaghten and Urry 1998). As developed nations strive to make life healthier and safer, the public have become more concerned about risk as opposed to less concerned (Slovic 1997). Consequently, in the field of waste management, infrastructure such as landfills and incinerators have been stigmatised and, as illustrated in the previous chapters in the case of Ireland, finding locations, or appropriate technologies for the disposal of waste, has become increasingly complex and contested. Thus, the crucial role of social values in risk perception and acceptance has become increasingly evident (Slovic 1997). Beck's *politics of risk* is essentially a politics of expertise, knowledge, and counter expertise, and science is placed at the centre of the politics of the risk society (Goldblatt 1996). However, commentators, such as Irwin (2001), Seippel (2002), Lash and Urry, (1994) note that Beck's approach largely neglects the cultural embeddedness of social interaction; he does not necessarily provide any direct insight into the way people 'make sense' of environmental issues within the constraints of everyday life. Beck implies that once environmental issues are made known, people simply respond to them (Lash and Urry 1994). Hence, Beck is charged with operating within a "crude realistic assumption of environmental problems as existing apart from human interpretations and constructions" (Irwin 2001:94). Acknowledging that risk is not the only issues of concern to citizens, academics such as Irwin (2001) and Seippel (2002) observe that research is required considering the relationship between environmental and other non-environmental concerns within everyday life.

Bickerstaff and Walker (2002) in their research on risk, responsibility and blame in air-pollution discourses, discuss how the majority of the individuals participating in their UK study exhibited an "inconsistent and seemingly contradictory relationship with notions of responsibility" (2002:2180). Bickerstaff and Walker present two primary tenets of

responsibility; first that it is based on recognising an actor's role as a cause or agent, the person's ability in acting, or knowledge of the consequences of the action. Secondly, there is the sense of responsibility as an obligation or duty. While recognising the air pollution problem and to some extent, individual responsibility, the majority of participants took little action to prevent the problem. In their examination of this discrepancy Bickerstaff and Walker discuss the different ways individuals allocate or transfer responsibility for the problem and identify the following: transferring responsibility to other polluters, for example, industry; deflecting to government and legislation, such as the lack of government intervention on polluter activities; viewing government as a challenge to individualisation – approximately one-third of interviewees felt that the government should be responsible for dealing with such problems and criticised the redirection of responsibility towards the individual; transferring responsibility to technological and educational institutions – indirect responsibility was focused towards these institutions to develop technical solutions for the problem and educate children to improve behaviour in the future, respectively; finally a small number of interviewees distanced themselves from responsibility by directing responsibility towards society in general and placed the emphasis on "social rather than individual culpability" (Bickerstaff and Walker 2002:2186). As with most environmental issues, the distribution of responsibility is a significant factor in the management of waste. Specifically, producer responsibility (the idea that waste generators should pay the full cost of the management of the waste they produce) is one key area of waste management in which EU and Irish national policy-makers have focused their attention in recent times (EPA 2004).

As referred to in Section 3.9 if individuals do not feel that they are responsible for waste, then this may negatively influence their participation in waste management activities. However, as stated above, even people who do accept responsibility for their waste, and believe that their actions will make a difference, may still fail to participate in waste management activities. This context, as Blake (1999) discusses, often reflects a lack of trust in the structures that affect potential action. However, an incongruity, alluded to above and revealed in other literature, is that often even though government institutions are trusted least, they are regularly perceived as the ones responsible for causing environmental problems and subsequently responsible for solving them (Blake 1999; Burgess *et al.* 1998; Macnaghton and Jacobs 1997). Further literature examining the relations between the public and authority reveal that such relations can influence

environmental behaviour. Research conducted by Pelletier *et al.* (1996) links an individual's satisfaction with local environmental conditions and government policies with environmentally-friendly behaviour and activism. In particular the authors noted that high levels of dissatisfaction with government environmental programmes and dissatisfaction with environmental conditions were potential determinants of environmentally-friendly behaviour and activism.

Awareness campaigns such as *It's Easy to Make a Difference* are indicative of attempts to promote individual responsibility and environmental citizenship. However, there is a growing recognition that social practices are the core of both environmental problems and the solution to these problems. Furthermore, if individuals do not trust the arguments presented to them, or are unconvinced of the need for action, have different concerns or do not have the power to act, no progress will be made (Holdgate 1996). Many of these studies incorporating discussion of broader social and political contexts focus on the problems of existing communication procedures and practices, such as the ineffectiveness of awareness campaigns and increasing work on public participation forums. It is interesting to note that the move towards deliberative and more inclusive forms of public participation, discussed in the early part of this chapter, has paralleled the "widely perceived need for a new political culture" (Owens 2000:1146).

From a review of the literature it is clear that there are incompatibilities between each of the different research positions taken in Sections 3.9, 3.10, 3.11, 3.12. For example, those who advocate the importance of demographic factors (as outlined in Section 3.10) felt that contextual factors have little or no role to play in influencing environmental behaviour. Equally those researching the contextual aspects of environmental behaviour in isolation (as discussed in this section) are subject to as much criticism as the previously cited literature which concluded that physiological or cognitive variables were the prime reasons for behaviour. The following section reflects upon the challenges and opportunities that the different perspectives identified throughout the literature review bring to bear on the empirical research conducted for this thesis.

3.13 Reflections on the Challenges and Opportunities of Investigating Environmental Attitudes and Behaviour

In the study of environmental attitudes and values, various theoretical approaches have been used. However, the review of literature demonstrated that it is not possible to conclusively deduce that attitudes are a strong predictor of behaviour. One of the key criticisms directed towards traditional models/frameworks for examining attitudes and behaviour and the ensuing research conducted (much of it reviewed in the previous chapter), is that they are linear in nature. They tend to frame behaviour in what Hobson (2003:103) terms a 'deterministic fashion': if one has the *correct* attitudes, and the *optimum* practical facilities, then *correct* behaviour follows. This also leads to the notion that one can construct a formula to predict and consequently change human behaviour. In common with Fishbein and Ajzen's TRA, Dunlap and Van Liere's research on the NEP assumes that when persons exuded pro-environmental attitudes they were more likely to engage in environmentally-friendly behaviour. Although approaches like the TRA and the NEP have been used, to an extent, to explore the complex relationships between different people's beliefs, attitudes and actions, they often ignore structural and institutional arrangements that enable or constrain individual environmental action. This approach is derived from what Macnaghten and Urry (1998:88) term the "doctrine of methodological individualism".

Much of the early research into environmental attitudes and behaviour is based on a larger rational view of human agency; a notion of an abstract individual whereby attitudes are largely assumed as independent of social context. There is a tendency, particularly in research from the 1970s, to underestimate the influence of situational factors and overestimate the role of personality factors. This bias, referred to in the social psychology literature as *fundamental attribution error*, is apparent in the findings of many modern social studies (Fincham and Hewstone 2001). As Manstead and Semin (2001) discuss, when considered independently few variables have the ability to elicit predictable social behaviour. Therefore, the cultural embeddedness of social events is often overlooked by the measures employed in many of these models. Hence, from the early 1990s, variables which were perceived as being external to the individual, assumed a more prominent role in environmental behaviour research. As outlined above several models of environmental behaviour began to include practical or situational variables. For example, Eagly and

Kulesa (1997) note that increased accessibility makes an attitude more likely to influence action regardless of the specificity of the attitude. The models reviewed at the beginning of this chapter all share common roots in a rationalistic model where reasoned human agency is viewed as the key determinant of all action.

Furthermore, human attitudes are treated as stable discrete entities which are suitable for investigation by quantitative methods. Quantitative research methods necessitate the decontextualising of social phenomena. However, as Blake observes, "people do not have a fixed, rational and ready-made set of values ... rather people's values are negotiated, transitory and sometimes contradictory" (1999:265). This claim is supported by Macnaghten and Urry who observe that the public, in many quantitative studies, are treated as "discrete independent beings whose actions are largely isolated from the turbulent, complex, often contradictory practices and discourses which criss-cross contemporary societies" (1998:88). Under this particular framework there is a belief that not only do environmental risks exist, independent of social practices and beliefs, they can also be quantified and measured appropriately (Macnaghten and Urry 1998). As previously discussed advocates of quantitative studies into human attitudes and actions, such as Barr 2002, argue that these methods permit the examination and identification of trends in behaviour which cannot be undertaken if there is an assumption that all humans are different. The following chapter revisits the quantitative versus qualitative methods debate and discusses in full the methods employed for the current research project.

Much of the literature, reviewed above, concentrates on investigating the variables that influence environmental behaviour in isolation. However, relatively little research has been undertaken relating individual waste management behaviour to broader social, cultural and political debates. The current research endeavours specifically to address this gap. The issues identified throughout this literature review will be counterpoised, later in this thesis, with quantitative and qualitative research investigating the rationale behind individuals' attitudes and behaviours towards waste management.

As discussed above incompatibilities between each of the different research positions reviewed within the four classifications of variables are evident. Amalgamating such contrasting research positions is a challenging task which requires a research approach which will incorporate, identify and explore the extensive variety of factors which

influence waste management behaviour. The application of a grounded theory approach (as detailed in the following section) is proffered here as one avenue for identifying and exploring the wide range of variables which influence attitudes and behaviour towards waste management.

3.13.1 A 'Grounded Theory' Approach to Researching Public Attitudes and Behaviour Towards Waste

An examination of the traditional theoretical approaches to studying attitudes and behaviour reveal important considerations for empirically researching public attitudes and actions to waste management. As discussed in both the review of policy and literature, government-driven environmental strategies focus on changing behaviour and the promotion of individual responsibility for the impacts of individual actions. This approach ignores the social context of behaviour and responsibility and downplays the "complex social processes through which communications are interpreted and evaluated" (Bickerstaff and Walker 2002:2176). However, it is clear from emerging literature that it is necessary to look beyond the superficial reasons provided for social and political behaviour and to expose the contextual factors that contribute to the development of different forms of reasoning (Kemp 1990; Bickerstaff and Walker 2002). However, researching the social and political aspects of environmental behaviour in isolation could be construed as equally artificial and open to as much criticism as the previously cited literature which concluded that physiological or cognitive variables were the prime reasons for behaviour. Empirical research is required which will facilitate an examination of the wide variety of variables that influence waste management behaviour. This thesis aims to develop an understanding of the relations between social institutions and individuals in addition to determining the variables such as personal, demographic, and practical, which shape waste management attitudes and behaviour.

With the acknowledgment that society is constantly changing, this research employed inductive reasoning; the research comes before the theory and theoretical propositions are generated from the research data (Kitchen and Tate 2000). In Ireland waste management is constantly evolving and public waste management behaviour is in a state of flux. Hence, the application of *grounded theory*, with its rejection of the deductive approach to theory development, instead highlighting "the need to use induction to generate theories of short

duration and limited (geographical) validity" (Hoggart *et al.* 2002:17), was deemed appropriate for this research. Grounded theory is a qualitative research method used to examine human interaction and social processes. As grounded theory is utilised to understand and explore the complexity and variability of phenomena and human action, it has been used to investigate a broad range of problem areas and practice settings (Strauss and Corbin 1990). For example, in the field of psychology Stevens (2000) used grounded theory for a research study on gay male identity development because first, the population sample from which to choose participants was small and second, little previous empirical research had been conducted on the variables associated with gay male identity.

By facilitating the generation of theory from the collected data, a grounded theory approach is extremely appropriate for researching a policy-driven subject such as waste management. In contrast to other hypothesis-testing research on environmental behaviour, such as Barr's (2002) work, discussed above, which aimed to study household waste management behaviour by testing and developing Fishbein and Ajzen's (1975) TRA, the objective of the current research is to uncover the theories which account for, and provide an understanding of, public attitudes and behaviour towards waste. Consequently, theories emerge from the empirical results (discussed in Chapters 5-8).

> It is a capital mistake to theorise before one has data. Insensibly one begins to twist facts to suit theories instead of theories to suit facts ... (Sir Arthur Conan Doyle – *The Adventures of Sherlock Holmes: A Scandal in Bohemia*).

3.14 Conclusion

From the preceding review of literature, it is possible to make a number of conclusions pertaining to the current research. To date, research on waste management in Ireland is narrow in focus. With the notable exception of Davies' (2003) discussion of the public's role in waste management planning, the majority of literature on waste management in the country has been derived from a top-down perspective, focusing on the formation and implementation of EU and national waste policies and the promotion of technical solutions to waste management problems. With regard to the public's involvement in waste management planning, the small amount of research that has been conducted appears

limited to a surface discussion about opposition to waste management infrastructure and assumptions about a reactive NIMBY position amongst the public. However, as previously reviewed, researchers from the US and the UK are increasingly questioning the concept of NIMBY and have recognised the need to move away from simplistic assumptions of NIMBYism towards a more thorough understanding of public attitudes towards waste. Overall, as the chapter identifies, the dearth of research investigating the public and waste management policy is noticeably absent in light of emphasis on public participation and, more recently, deliberation as key elements of sustainability strategies. By providing a more nuanced, bottom-up, understanding of public attitudes towards waste, waste facilities and waste strategies, the current project attempts to address this dearth of research.

The chapter focused on international literature examining environmental attitudes and behaviour and acknowledged that while research on environmental behaviours has increased significantly during the past three decades, relatively little is known about the variables that influence general waste management activities (including participation in waste policy), or the relationship between an individual's attitudes and behaviour. Most of the research specifically examining attitudes and behaviour on waste, to date, has concentrated on recycling behaviour (Vining and Ebro 1990; Lansansa 1992) and has, in general, ignored other forms of waste management, for example prevention or re-use of waste. This research examines attitudes and behaviour towards all forms of waste management, recycling, re-use, prevention, minimisation, and disposal.

The majority of the early research conducted on environmental behaviour asserts that attitudes are the most important determinants of environmental behaviour. However, the chapter proceeded to discuss contemporary research on the value-action gap – the discrepancy between attitudes and actions. The review identified the existence of this value-action gap in research performed on Irish environmental attitudes and actions. In Ireland to date, no research has been conducted examining attitudes and behaviour and the value-action gap specifically with regard to waste management. The role of information as a catalyst to attitude change was then discussed in addition to the Irish government's attempts to alter environmental attitudes by initiating mass media environmental awareness campaigns. The review critiqued the campaigns and the underlying linear assumption that information provision will create environmental awareness and change attitudes, which will translate into positive environmental behaviour. Deriving from the research of Taylor

and Todd (1995), Blake (1999), and Barr (2002) the remainder of the chapter reviewed four key sets of variables (personal, demographic, practical and contextual), which, it is posited, shape environmental attitudes and behaviour. With regard to personal variables the chapter examined the correlation between environmental behaviour and individual variables such as altruism, satisfaction, personal experience, personal responsibility and personal efficacy. This thesis explores the role that personal variables play in shaping waste management attitudes and behaviours. In addition, it examines the influence of many of the other variables identified throughout the literature on waste management attitudes and actions. These include demographic variables such as age, gender, income, housing tenure; practical variables such as provision of service, accessibility of services, availability of information, the inconvenience of performing the behaviour, the role of material incentives, administrative measures, the availability of time, space, transport and money; and contextual variables such as the role of social pressure, identity and consumerism as well as discourses of risk, trust and responsibility.

The theoretical approaches outlined in Section 3.4 are based on a rationalistic model and as a result they fail to account fully for variance in the attitude-behaviour relationship. As this research has previously posited, waste management behaviour is culturally embedded and difficulties arise when behaviour in a social setting, such as waste management behaviour, is regarded exclusively as a product of individual internal processes. The current research recognises the "play-off" between structure and agency; individuals make decisions – however these decisions are framed within broader societal and political structures (Kitchen and Tate 2000:26). The proposal put forward contends that it is the interaction of personal and practical variables alongside broader social and political arrangements that influences waste management behaviour.

In addition this research asserts that it is critical to approach the issue of waste management from the perspective of the public themselves. Indeed, in the context of household waste management the householder is the expert. As Irwin (2001) discusses, rather than treating public responses to environmental issues as if it was a case of cause producing an effect, it is necessary to explore the relationship between public groups and environmental issues in an open and thorough manner. In the same vein the links between waste management and the other non-environmentally friendly concerns within everyday life (such as time) need to be acknowledged. By investigating the social and cultural

dimensions that shape waste management attitudes and behaviour from the perspective of the ordinary householder, this research is situated in the current movement of critical social science which aims, as Hobson adequately surmises, "to examine environmental issues from the voices of 'non-expert' individuals" (for examples Eden 1993; Harrison *et al.* 1996; Macnaughten and Jacobs 1997; Blake 1999; Burningham 2000; Bickerstaff and Walker 2002; Hobson 2003). Drawing from a variety of disciplines such as geography, sociology, psychology and politics, this research utilises a *grounded theory* approach to examine public attitudes and behaviour towards waste management. Many of the social and cultural dimensions that may shape waste management behaviour may not become evident unless they are clearly built into the methodological design of the research (Macnaghten and Urry 1998). As a result the nature and implementation of methodologies adopted to empirically examine attitudes and actions are critical and these will be discussed in full in the following chapter.

Chapter 4: Considering the Research Process – Outline of the Methodology

4.1 Introduction

This chapter outlines the methods employed to achieve the research objectives and examines the quandaries, limitations and ethical decisions involved in conducting this research project. In the current waste management climate, as outlined in the review of waste policy in Chapter 2, the householder has an essential part to play in the management of waste. For example, the onus appears to be on householders to separate waste and recycle (where available), to pay waste charges and make informed decisions about the products and packaging they purchase on a daily and weekly basis. Public opinions in relation to the challenges and issues they face regarding household waste management are central to this research. Therefore a methodology which enables the public to identify the barriers to household waste management and possible methods of overcoming these barriers is imperative. This research adopted both quantitative and qualitative methods within a case study approach. The following sections detail the rationale for using such research methods and examine some of the issues that arose from the methodologies employed.

4.1.1 The Case Study Approach

As identified in the theoretical and literature review (Chapter 3), behaviour is potentially affected by a range of variables. Emerging from this preceding review of academic literature, this research project aims to examine the role of many variables including contextual factors in explaining behaviour. A case study approach was considered appropriate as it facilitates the examination of complex social phenomena and enables the researcher to study a phenomenon within a situated context (Kitchen and Tate 2000). Yin discusses how the case study is used "in many situations to contribute to our knowledge of individual, group, organisational, social, political, and related phenomena" (2003:1).

4.1.2 Mixed Methods Approach: Quantitative and Qualitative

Conducting research on public attitudes and behaviour is a complex task. As outlined in Chapter 4, early approaches in psychology to researching attitudes and behaviour have utilised quantitative approaches to measure these variables. The merits of quantitative research are widely documented (see Bryman 2001; Hall and Hall 1996; Neuman 2000). Quantitative data are generally structured and consist of empirical facts or numbers that can be quantified and analysed using statistical techniques without much difficulty (Kitchen and Tate 2000). Research, in the form of a questionnaire survey for example, has the ability to produce a large quantity of descriptive information over a range of different subject areas, which supplies the results with a measure of the representativeness.

However, the movement towards a more contextual study of environmental attitudes and behaviours, identified in the previous chapter, has led to a shift from quantitative polling of individuals' attitudes to a qualitative understanding of the rationale behind environmental attitudes and actions. It has been established in the previous chapter that human attitudes are not necessarily fixed or stable entities, and that individuals do not have a static, rational set of values. Instead, as the literature on the value action gap has revealed (see Blake 1999), their values are negotiated, transitory and, sometimes, contradictory. The closed format of most questionnaire surveys can force respondents to give simplistic answers to complex questions and can often be frustrating for respondents when their preferred answer is not a choice offered in the survey (Neuman 2000). Therefore, while questionnaires are constructive for identifying trends and the existence of a problem, they are less beneficial for identifying the reasoning behind statements and are not suitable for examining in-depth personal feelings and opinions on environmental issues. In contrast, the use of qualitative methods to analyse experiences and attitudes has been advocated by many different academics (Seale 1999, Kitchen and Tate 2000). Several of the most recent studies reviewed in the literature in Chapter 3 all utilised qualitative techniques, for example, Burgess *et al.*'s (1998) research on environmental communication and citizenship and Eden's (1993) research on environmental responsibility. When utilising qualitative methods, respondents have an opportunity to discuss specific topics in depth and to expand upon their responses. The critics of such research argue that qualitative data are not representative and that little statistical generalisation can be made on the basis of results.

However, as Yin (2003) observes, the objective of qualitative research is to expand and develop theoretical perspectives, or allow 'analytic generalisation' (2003:10).

There is a variety of studies (for example Seale 1999; Bryman and Cramer 2001) which advocate the combination of methodological approaches in a mixed methods approach. Central to this is the idea that quantitative research facilitates qualitative research and vice versa. As Seale (1999) points out, well-defined quantitative data can increase the credibility of claims made by qualitative researchers and quantitative analysis, when used in conjunction with qualitative research, can assist with the problem of generality. This research adopted a mixed-method approach; questionnaires were used in conjunction with interviews, focus groups and a household waste minimisation exercise. As a result, the strengths of the different methods complement each other, creating a body of empirical data on attitudes and behaviour towards waste management that provides both a quantitative and qualitative understanding of the diversity of public reasoning and justifications for action or inaction with regard to waste.

Quantitative baseline information was essential because, as discussed in Chapter 3, no prior research had been carried out on the attitudes and actions of Irish citizens towards waste. The questionnaire survey established the base levels of a variety of indicators of environmental and waste management awareness, as well as attitudes and behaviour in the case study locations. In addition, in accordance with the goals of sustainable development, the face-to-face format of the questionnaire and use of visual aids (comprehensively detailed in the following sections) meant that the survey did not exclude individuals traditionally marginalised from conventional written questionnaire surveys, for example persons who are functionally illiterate.

The questionnaire survey was followed-up by the most commonly used qualitative method – interviews (Kitchen and Tate 2000). Research extolling the virtues and various forms of interviewing is well documented (Seale 1999; Neuman 2000). In comparison to questionnaires, which are useful for quantifying general information, interviews allow a thorough investigation of attitudes, beliefs and opinions. In addition, they are more informal in nature, when compared to questionnaires, and cannot be self-administered (Kitchen and Tate 2000). Interviews were undertaken in this research to investigate in greater depth a range of issues that emerged from the questionnaire, including attitudes to

waste management, household waste management behaviour and potential reasons for the value-action gap. Interviews can be utilised to gain an insight into the meaning and reasons for certain actions (Hoggart *et al.* 2002). As Bryman and Cramer (2001) discuss, this qualitative research method permits an explanation of experiences and events in their complexity including their potential inconsistencies and contradictions. The use of interviews enables participants to discuss their waste management attitudes and activities in their own way; in their own language and in their own time.

A second aspect of the qualitative research examines the attitudes and behaviour of children in relation to waste. As adults conducted the questionnaires and interviews, children's perspectives were incorporated in an effort to ensure the research encompassed a broad range of age groups. Almost one-third of the population of Ireland is under 19 years old while 21 per cent of the Irish population is aged less than 14 years (Central Statistics Office 2002). Other studies (Freeman 1999; Hart 1997) have identified young people as catalysts for improved behaviour and stewards of global environmental futures. There is also an increasing body of research that focuses on the general attitudes and actions of children (Bell 2004; Knightsbridge-Randall 1999). However, with the exception of the limited environmental-awareness initiatives identified in the introductory chapter, the role of children in the management of waste has tended to be overlooked. After examining the various research methods for eliciting children's attitudes, the methodology deemed most appropriate and consequently adopted was focus group discussions. Focus groups, or group interview, are increasingly being adopted and developed as a powerful technique in policy-making and academic research (Davies 1999c; Kitzinger and Barbour 1999). Krueger (1994) notes that this tool differs from other research methods in that it facilitates group interaction and a deeper insight into the reasoning behind opinions. In comparison to individual interviews, focus group discussions facilitate a development and clarification of a respondent's answers by other participants within the group and also encourage the stimulation of new ideas (Breakwell 1990; Lewis 1992). Over the past decade focus groups have been used as a vehicle for discussions with children in various contexts: social work, educational assessment and legal areas (Lewis 1992). In this research the objective of the group discussions was to encourage children to collectively discuss their understanding of waste and their involvement in waste management activities, such as recycling. As Hoppe *et al.* (1995) and Krueger (1994) have argued the focus group process allows children to participate in discussions, in this case about waste, in a non-threatening environment. The

potential drawbacks of focus groups, the possibility of peer pressure influencing responses (Lewis 1992) and an inability to collect statistically significant results, are acknowledged. However, the primary objective of the focus groups was not to provide statistically significant conclusions about children's attitudes towards waste; rather it was to gain an insight into children's perspective of waste and their role in managing it.

To create a fuller picture of waste management attitudes and behaviour the final stage of research incorporates *action research* in the form of a household waste management exercise. Action research, as defined by Kitchen and Tate, "aims to create new knowledge through the solving of practical problems" (2000: 225). This type of research, rarely employed in the discipline of geography, was embarked upon to investigate the practical applicability of different ways of managing waste on a day-to-day basis. Over a four-week period householders were provided with appropriate equipment and information to assist them in managing their waste in an environmentally-friendly manner and were asked to evaluate the advantages and disadvantages of managing waste in such a way. In essence the objective of the household waste minimisation exercise was to attempt to change household waste management practices while at the same time producing information for the research about such practices.

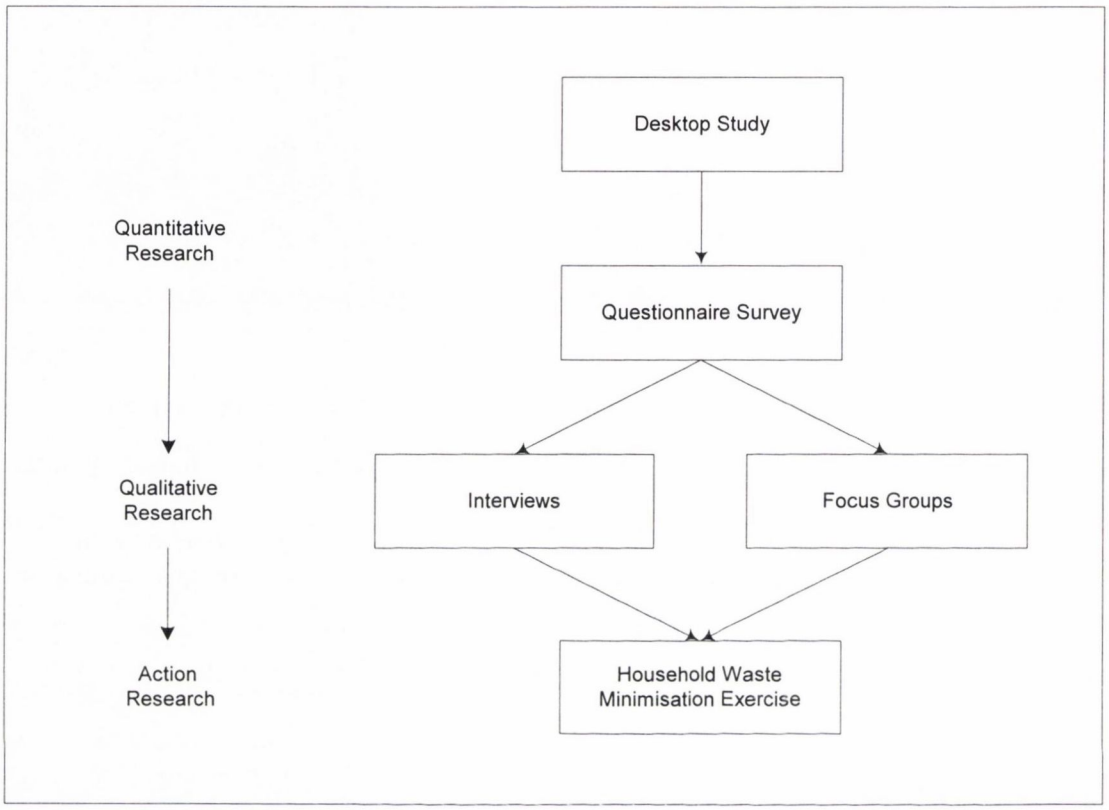
4.2 Conducting the Research Fieldwork

The complete research project is composed of five different stages:

- Desktop study
- Questionnaire survey
- Interviews
- Focus group discussions
- Household waste minimisation exercise

The outline in Figure 4.1 depicts the framework of the methodology and highlights how the data gleaned from the quantitative phase of the research project provided the foundation for the latter stages of the research, the qualitative and action research. The following sections discuss each stage in detail.

Figure 4.1: Research fieldwork



4.2.1 Desktop Study and Selection of Case Study Region

The first step of the process was the desktop study of national policy and regional waste management plans. The purpose of the desk-based study was to provide fundamental information about previous, current, and future developments in the waste management field in each local authority. The plans were examined in terms of current and proposed waste minimisation, collection, recycling and disposal policies and options. For example, the existence of waste management infrastructure, such as recycling schemes, bottle bank facilities and landfill, and proposed improvements to this infrastructure were examined for each local authority.

The study revealed the different approaches to waste management employed by various local authorities across Ireland and this information was used as the basis for the selection of the case study regions for this research. Two local authorities were chosen as case study regions. After examining each local authority in light of diverse variables such as waste disposal (local authorities with landfills or proposals for waste incinerators), or demographics (local authorities with predominantly urban or predominantly rural populations), Galway City Council and Galway County Council were selected as regions to research. A full overview of waste policy in Galway and the selection of these two local authorities were discussed in full in Chapter 2.

4.2.2 The Quantitative Approach – Questionnaires

The aim of the questionnaire was to establish baseline information about public attitudes and actions towards waste. Data derived from this questionnaire survey formed the basis of the subsequent qualitative stages of research. The topics contained within the questionnaire (see Appendix I) covered attitudes and behaviour towards waste and the environment in general. These topics were derived from previous international environmental attitude/behaviour studies (Steel 1996, Blake and Carter 1997, Davies 1999b).

The questionnaire sought to

i) establish levels of environmental awareness and behaviour
ii) identify the attitudes and behaviour of the householder towards waste management
iii) investigate the barriers and opportunities to improved household waste management behaviour
iv) provide data for statistical analysis and comparison
v) permit, through the inclusion of open-ended questions, for more detailed and individual responses
vi) identify further issues for intensive research.

The questionnaire was constructed taking care to minimise bias and maximise response rates as outlined in numerous texts (Hall and Hall 1996; Black 1999; Neuman 2000; Bryman 2001). The initial questions were straightforward and were framed to encourage the participants to respond without too much difficulty. The questionnaire consisted of a

mixture of both open and closed questions to provide a change of pace for the respondent and allow follow-up probes to closed-ended questions which can provide a truncated insight into the respondent's reasoning. The main advantages of closed-ended questions are that the respondent can simply choose one response from a list of possible answers, enabling a large number of questions to be answered in a short space of time. In addition, data input and analysis of closed-ended questions takes less time to complete than inputting and analysing open-ended questions. However, closed-ended questions are quite rigid and respondents do not have the potential to elaborate or explain their answers in any detail. In contrast, open-ended questions are easier to insert in a questionnaire, they permit longer, more personal responses to questions, and they avoid suggesting potential answers to the respondent (Neuman 2000; Kitchen and Tate 2000). However, it is more time-consuming to code and analyse open-ended questions. In addition, even the inclusion of open-ended questions does not necessarily mean that respondents will fill in elaborate answers (Hoggart *et al.* 2002).

The questionnaire survey used in this research required respondents to rate themselves as managers of waste and to report on their own waste management behaviour. From a methodological perspective there is some discussion, particularly within the field of applied psychology (Rutherford 1998) that the closed format of a questionnaire constructed by the researcher allows for misinterpretations of questions between researcher and participant. In the case of this research a householder may rate himself or herself as an excellent manager of waste because he or she puts rubbish in a bin and places it out for collection. This perspective may differ notably from the researcher's view which might involve regular recycling and composting of waste. Although every effort was made to minimise such misunderstandings through a pilot study, they are difficult to exclude completely. However, respondents' understandings of what it means to be a *good* and an *excellent* manager of waste were clarified during the later, qualitative stage of the research and the various definitions are discussed in the following chapters outlining the findings of the research.

A variety of questions are also included in the last section of the survey to establish the socio-economic profile of respondents. The questionnaire was six pages in length, which is longer than Black's (1999) suggested maximum of four pages. Black, however, adds that the more questions in a survey the higher the reliability. The questionnaire survey was

conducted face to face and, as Black concedes, a questionnaire can be longer than average when a researcher is present, administering the questionnaire. This face-to-face arrangement was chosen in order to maximise participation rates. Face-to-face contact results in high responses relative to the other approaches, such as mail or telephone surveys (Neuman 2000). A face-to-face meeting with the respondent also meant that the researcher could describe the research to the householder, and explain any confusing issues emerging from the questionnaire. This method of conducting the survey was most inclusive as householders who were unable to read could also participate, due to the fact that questions were read to them. A show card with pictures was handed to the respondent during the survey. The respondents were asked to identify their top five concerns from the laminated sheet of colourful images. This activity broke the monotony of constant straightforward questions and helped to maintain their interest in the discussion.

The questionnaire was piloted on two-hundred and fifty householders in the Fingal region an area close in proximity to the researcher's college and home[3]. Depending on the respondent the duration of the questionnaire survey lasted between fifteen and thirty minutes. Following the pilot survey the householders were asked if all the questions and phrases were clear, and the researcher re-read some of the answers back to the respondent in an effort to ensure that they had interpreted the questions correctly. The feedback from the pilot survey resulted in minor changes to some questions. For example, the phrase 'thermal treatment' was replaced with 'incineration'.

One of the primary research aims was to examine the role of context and social setting. As discussed in the previous chapter, these factors have often been neglected in favour of personal variables such as values and beliefs. From the information gleaned from the desk-top study and discussions with the relevant local authorities, specific areas within the case study regions were selected to research. The survey was conducted in nine separate locations across Galway County (see Figures 4.2 and 4.3), in a variety of communities of contrasting social and economic characteristics and in communities where environmental concerns have arisen. The sample size for each location is directly proportional to the population of the location as reported in the most recent national census (Central Statistics Office 2002); see Table 4.1. The electoral register for the two case study locations was

[3] Each stage of the research, the questionnaire survey, interviews, focus groups and household waste minimisation exercise, was piloted in the Fingal region.

obtained and householders were randomly selected from them. In total five hundred questionnaires were conducted face-to-face in the respondents' homes.

Table 4.1: Sampling in the case study regions

Location	Sample
Ballinasloe	124
Roundstone	9
Renvyle } West Connemara	27
Cleggan	6
Aran Islands	27
Gort	57
Renmore	52
Ballybaan	72
Shantallow	62
Salthill	44
Knocknacarra	20
Total	**500**

Within Galway County Council's jurisdiction research was undertaken in the following areas:

Ballinasloe – a large town in east Galway with a mix of housing types: social housing estates, privately rented apartments and privately owned semi-detached and detached homes. Many respondents from this location are involved in work associated with the hospitals in the town. The area is historically a controversial waste area as the only operating landfill for the county is located less than two kilometres from Ballinasloe town.

West Connemara – the questionnaire was conducted in the villages and surrounding areas of Roundstone, Renvyle and Cleggan. One-off privately owned housing dominates in this low population region, comprising the peninsulas in the northwest of county Galway.

Aran Islands – comprises three islands off the west coast of Galway. They recently experienced the closure of the only landfill for the islands; it is a low population region with a predominance of one-off housing.

Gort – located in south Galway, this town has developed as a commuter town for professionals working in Galway City and Ennis town and has experienced growth in the form of many new housing estates. Waste collection and disposal in Gort and its

surrounding area is divided between private waste collection companies and residents' personal disposal of waste.

Within Galway City Council five urban areas were chosen and they included areas with a mixture of housing form and tenure, and a variation in the provision of waste management facilities:

Renmore – a mature neighbourhood, dominated by semi-detached owner-occupied housing. This area has an ageing population, which prides itself on its sense of community. Galway City Council used Renmore as the pilot area for their three-bin waste collection system.

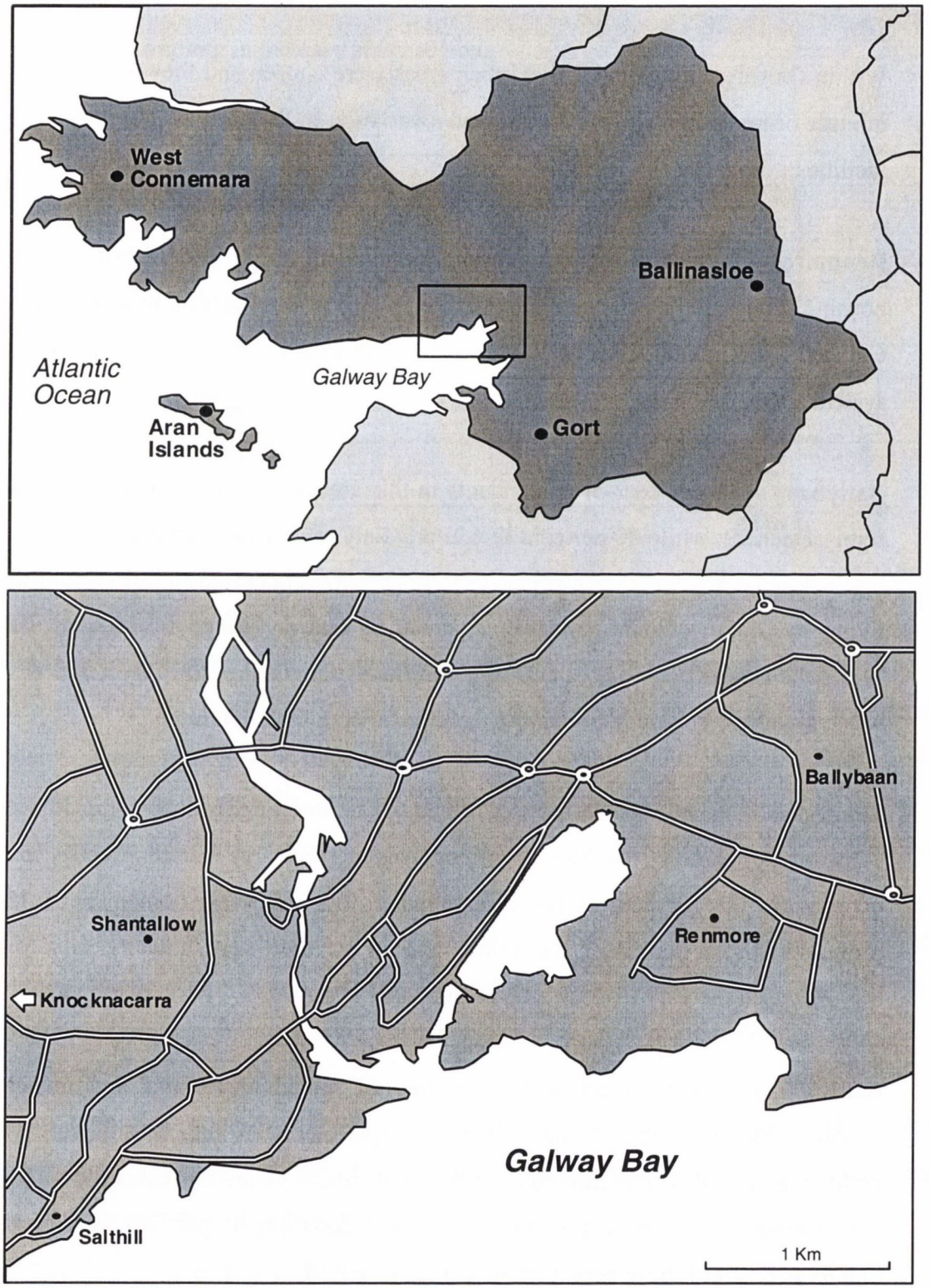
Ballybaan – 30 per cent of respondents in this area live in council housing (terraced and semi-detached), while 40 per cent live in privately rented accommodation. The majority of those respondents who were privately renting were students from all around the country living in Glasan student village and attending Galway Mayo Institute of Technology. While the majority of respondents living in Ballybaan avail of the City Council's three-bin waste system, there are no recycling facilities in operation in Glasan.

Shantallow – an area with a mixture of housing tenure (largely older terraced housing) and a mixed population (the age of respondents in this area varied greatly, as did their occupation). 23 per cent of those surveyed in this area were homemakers, 16 per cent professionals, 12 per cent were retired, and 10 per cent were students. Most residents in this area used the City Council's three bin waste system.

Salthill – a seaside resort with a mixture of rented apartments and owner-occupied housing. The majority of those living in apartments in this area have no recycling collection system. The population, for the most part, is young and transient – 41 per cent of respondents to the survey lived in rented accommodation, 45 per cent were aged under 30 and 85 per cent of those surveyed were aged under 50.

Knocknacarra – an area of owner-occupied detached and semi-detached housing. All respondents in this area lived in privately owned homes. The vast majority of residents in Knocknacarra use the City Council's three-bin waste system.

Figures 4.2 (top) and **4.3** (bottom): Questionnaire survey sites in Galway County (top) and Galway City (bottom)



To maximise response rates and to reduce sample bias the researcher called on participants at a range of times during the day. For example, in addition to the traditional 9am to 5pm

working day, the researcher visited participants on weekends and from 7pm to 9pm weekday evenings to elicit a greater range of responses. If there was no reply from the house selected from the electoral register, the researcher called on a neighbour on one side or other of the initially selected house. If either of the additional two homes failed to respond, the researcher called back at another time. For example, if a selected householder was not at home during a weekday morning, the researcher attempted to call on another day of the week during the evening. The researcher introduced herself to the respondents as a student and briefly described the project prior to inviting the householder to participate. The respondents were assured that their information would remain confidential and would be used solely for research purposes. In addition, the respondents were informed that the results from the research would be made publicly available and every effort would be made to disseminate the findings back to the public in the form of local newspaper articles. On many occasions the researcher was invited into the respondent's home and in line with the pilot survey the questionnaire lasted between 15 and 30 minutes. Following the survey, the data from the questionnaire were analysed using the computer statistics package SPSS – Statistical Package for Social Sciences. The main advantage of using a package such as SPSS is that it enables a large amount of data to be scored and analysed quickly (see Bryman and Cramer 2001). The open-ended questions generated numerous responses, which for the purpose of analysis, and input into SPSS, required coding. The 'coding frame' (Black 1999) or system of coding adopted throughout this project was based upon respondents' own keywords. For example in response to question 9(b) 'If you manage your waste in an environmentally friendly manner what are the main reasons for doing this?' respondents gave a variety of answers including "oh well I've young kids and I'm worried about what the environment will be like in the future for them", or "my child's future", and "I wouldn't like my children growing up in an Ireland of landfills". In this example all responses similar to those mentioned above were coded under a keyword or phrase chosen by the researcher, which in this case was "my child's future". The following chapters, which set out the research results and analysis, draw on the many quotations from the questionnaire survey, and the other stages of the research – the interviews, the focus groups and waste minimisation exercise. In these chapters, extracts from the questionnaires and interviews are indented. They are taken directly from transcripts and as a result may contain colloquial language. The consistent usage of vernacular phrases by the respondents lends legitimacy to the responses; one of the primary aims of the research is to explore the public's understanding of waste and if the

colloquialisms used were absent, this would not be an accurate reflection of the public's understanding. Any words used by the researcher to clarify an extract appear in square brackets. Quotations from the open-ended questions in the questionnaire survey are simply followed by a number from 1 to 500 indicating the questionnaire number.

Overall, the analysis of the questionnaire data identified other topics for further qualitative investigation. At the conclusion of the questionnaire survey respondents were asked if they wished to participate further in the exercise, for example conduct an interview, to which 40 per cent stated that they would like to be involved in further stages of the project.

4.2.3 The Qualitative Approach – Interviews

Twenty interviewees were chosen from a selection of questionnaire respondents who expressed interest in participating further in the study. In this way the respondents were to some degree self-selecting rather than a random sample. However, as 200 questionnaire respondents had indicated their enthusiasm to participate in the interviews it was possible to identify potential interviewees from a wide range of different socio-economic backgrounds, lifestyles, ages, and geographical locations. Interviewees were selected on the basis of these factors, but certain householders were also invited to participate because they had demonstrated particular attributes during the questionnaire process. For example, one interviewee was chosen because data from the questionnaire revealed that he was involved in protests over the location of a landfill, while another interviewee was selected because in the questionnaire survey she rated herself as a poor manager of waste and stated that she had no interest in waste management or the environment. Details of the selection criteria for the interviewees and a biography of all interviewees are presented in Appendix II and III. Similar to the piloting of the questionnaire, a pilot study of the interview was conducted on a sample of householders in the Fingal region. Feedback from these interviewees was beneficial for the research, as questions were altered slightly to improve their clarity, and for the researcher the pilot highlighted potential areas of interviewer bias.

The interviews were conducted in the interviewee's home at a previously appointed time. The interviews were semi-structured in format. This format enabled a variety of topics to be covered but it also facilitated the interview to focus on particular issues of interest to the interviewee. As a result, the interviews varied in length, lasting between thirty minutes and

one hour and thirty minutes. The interviews were recorded and the researcher took field notes throughout the discussion. The interviewees were asked initially to elaborate on the short responses they supplied during the questionnaire survey. Some of the issues that emerged from the questionnaire survey were then discussed. Appendix IV contains a copy of the interview schedule and outlines the topics discussed. One methodological issue in particular surfaced in the discussion of involvement in illegal activities. Throughout most of the interviews, the topics of backyard burning and dumping of waste were addressed. Discussions about these topics may be deemed sensitive as these two acts are against the law. Hall and Hall (1996) and Lawrence (1988) discuss how hesitant interviewees become when confirming the interviewer's suspicions about the respondents' involvement in illicit activities. As a result, when discussing such topics with cautious interviewees, the researcher framed the question about a respondent's behaviour in a more general manner. For example, "During the questionnaire survey Gort was mentioned as an area with a large amount of backyard burning. Do you have any opinion on the subject?" Respondents also often found it easier to discuss their neighbour's activities, while still validating the reasoning behind burning or dumping of rubbish.

At this point it is also necessary to highlight that interviewees' conversations only relate to their stated behaviour. As Bickerstaff and Walker discuss, interview responses cannot be "treated as giving direct access to experience, that is, assuming that people do what they say or say what they do" (2002:2180). It is likely that there will be a difference between what people say they do and what they actually do. However, other research, such as Barr's (2002:71) research on household waste, acknowledge that "although there is likely to be an over-estimation by respondents concerning their actual behaviour, this can be treated as reliably as observational data, and readers should note that the researcher on reporting environmental behaviour has shown that declared behaviours, whilst probably an over-estimate of actual action, are likely to be proportionally accurate".

Following the completion of the interviews they were transcribed and then analysed. The data analysis was facilitated by a computer-assisted qualitative data analysis (CAQDAS) software package entitled N6. There are numerous varieties and functions of CAQDAS packages (see Ezzy 2002; Crowley *et al.* 2002; Tagg 2002). The current research required, what Hoggart *et al.* (2002) describe as a qualitative data analysis software package that can categorise and code statements to demonstrate the reasoning behind actions, attitudes or

beliefs. N6 was employed in this research primarily to code and collate the data. Each interview was transcribed and was inputted into this computer package. Once inputted all the interviews were explored interactively, the text was searched for various words and key phrases (for example *incineration* or *responsibility*) and quotes from various interviews were linked. Extracts from the interviews were coded on screen as text units and assigned a code (see Appendix V for an example of the coding tree). In the following results chapters, the reference following an interview extract refers to the interviewee and the text unit assigned by the N6 software. For example, GCI04 – 14 refers to text unit 14 of the interview (I) conducted with the fourth interviewee (04) from Galway City (GC). Interviews conducted in Galway County are prefaced with the code GCO.

4.2.4 The Qualitative Approach – Focus Groups

The primary objective of the focus group discussions was to include the often silent voices of youth by gaining an insight into young people's perspective of waste and their perceived role in managing it. For the purposes of this project and for practical reasons children[4] were recruited from school. In general most researchers agree that focus groups are not suitable for children under the age of 6, as these children do not have appropriate language or social skills to participate effectively (Heary and Hennessey 2002). Following two pilot focus group discussions in Fingal, four focus group discussions were conducted with students of different ages (9/10 year olds, 13/14 year olds and 16/17 year olds) in four schools across Galway. These age groups were chosen in order to see if there was a progression of views through adolescence. To ensure that a cross-section of schools was involved in the project, mixed schools and single-sex schools were included and the schools were selected to cover both rural and urban areas. Table 5.2 outlines the four schools which participated in the group discussions.

[4] Children are also referred to as students throughout this thesis.

Table 4.2: Outline of schools involved in focus group discussions

School	Location	Average Age of Participating Students	Single Sex/Mixed School	Green School[5]	Rural/ Urban
Kinvara N.S.	Kinvara, Galway County	9/10 years	Mixed	No	Rural
Creagh N.S.	Ballinasloe, Galway County	9/10 years	Mixed	Yes	Urban
Inverin Community School	Inverin, Galway County	14/15 years	Mixed	Yes	Rural
Mercy Convent,	Newtownsmith, Galway City	16/17 years	Single sex – Girls	No	Urban

Although little has been published on the ethical issues involved in focus groups, the informed consent of parents and children is generally required for any type of research involving children (Heary and Hennessey 2002). In this research, the researcher approached each school principal with details of the project and an invitation for students of the school to become involved. Once the principal agreed to the school's involvement in the research, a letter was sent home to all the parents of the selected class seeking consent for their child's involvement in the project and the recording of the discussions. Prior to the start of the discussion the process was explained in appropriate language to the randomly selected students and each student gave his/her permission to have the discussion recorded. Consent forms for parents and students are outlined in Appendices VII and VIII respectively. As an incentive for the school to participate, following the focus group discussions, the researcher gave brief talks about waste and the environment to several classes in the school and provided teachers with resource packs filled with worksheets and information on the environment. In addition, the school and students were assured that the results from the research would be made publicly available.

Homogeneity with respect to gender when conducting focus groups with children has been recommended by researchers (Hoppe *et al.* 1995; Heary and Hennessey 2002). Heary and Hennessey (2002) suggest that, for older students, interest in the opposite sex can

[5] Green Schools are schools that are involved in the Green-Schools programme run by An Taisce in co-operation with Local Authorities throughout Ireland. Green-Schools is an environmental education programme, designed to promote and acknowledge whole school action for the environment. In Ireland there are currently almost 2015 Primary, Secondary and Special schools participating in the programme, i.e. over 50% of all schools in the country (An Taisce 2005)

negatively affect the productivity of the group. Similarly they note that group productivity may be hindered by younger children's dislike of the opposite sex (Heary and Hennessey 2002). However, in this research the gender of the focus group reflected the format of the school. The benefit of having students participate in groups where they already know the other group participants is that it is anticipated they will have a familiar 'comfort zone' in which to express themselves. Similarly placing students in groups of strangers or with older or younger students creates a new group dynamic. The *right* group dynamic is crucial for successful focus-group research. In an effort to build up a rapport with the students the researcher assumed the role of a student as distinct from a teacher role. At the start of each focus-group discussion, ground rules were established. These included letting everyone have a chance to speak and respecting each other's opinion. The participating students were informed that there were no right or wrong answers and that unlike a classroom setting they could say what they wanted bearing in mind the ground rules. Each discussion was recorded and the setting up of the recording equipment often served as a warm-up exercise prior to the commencement of the discussions.

Lewis (1992) discusses how size of group is a key issue in optimising children's participation in focus-group discussions. Breakwell (1990) too suggests that larger groups can lead to problems of internal fragmentation. However, others disagree over the exact size of effective focus groups conducted with children (see Barnes and Todd, 1977 and Waterhouse, 1983). The focus groups in the current research comprised on average five or six students, the optimum number of participants as identified by Hoppe *et al.* (1995). Along with the size of the group it is also important to ensure that the length of the discussion is appropriate for the age of the young people participating (see Heary and Hennessey, 2002). In order to maintain student interest in the discussion the length of the group discussions was varied according to the age of the group. Discussions with students aged nine or ten years lasted approximately thirty minutes, while conversations with the older students, who had longer concentration spans, took between 45 minutes and one hour. Physical prompts and activities were introduced throughout the duration of the focus groups in an effort to maintain interest in the topic under discussion and to engage the participants in specific topics of conversation relating to waste management. For example, the moderator invited younger students to take part in a 'pass the parcel' activity (a children's game) and this sparked a discussion about packaging. Similarly, when the topic of littering arose during discussions with older students, the moderator introduced litter-

awareness posters and focused a section of the discussion on these posters. The group discussions were semi-structured and the moderator posed open-ended questions covering a variety of issues on the topic of waste management. Many of the same topics were addressed by each group. However, the older students had the ability to discuss the various issues in greater depth. One distinctive issue which surfaced during the focus-group discussions was the students' use of the language of sustainability. During the course of the brief focus-group discussions it was not possible to verify whether the students fully understood the sustainability rhetoric they were using or whether they were simply repeating phrases used in the teaching of sustainable development or phrases they had heard others use. This issue is revisited during the analysis of results. The full schedule of questions for the focus groups is presented in Appendix VI. Recordings from the focus group discussions were typed up prior to analysis. Throughout the following results chapters the quotations from the focus groups are identified by the location of the focus group, the age of the respondents (either 9/10; 14/15; 16/17) and the gender of the school (mixed, girls, boys). In addition all the students' names have been changed to ensure anonymity.

4.2.5 The Qualitative Approach – Household Waste Minimisation Exercise

The household waste minimisation exercise was developed as a method to investigate people's actions in relation to waste in their own homes. The questionnaire and interviews identified a number of barriers to improved waste management. Building on the information from the previous stages of research, the final phase of the project, the household waste minimisation exercise involved four households implementing 'good' waste management practices in their homes and investigated the practical applicability of different ways of managing waste on a day-to-day basis. The exercise focused an all aspects of managing waste from minimising and re-using waste to composting and separating waste and the participants were asked to identify any problems with managing household waste, as well as suggesting potential solutions.

The participants in the household exercise were selected from a sample of respondents who had previously conducted questionnaires and/or an interview. The questionnaire results and subsequent interviews identified a range of household waste management behaviours including households who, for a variety of reasons, were having difficulty managing waste.

For example, households living in apartments, rented housing, young professionals lacking time, students sharing, and households without recycling facilities. For the purposes of the waste minimisation exercise a variety of households from different areas in Galway were selected to participate. In the area administered by Galway County Council two households were chosen as participants,[6] (1) a family with a new house in a rural location outside Roscahill, (2) a working mother and a young daughter who have no access to private transport, and are in an apartment in the centre of Ballinasloe town. Again, in the Galway City Council area two households were selected: (3) one incorporating six students sharing, (4) a young professional couple sharing a new apartment – neither household is currently serviced by Galway City Council's three-bin system. A synopsis of each household is presented in Appendix IX.

The practical investigation was conducted over a four-week period. During the initial meeting the householder received a range of products and instructions (detailed in Appendix X) and they were briefed on what was expected of them as participants. The households were visited once a week for four weeks and at each meeting the participants were given the opportunity to reflect on their progress during the previous week. Each week a specific issue was emphasised. For example, the main focal point during the second week was composting and during week three householders were asked to consider their shopping habits. For the first fortnight of the project the facilitator collected the participants' recyclables.

The notion that a participant's behaviour changes when he or she is aware that he or she is being observed is a specific methodological criticism commonly directed towards research of this nature. Frequently referred to as the 'Hawthorne effect', this phenomenon is discussed in full in the following section. In this research, participating households were repeatedly informed that the value of this exercise depended on their total honesty during feedback exercises and their self-evaluation about the ease and difficulties they faced when attempting to move towards model household waste management behaviour. In an attempt to encourage maximum participation in the exercise, tasks were kept to a minimum. As a result householders did not have to keep a record of their every waste management action.

[6] Note on participants: one member of each household, who had previously partaken in a questionnaire and interview, undertook to participate in the exercise and meet with the facilitator each week. However, in all cases, other members of the household participated in the exercise but were not always present at the weekly progress meeting.

Rather, at the end of each week the participants filled out an evaluation form and a final interview was conducted at the conclusion of the entire exercise. These forms and interviews, containing the participants' reflections on the exercise, were then collated, inputted and analysed. Throughout the discussion of the results presented in the following chapters, the extracts from the household waste minimisation exercise are coded with H to denote household number, and W to indicate which week of the four-week exercise the conversation took place.

4.3 Additional Methodological Issues

Waste management policy in Ireland at the present time is constantly evolving. As a result waste management services and facilities are changing all the time. Within the context of this research, the time lapse between collection of the questionnaire data during the early months of the year 2003 and the gathering of interview data, completed during the first month of the year 2004, should be noted. An interviewee's waste management circumstance and opinions may have changed within that time period. For example, an interviewee may have expressed dissatisfaction with waste management services during the questionnaire survey. However, when asked about the same topic during the course of the interview several months later the same respondent may be very satisfied, as a new recycling collection may have been introduced within that timeframe. Recognising that society is continually changing, grounded theory was selected as the theoretical approach for this research as the application of this theory enables changing opinions and remarks about the constantly evolving topic of waste management to be incorporated into the research results.

As referred to in the previous section the 'Hawthorne effect', the notion that when people's behaviour is affected when they know they are being observed, is well known and abounds in management and organisational studies (Landsberger 1968). Hall and Hall (1996) discuss this scenario in the context of unintended effects of doing research and state that it is "difficult to estimate the intrusiveness of different techniques on the responses and behaviour of your informants" (1996:263). Literature, such as Kothari (2001), questions the value of research based on contrived performances – the participant acting for the benefit of the observer. It is a difficult problem to resolve and according to Kitchen and Tate (2000) the only way of testing is to observe people covertly which draws its own

ethical problems. To mitigate the Hawthorne effect, prior to discussions with students in the focus-group setting, the moderator stressed that there were no right or wrong answers to any of the questions. Similarly, in interviews the interviewer attempted to give no indication of what was expected in the answers, and in general, with the exception of changing services, the interview data were consistent with the quantitative data from the questionnaires. In an attempt to minimise participant's behavioural change under observation in the household waste minimisation exercise, participant truthfulness was emphasised. The objective of the exercise was to identify problems and solutions and the fact that this was dependent on the householder's honesty was reiterated to each participating household. By the interview and waste minimisation exercise stage of the research the researcher was well known to the householder and welcomed into the respondent's home. The researcher noted that as a result of this familiarity, the householder was relaxed and appeared to carry on their regular household activities. For example, one respondent had a fire burning rubbish in the back garden during the course of one interview! While prevalent in all data collection methods, researcher bias, or the degree to which a researcher shapes responses, is a common criticism of qualitative research techniques, such as interviews or focus groups, in particular (Kitchen and Tate 2000; Hoggart *et al.* 2002). In the current research a good rapport was established between the researcher and the majority of the participants, young and old. The researcher's role as a student enabled a level of trust to build up between interviewer and interviewee. As a result the interviews and feedback from the household waste minimisation exercise on many occasions resembled an in-formal conversation.

The topic, waste, is one that affects everyone to a greater or lesser degree. In many cases where respondents felt they were not capable or qualified to participate in the research it was suggested to them that they as individuals were adequately qualified to participate as they disposed of rubbish every week. The nature of the methodology also encouraged a high participation rate in the project; the public themselves were asked for problems and solutions and for many it was the first time they had been asked directly to contribute in such a way. Indeed, some respondents felt that their involvement in the project was their only opportunity to voice concerns about wider issues, such as speed limits on national roads. All this information was recorded. However, on several occasions the conversation had to be steered back to the topic of waste.

There were certain locations in which questionnaire surveying and interviewing were easier to conduct. For example, participants from communities with a large retired population generally had more time to participate in the research and were often at home during the day. Similarly, due to the random sampling selection process, some individuals were more forthcoming than others; some may have been more opinionated or more articulate than others. As a result, when conducting the fieldwork and analysing the results care had to be taken to incorporate the opinions of all individuals and not concentrate on the responses from the articulate participants.

4.4 Reflecting on the Research Process

This chapter detailed the multiple methods employed to achieve the aims of this research project. Using a case study focus, the research produced both essential baseline quantitative data on environmental attitudes and behaviour and more detailed qualitative information highlighting public understanding of value-action gaps in the environmental policy arena. While the aim of the quantitative research was to provide innovative baseline information about waste and to establish the existence of the value-action gap, the primary objectives of the in-depth qualitative methods was not to provide statistically significant conclusions. Instead it was to gain a greater understanding of the participant's attitudes and behaviour towards waste; the reasoning behind the value-action gap. The research methodology also employed innovative action research methods in the form of a household waste minimisation exercise, which not only generated in-depth practical knowledge about household waste for use in the research but also attempted to improve householder waste management behaviour. Throughout each stage of the research process participants were asked about their opinions and activities as they relate to waste management, and to identify, drawing on their own and their community's experiences, the main difficulties and opportunities for managing household waste. The following chapters present the results of the research and reflect on these results in light of the literature and theoretical approaches reviewed in Chapter 3.

Chapter 5: Results I – Attitudes and Behaviour towards Waste Management in Galway

5.1 Introduction to the Results

Reflecting previous studies conducted on environmental attitudes in Ireland (Drury 2000, 2003) the results from this research illustrate how widespread concern for the environment and more specifically, the issue of waste management, was expressed across the case-study locations. However, in line with the findings of national and international studies (see Harrison *et al.* 1996; Blake 1999) the research identified a mismatch between attitudes and behaviour of the public towards waste management. The results from the present research highlight the variables which influence waste management attitudes and behaviour and contribute to this value-action gap.

The following chapters examine the research results and compare them to previous research conducted in this field. A review of the literature categorised the variables which influence an individual's pro-environmental behaviour as *demographics, personal, practical,* and *contextual.* However, as concluded in Chapter 3, these variables rarely operate in a vacuum; it is the interplay between various factors operating within wider social, cultural, economic and political discourses which influence behaviour. For the purposes of this research it is necessary to deconstruct the factors that influence behaviour. Consequently, using the structure developed during the review of literature, the following Chapters, 6, 7, and 8, report principally on the findings from the qualitative research and discuss in detail the various personal, practical and contextual variables that influence waste management attitudes and behaviours, respectively. As a context for the qualitative analyses, this chapter initially examines the research findings on levels of attitudes and actions towards waste management and the environment expressed by respondents in the questionnaire survey.

As discussed in the previous chapter the questionnaire was comprehensive and lengthy (six pages long). Consequently, the questionnaire produced a large body of quantitative data. In

addition to questions requiring respondents to discuss their attitudes and behaviour to waste the long questionnaire contained many questions relating to the broader topic of waste management service provision and wider environmental problems, both national and local. For the purposes of this research, the thesis results predominately report on information garnered from Questions 9, 10, 11, 12, 13, 14, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, and 30 in the questionnaire (see Appendix I). The answers to each question are not examined in detail in the following chapters because, although these data are interesting, they do not significantly contribute to the final arguments formulated in this thesis research.

Indeed, the primary reason for reliance on qualitative data rather than quantitative data within the results, analysis and discussion of this thesis rests with the stated aim of this research to further knowledge in this field. The quantitative data collected during the course of this research provided essential baseline information about public perceptions of many aspects of waste management in Galway and these quantitative data identified the existence of value action gaps in waste management in Galway City and County (the main findings of the quantitative stage of research are summarised and presented in the results of this research dissertation). However, as reviewed in Chapter 3, preceding Irish based research (see Faughan and McCabe 1993; Drury 2000; Drury 2003) had previously established that a value action gap exists with regard to public attitudes and action towards environmental issues in Ireland. The limitations of these surveys have been detailed in the literature review however, the major limitation of these surveys, for academics and policy makers researching this area, is that they simply conclude that a value action gap exists while failing to examine in detail the possible reasons for this discrepancy. One of the primary objectives of the current thesis is to further (not replicate) existing research, to venture beyond an acknowledgement that the value-action gap exists and attempt to establish a more in-depth analysis of the various factors which influence attitudes and behaviour and develop a more nuanced rationale for the existence of such a gap. To achieve this deeper understanding of public attitudes and actions it was imperative to undertake a range of qualitative research methods and this is discussed in detail in the preceding chapter outlining the methodology employed during this research. Consequently, the large body of quantitative information gathered during the course of this research is (although summarised and discussed in several sections throughout the remaining chapters) overshadowed by the qualitative data conducted and analysed for this research, as these

qualitative data provide the core of the original and novel contribution to new knowledge in this field.

In addition, quantitative data evaluating waste management issues, such as satisfaction with individual waste services and information requirements of local areas, are findings and recommendations that are potentially more appropriate for policy makers rather than academic findings or recommendations. It is beyond the remit of this thesis to evaluate, for example local waste services and to cross tabulate these data with demographic information gathered, yet, these quantitative data and these cross tabulations have been written up elsewhere (see Davies *et al.* 2005) and recommendations based on these data have been presented to the relevant local authorities (see Fahy *et al.* 2004a; 2004b; 2004c; Davies *et al.* 2004).

Following a brief overview of the profile of the questionnaire sample, the chapter identifies the value-action gaps in waste management in the case-study locations. This chapter then outlines the public's perceived opportunities and barriers to improved waste management behaviour, people's attitudes towards, and participation in, a variety of environmental policy actions, and identifies the need to examine in greater depth the intervening variables between waste attitudes and behaviour. Following this review of the questionnaire results, the chapter chiefly discusses how attitudes and actions towards waste management differ when demographic variables such as age, gender, location and housing tenure are examined.

5.2 Profile of Questionnaire Respondents

Two hundred and fifty households were surveyed, using the questionnaire in each of the areas administered by Galway City and Galway County Councils. A total of 500 questionnaires were deployed face-to-face in the respondents' homes.

Gender

Figure 5.1 illustrates the division of respondents in the study area according to gender. Despite a ratio of almost 1:1 in Galway as a whole in 2002 (104,367 males to 104,710 females) (Central Statistics Office 2002), 65 per cent of the respondents participating in the survey were female. One reason for the larger female response rate was that more women

than men were at home at the various times when the researcher called. This concurs with the national census data which state that over 95 per cent of homemakers are female.

Age

Figure 5.2 illustrates the division of respondents according to age. 50 per cent of the respondents were aged between 18 and 39 years, with only 8 per cent aged over 70. However, Ireland has a relatively young population. Data from the national census established that the average age of the Irish population in 2002 was approximately 35 years old (Central Statistics Office 2002) and this perhaps explains the large percentage of respondents in the 18 to 39 year-old category.

Housing tenure

Figure 5.3 illustrates the division of respondents according to housing tenure. The majority (67 per cent) of participants live in privately owned dwellings. Again the 2002 statistics depict a tendency towards privately owned housing; 77 per cent of households in Ireland are owner occupied, 7 per cent are rented by the council and 11 per cent are privately rented (Central Statistics Office 2002).

Education

As illustrated in Figure 5.4, 73 per cent of respondents had a Leaving Certificate or third level qualification. This figure directly relates to the relatively young age structure of the respondents. The 2002 census of population shows that recent generations are better educated. Almost half of the population born in the 1930s left education after primary school in comparison to only 3 per cent of those born in the 1970s. The percentage of the population (aged 15 or older) who completed their education with a third level qualification rose from 19 per cent in 1996 to almost 25 per cent in 2002 (Central Statistics Office 2002).

Figure 5.1: Respondents' Gender

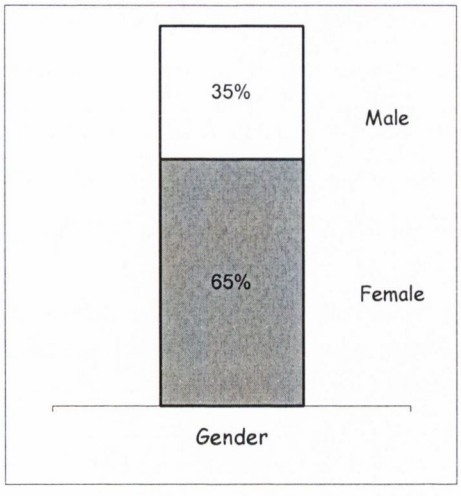


Figure 5.2: Respondents' Age

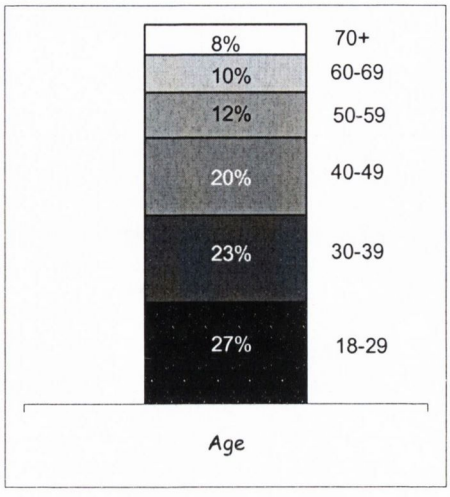


Figure 5.3: Respondents' Housing Tenure

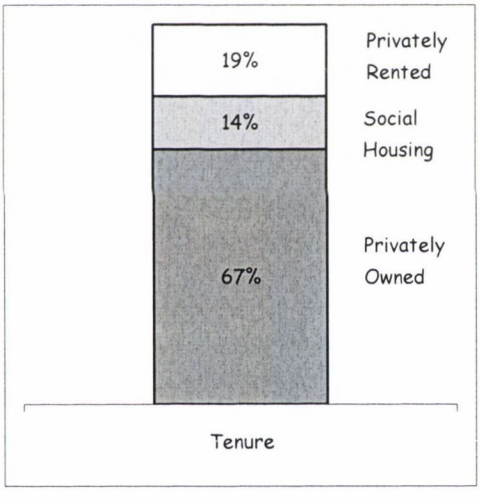
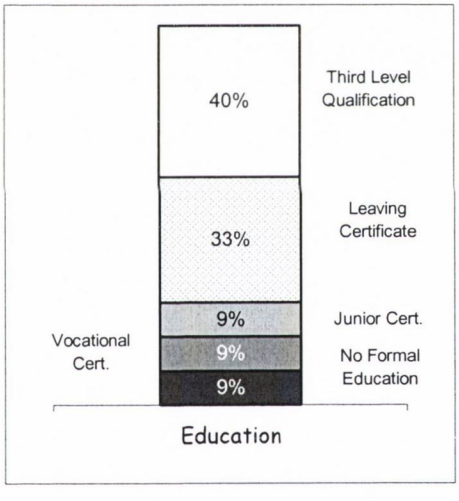


Figure 5.4: Respondents' Education



5.3 Attitudes and Behaviour towards Waste Management

With regard to attitudes towards waste management, the results from the questionnaire survey (specifically Question 11a see Appendix I) revealed that the majority (91 per cent) of all respondents felt there were waste problems in Ireland. However, when questioned about the measures respondents were prepared to take to limit waste problems question (Question 11c in Appendix I), only 16 per cent of respondents provided an answer. The low response to this question indicates that the respondents felt that there is little they, as householders, can do to limit waste management problems, and possibly that respondents are unaware of what they can do to curb waste management problems.

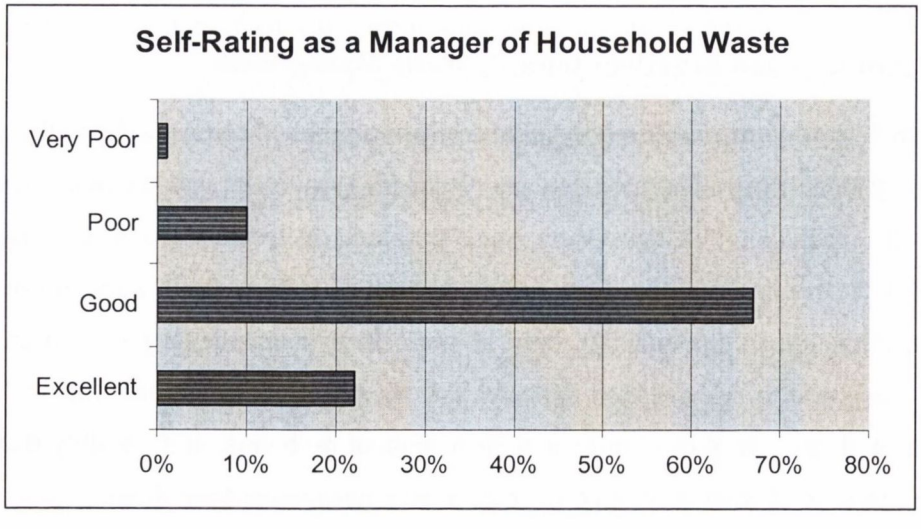
The survey provided a list of options from which respondents chose their main priority for Irish waste management policy over the next few years (Question 14 outlined in Table 5.1). Overall, *Increase recycling facilities* was chosen by 46 per cent of all respondents as the main priority for the country in the coming years, followed by *Design packaging that is biodegradable* (22 per cent), and *Introduce incinerators* (15 per cent). However, there were differences across age, occupation, location, housing tenure and type.

Table 5.1: Question 14 (a) when it comes to household waste, what do you think should be the main priorities for Irish waste management policy over the next few years? *Please rank your top three* (taken from the questionnaire).

Increase recycling facilities		Design packaging that is biodegradable	
Improve and use landfill		Leave things as is	
Introduce incinerators		Don't know	
Reduce landfill		More composting	

The survey asked respondents to rate themselves as managers of household waste and then identify reasons for their action or lack of action with regard to improved waste management (Questions 9a, 9b, 9c and 9d). Results for this part of the survey are summarised in Figure 5.5. Considering the results from all 500 questionnaires, the vast majority of respondents (89 per cent) considered themselves *good* or *excellent* when asked to rate themselves as managers of household waste. Only 11 per cent of the 500 respondents rated themselves as *poor* or *very poor*.

Figure 5.5: Summary of how respondents rated themselves as environmental managers (Q9a)



The most commonly cited reasons for acting in an environmentally-friendly way with respect to waste were: concern for the environment[7] (38 per cent); the accessibility and suitability of facility provision (16 per cent); an aesthetic desire to keep places tidy (11 per cent); and the positive feeling that is gained from behaving in a socially acceptable manner (9 per cent). The most commonly cited reasons provided for not managing waste in an environmentally-friendly way included: a lack of thought given to waste management (26 per cent); that it is easier to throw rubbish into one bin rather than separate it and recycle it (24 per cent); a general lack of facilities locally (15 per cent); a shortage of time (15 per cent); and a self-confessed laziness when it came to waste management (10 per cent).

When respondents who rated themselves as *excellent* or *good* at managing household waste in an environmentally friendly way were asked what would encourage them to further manage their waste in an environmentally-friendly way (Question 9c), one-third of respondents said nothing would encourage them. In many of these cases respondents felt that they were doing the maximum they could with regard to managing waste. A further clarification of this finding was undertaken in the qualitative section of the research. Where respondents felt that further measures could encourage them to act more positively two key features stand out, with nearly a quarter of respondents highlighting them as significant: better facilities for recycling, particularly close to their homes; and more education or information that would help them identify ways of acting positively. Other respondents mentioned that economic factors, such as a money-back deposit system on recyclables, would encourage them to change their behaviour. Some respondents stated that they would be encouraged to do more if the shops played a role in helping to reduce packaging waste. In her research on household consumption patterns in the UK, Hobson (2003) identified packaging and the marketing habits of manufacturers as factors limiting householders' attempts to change their shopping habits. The majority of respondents' answers pointed to the prevalence of a reactive rather than pro-active perspective on managing household waste. For example, many respondents felt that they would improve their waste management behaviour if more or better facilities were provided, but there is no evidence to suggest that, prior to the questionnaire survey, the majority of respondents in this research actively sought improvements in service.

[7] Note: phrases/keywords are derived from respondents' own words.

Confirming previous research conducted on the environmental value-action gap (Blake 1999), this questionnaire survey identified a gap between the recognition of waste problems and the actions taken to correct these problems and, in addition, the survey highlighted that few people undertake waste management activities that entail modifications to their lifestyle. This latter finding is explicit in the following questionnaire results examining household participation in composting and recycling schemes (Question 4a). The questionnaire revealed that there was a higher composting rate in the area governed by Galway City Council (80 per cent) than Galway County Council (57 per cent). However, answers to a later question (Question 10) revealed that the majority of respondents in Galway City had a door-to-door compost collection, while only a small number of respondents in Galway County had such a service. Similarly, (as identified in Question 18a) in the areas where a door-to-door recycling collection was available, 97 per cent recycled on a daily basis and every respondent had experience of recycling. However, in areas with no door-to-door recycling collection, 13 per cent recycled on a daily basis and 25 per cent had never experienced recycling. Where a door-to-door collection was available, higher rates of involvement in recycling were recorded. This supports Blake's (1999) findings from a project conducted in Huntingdonshire in the UK that people are more likely to undertake actions when a high level of support is provided, resulting in little or no major change in lifestyle.

In addition to providing base-line information on waste management attitudes and behaviour the questionnaire identified ambiguities and apparent contradictions between values and actions in relation to waste. The questionnaire raised further questions that required investigation and highlighted the need to examine many of the issues underpinning the questionnaire responses. In order to explain the value-action gap, these issues have been examined through more in-depth studies, interviews, focus-group discussions and household exercises that form the remaining stages of the research project, the results of which are discussed throughout the remainder of this thesis. The following section in this chapter illustrates how the quantitative results on attitudes and behaviour towards waste management, presented above, can vary when variables such as demographic factors are considered.

5.4 Demographics

The following sections outline how waste management attitudes and behaviour vary when demographic variables are examined. As mentioned in the introduction to this chapter many of the factors discussed throughout the results chapters of this thesis are interrelated and they overlap. To aid clarity of analysis and minimise repetition throughout this chapter and the following three chapters age, gender, occupation, housing tenure, type, composition and location (i.e. data related to Questions 23, 24, 25, 29, 30 in the questionnaire) are discussed in the following section. Additional references to demographic variables and their influence on waste management attitudes and behaviour are spread throughout the following three chapters. For example the topic of occupation is discussed in detail in Chapter 7, Section 7.4, in the context of practical variables such as time and convenience and Section 7.6 discusses how data gathered on information and education vary when age, education, occupation and housing tenure are examined.

5.4.1 Age

The questionnaire data revealed that public attitudes and behaviour towards waste management varied according to the age of the respondent. In particular, respondents in the over-70 category held noticeably different opinions than the other age categories, on perception of waste problems and future waste management priorities. For example, with regard to attitudes towards waste management, the vast majority of all respondents (91 per cent) felt that there were waste problems in Ireland. However, one fifth of respondents aged over 70 felt that there were no waste problems in Ireland. While litter, lack of available landfill, and illegal dumping were identified as the biggest areas of waste management concern across almost all age categories of respondents, the respondents in the 70-plus age category felt that the largest waste problems were litter, farm waste, and a bad attitude to the environment. Similarly the waste management priorities for Ireland in the coming years identified by respondents in the oldest age category (70-plus) differed significantly from the other age categories. *Increase recycling facilities* was the most commonly cited answer by respondents in most age categories. For the oldest age category, however, *Introduce incinerators* was the number one priority, at 38 per cent. In comparison, only 6 per cent of respondents aged between 18-29 felt that *Introduce incinerators* should be the country's main priority. There are many potential reasons for

this discrepancy between the attitudes of oldest and youngest categories of respondents, which could be due to different perceptions of risk (Douglas and Wildavsky 1983; Lash 2000), different generational views of technical fixes for environmental problems and awareness of alternative arrangements for waste management.

The reasons for action or inaction with regard to waste management also varied when age was examined. When asked to rate themselves as managers of waste 98 per cent of respondents aged between 40-69 considered themselves *excellent* or *good*. In contrast, over a fifth of respondents aged between 18-29 considered themselves *poor* or *very poor*, followed by 17 per cent of respondents aged between 30-39. In other words, over 90 per cent of respondents who ranked themselves as *poor* or *very poor* at managing their waste were aged between 18-39 years. With the exception of environmental concern and facility provision, which were the most commonly cited reasons for acting in an environmentally-friendly manner across all age categories, some reasons given were prominent, even specific, to certain categories of respondents. For example, respondents in the age categories 30-39 and 40-49 proffered *my child's future* as a prominent reason to act in an environmentally-friendly way. The development and perpetuation of civic spirit, defined by participants as *pride in one's neighbourhood* or *neighbours who care about each other*, were offered as reasons for acting positively in relation to environmental management of waste, predominantly from respondents aged 40-49 and over 70. Other respondents, mainly within the age range 18-39, mentioned that economic factors, such as a money-back deposit system on recyclables, would encourage them to change their behaviour. With regard to paying for waste services, the highest percentage of respondents who felt that they should not pay were aged over 70 (37 per cent) and the reason most frequently cited was 'I shouldn't have to pay. I'm an OAP'.

Approximately half of all respondents who were either retired or aged over 60 felt that there was nothing that would encourage them to act in a more environmentally-friendly way with regard to waste. In many of these cases respondents felt that they were doing the maximum they could with regard to managing waste. Correspondingly, 56 per cent of respondents aged over 70 considered themselves not very active on general environmental policy issues, with several respondents offering qualifiers such as 'I leave that up to the younger ones around here' or 'I'm not active at all any more', suggesting that environmental policy matters are the metier of a younger generation. This point arose again

in a more oblique discussion about the role of age in shaping attitudes and behaviours during the qualitative stages of research. The notion that it is easier for younger people to become familiar with separating waste and good waste management was echoed by an older interviewee who felt that utilising her bin system correctly was the maximum she could do; 'we are doing as much as we can considering our age' (GCI07 –18).

Another theme that emerged from the interviews, which illustrates how age influences waste management behaviour, is the idea that individuals in older age groups had been raised in an era when recycling and minimising waste were practical, everyday, money-saving actions and not overtly ethical or environmental. As a result there was a perception amongst interviewees that, in the current waste management climate, older people tend to minimise waste more frequently than younger generations. This finding concurs with Barr's (2002) quantitative research on household waste management, which reported that age is a good predictor of minimisation behaviour and specifically that older age groups minimise waste more often. In contrast, the younger generation were often perceived as *wasteful* by older interviewees, and they attributed younger individuals' increasing consumption patterns and waste activities with a growth in wealth, individualism and the development of a 'throw-away' society (related themes of consumption, consumerism and waste are discussed in a later section of the results).

The role of young people and waste was another theme which emerged from the questionnaire survey and interviews and was reflected in the focus-group discussions. While many survey respondents commented that young people were a main source of waste problems, such as litter and fast-food waste disposal, and perceived young people as having an ambivalent attitude towards waste management, several interviewees remarked that young people were vital to positive environmental actions within society. In particular it was often cited that the future of waste management relies on the children of today. Several interviewees remarked that, in some cases, it is more difficult for older people to learn how to use new waste management schemes and that waste policies should be directed towards young people. Interviewees remarked that there was a need to instil, within younger generations, a sense of urgency regarding good waste management practices.

> There will always be a percentage of people who won't do it but if you start with the kids. So as you will have the next generation doing it right (GCOI10 –13).

Results from the focus group discussions demonstrate that in general young people's attitudes towards waste management are similar to the attitudes expressed by older participants. The students, even the younger ones, were aware that waste was a problem and were conscious of waste issues beyond their locality at the national and even international scale. Corroborating remarks made by older participants in the research, a couple of students discussed how young people frequently partake in actions such as littering:

> Amy: Young people don't care. They just throw litter all over the place. I got [phone] credit the other day and I just threw the receipt on the ground (Galway, 15/16, Girls).

Although young people were held up as a decisive part of future positive environmental actions by older research participants, data from the focus group discussions demonstrate how older generations, and in particular parents, were perceived as highly influential in shaping the views and actions of the younger generations. For example, the students wanted guidance from adults on appropriate environmental behaviour and wanted to see adults setting them good examples to follow.

5.4.2 Gender

Levels of environmental and waste management concern were generally consistent across gender. In contrast to work conducted by Van Liere and Dunlap (1980) which revealed that women were more likely to be more environmentally-friendly than men, the results from Galway suggest that levels of general environmental concern and waste management attitudes did not differ significantly. Similarly, from Table 5.2 it is apparent that, when choosing the main waste priorities for the country in the years ahead, there are some basic commonalities according to gender. For example *Design packaging that is biodegradable* was chosen as a main priority by 22 per cent of females and 21 per cent of males. However, 23 per cent of men favoured *Introduce incinerators* as the main priority for the

country in comparison to only 10 per cent of females. The fact that a larger proportion of male respondents than female respondents chose options such as *Improve and use landfills* and *Introduce incinerators* may be a reflection of more men than women preferring technical solutions to waste management problems. Supporting the results of Buckingham *et al.*'s (2004) report on gender and waste, females appear to favour the promotion of better household waste practices, such as recycling and composting. For example, 51 per cent of females felt that to *Increase recycling facilities* should be the main priority, in comparison to 36 per cent of males.

Table 5.2: Respondents' selection of main priority for Irish waste management policy over the next few years

Main Priority	**Total**	**Of which female**	**Of which male**
Increase recycling facilities	46%	51%	36%
Design packaging that is biodegradable	22%	22%	21%
Introduce incinerators	15%	10%	23%
Reduce landfill	6%	7%	5%
More composting	5%	6%	3%
Improve and use landfill	4%	3%	7%
Don't know	2%	2%	3%
Leave things as is	1%	1%	1%
Total	100%	100%	100%

In terms of managing waste in an environmentally-friendly manner, 64 per cent of males and 68 per cent of females considered themselves good. However, a higher percentage of males (25 per cent of males) considered themselves excellent at managing waste in an environmentally-friendly way. In contrast, a lower percentage of females (20 per cent of females) rated themselves as excellent. No male rated himself as very poor in comparison to five females who gave themselves that rating (see Table 5.3).

Table 5.3: Cross tabulation of gender and respondents' ratings

	Excellent	Good	Poor	Very Poor	Total
	No. of Respondents	No. of Respondents	No. of Respondents	No. of Respondents	No. of Respondents
Male	44	111	18	0	173
Female	66	221	34	5	326

The reasons provided by male and female respondents for acting in an environmentally-friendly way with regard to waste management were similar. Surprisingly, given the literature alluding to the fact that women are often motivated to act in an environmentally-friendly way for the sake of their children (Buckingham-Hatfield 1994), there was no significant difference between percentages of males and females citing 'my child's future' as a reason to manage waste in an environmentally-friendly manner. All respondents who cited 'it just makes sense' as a reason for managing waste were female. Rates of male and female participation in household waste activities, such as composting and recycling glass, were also similar. For example, 65 per cent of males and 65 per cent of females composted on a daily basis, while 14 per cent of both males and females never recycled glass. However, a higher percentage of females (36 per cent) than males (25 per cent) purchased products without or with less packaging for the sake of the environment on a weekly basis and 52 per cent of males had never thought about packaging while shopping, in comparison to only 44 per cent of females. Analysed collectively, these statistics oppose Steel's (1996) assertion that women tend to participate more in environmental activities. However, in line with Barr's (2002) research on household waste behaviour in Exeter, the questionnaire data corroborate the perception that women have higher levels of waste reduction. Another explanation for the fact that a higher percentage of women than men purchased products without packaging, for the sake of the environment on a weekly basis, is perhaps related to that fact that women in general still undertake the majority of domestic work, including shopping (Buckingham-Hatfield and Matthews 1999). A young female participant in the household waste minimisation exercise reiterated the perception that women are more likely to engage in improved waste management practices:

> You're lucky we're all girls, boys wouldn't [participate in the exercise], they just wouldn't do it ... (H3W2).

> I wouldn't see lads doing it [participate in the exercise] at all, oh not at all – certainly not the lads I'm in college with … Basically it wouldn't be a cool thing to do (H3W4).

5.4.3 Occupation

The questionnaire data revealed that individuals in different occupations had distinct reasons for action or inaction with regard to waste management. For example, the biggest barrier to managing waste in an environmentally-friendly manner identified by professionals was a lack of time. Perhaps unsurprisingly a third of those who felt that they acted for their child's future were homemakers. With regard to the barriers identified by students, 31 per cent felt that there were not enough facilities locally, 25 per cent did not think about waste management issues at all and 18 per cent felt that it was just too handy to throw everything into one bin. Students were the largest group that cited economic measures as an effective means to encourage changes in their behaviour. 27 per cent of those respondents who were unemployed felt that they should not have to pay waste charges.

In general, homemakers, professionals, and retired respondents comprised the occupation categories with the highest counts of individuals who rated themselves as *excellent* or *good.* Approximately a third of respondents who rated themselves as *poor* were students. Data from the household waste minimisation exercise reveal that of all the participating households the student household performed the worst on all the household waste activities throughout the four-week period. Despite informing the participants (by word of mouth and in print) that the recyclables needed to be clean and the plastics squashed, at the end of the first week the recyclables had not been cleaned prior to collection and the bottles still had lids on them and were not squashed. After the facilitator reminded the household about the need to place clean recyclables out for collection, there was an improvement by the end of week two, but some items were still dirty and un-squashed. By the end of the third week of the project the participants were still separating but not to the same extent. One participant commented that with the exception of one student, they as a household had grown tired of the exercise and as a result they had become lazy:

just fed up with it to be honest we just manage the one bin ...(H3W3).

We didn't mind doing it [the project] but we got lazier as we went on (H3W4).

5.4.4 Housing Tenure, Type and Composition

With regard to attitudes towards the environment and waste management, almost a fifth of respondents living in social housing were *not very concerned* about the state of the environment, while 12 per cent had *no opinion*. In contrast, as depicted in Table 5.4, only 7 per cent of respondents living in privately owned housing were *not very concerned* and 5 per cent had *no opinion*. Similarly, despite widespread recognition that waste was a problem in Ireland, one-fifth of all respondents living in social housing felt that there were no waste management problems in the country.

Table 5.4: Cross-tabulation of housing tenure and concern for the environment

	Privately owned housing %	Social housing %	Privately rented housing %
Very concerned	16	16	11
Concerned	71	52	75
Not very concerned	7	19	7
Have no opinion	5	12	7

The majority (75%) of respondents who rated themselves as *excellent* or *good* at managing waste in an environmentally friendly way shared a household with their family (living with parents/children) while 30 per cent of respondents sharing with three people and 36 per cent of respondents sharing with two people considered themselves *poor* or *very poor* at managing waste in an environmentally friendly way. Slightly more people in privately-owned housing rated themselves as *excellent* or *good* than occupants of social housing or privately-rented housing (Table 5.5). With regard to type of dwelling a third of all respondents living in an apartment rated themselves as *poor* or *very poor* in comparison to the vast majority of respondents living in detached (93 per cent) or semi-detached homes (89 per cent) who rated themselves as *good* or *excellent*.

Table 5.5: Cross-tabulation of housing tenure and self-rating as manager of household waste

	Excellent/Good %	Poor/Very Poor %
Privately owned housing	92	8
Social housing	89	11
Privately rented housing	76	24

The vast majority of respondents (87 per cent) who stated *civic spirit* was the reason they managed their waste in an environmentally-friendly way lived in privately owned homes. All respondents who felt that their partner or parents made them manage waste in an environmentally-friendly way lived with their family in privately owned houses. The interview data revealed that those living in rented houses were perceived as poor managers of waste and were perceived as having more problems using waste management facilities than those living in privately owned dwellings. The following extracts reveal the perceived mismanagement of waste by students and those in the rented sector:

> The rented houses are not kept that well, the landlords should be made keep them better than they are. They should be fined. Both the residents and the landlords should be responsible. Generally if you go around and you see a rented house not kept properly you know that the landlord for that house is not providing a proper environment for their tenants they are only into making money (GCI06 – 40/41).

> Yes it [three-bin system] is going great except for little problems here and there just with the students and rented houses, because they are not inclined to segregate the waste as it should be and it is only a bit of practice if you do it, it should come second nature to you if you practice it. It is probably that they don't stay in the houses very long (GCI09 – 4).

Of the respondents living in privately rented homes and who felt that they were poor or very poor at managing waste, one-third stated that they did not think about waste management, and one-third felt that there were not enough facilities locally. In contrast, 22 per cent of respondents who felt that they were poor managers of waste and lived in owner-occupied homes stated that they didn't think about managing waste, while only 4 per cent

felt that there were not enough facilities locally. Half of all respondents stating that economic incentives would persuade them to begin managing their waste in an environmentally-friendly manner who lived in social housing, while a third lived in privately rented housing and the remainder lived in privately owned housing. The majority of respondents living in detached or semi-detached homes suggested that more information would encourage them, while almost 60 per cent of those living in apartments stated that improved facility provision would persuade them to start managing their waste in an environmentally-friendly way. In the later stages of the research, several interviewees and participants in the household waste minimisation exercise living in apartments commented that their behaviour was influenced by their accommodation and more specifically practical variables such as lack of space and adequate separation facilities. For example, one household participating in the waste minimisation exercise remarked that the system of waste collection in their apartment block discouraged them and their neighbours from recycling and that this household would gladly participate in a recycling scheme should one be established in their apartment complex.

> In general I feel people don't do it [recycle] simply because of the inconvenience of it. It's not there laid out for them and people won't go out of their way to do it I think it's as simple as that ... when all it is, is a big empty bin then that's all people will do ... Definitely if there was schemes introduced into Dun Na Corribe we would use it without a doubt (H1W4).

Even in areas of Galway City where certain apartment complexes offered communal recycling for their tenants many difficulties occurred when several people shared waste management facilities. Barr (2002) in his research on household waste in Exeter found that people were more willing to recycle if they had larger houses. While this current research cannot conclusively support Barr's findings the type of dwelling and availability of space does appear to play a role in influencing attitudes and behaviours towards waste management. Space as a variable which influences waste management behaviour is examined along with other practical variables in Chapter 7.

5.4.5 Location

Individuals' attitudes towards waste management problems in Ireland also varied when location aspects were examined. The vast majority (95 per cent) in Salthill and Knocknacarra felt that there were waste problems in Ireland. In contrast, the locations with the highest percentage of respondents who felt that there were no waste problems in Ireland were Gort and the Aran Islands. It is interesting to note that when asked later in the questionnaire about the amount of information respondents had about waste management issues, the majority of respondents from Gort and the Aran Islands said they had too little information. In particular every respondent (100 per cent) from the Aran Islands asked for more information on what could be done within the household to improve waste management behaviour.

The questionnaire results raise interesting questions about respondents' association of their particular location with specific waste problems. For example in Ballybaan (an area with a relatively large proportion of social housing), 19 per cent felt that the largest area of concern was illegal dumping and 15 per cent of respondents from the settled area of Renmore felt that the threat of incineration was the largest problem; 26 per cent of respondents from Ballinasloe felt that the biggest problem was lack of availability of landfill. This last finding is perhaps unsurprising given that Ballinasloe is the site of the only landfill facility in operation in County Galway at the time of the survey. Indeed, several survey respondents cited the location of a landfill in Ballinasloe as a factor which influenced their waste management behaviour; 10 per cent of respondents in Ballinasloe identified closeness to the landfill site and having to pay for waste management services as important factors shaping their behaviour. In particular, several respondents in Ballinasloe felt that they should not have to pay waste charges as the landfill was in their area. Aspirations for compensation or concessions for living close to a landfill were issues that were also alluded to in these responses. However, the format of the questionnaire restricted respondents' embellishments on this point. A few interviewees from Ballinasloe reiterated this theme of compensation:

> Landfills are the right way to go. But Ballinasloe has had it [landfill] long enough and they have made the Ballinasloe dump a free for all you have Galway now for the last 18 months to two years and Roscommon coming

> in here it should have been kept for Ballinasloe and that's why it didn't last. It was the county dump and then the dump for the whole region. That is very unfair and a lot of people objected to it they are coming across their houses with big heavy trucks and the walls are just not able to take it. I was involved in the protest to stop it (GCOI05 – 7,8).

Results from the questionnaire data revealed how a shortage of waste management facilities was cited as a key barrier to improved waste management behaviour in certain locations. For example, in Ballybaan (which includes the student village of Glasan), 58 per cent of respondents sought an increase in facility provision. Overall, location was another factor within which a differential between respondents' rating as a manager of waste is apparent. Just over a quarter of respondents from West Connemara considered themselves as *poor*, followed by 18 per cent in Ballybaan, and 11 per cent in Ballinasloe. In comparison, all respondents in Knocknacarra and Renmore considered themselves *excellent* or *good* as managers of household waste, as did 97 per cent of respondents in Shantallow, 91 per cent in Salthill, 88 per cent in Gort and 85 per cent in the Aran Islands. However, these figures may relate to the previous findings on household tenure, as Knocknacarra and Renmore are predominantly owner-occupied areas in contrast to Shantallow and Salthill where there is a larger turnover of population. No single identifiable factor accounts for the lower self-rating in the Aran Islands and Gort areas. On a less place-specific finding, the role of location in influencing waste management behaviour emerged circuitously through discussions with interviewees about different waste management actions undertaken by individuals living in rural and urban areas. Several interviewees commented that poor or illegal waste management practices such as burning or dumping of waste were predominantly activities undertaken by individuals living in rural rather than urban areas. In addition, interviewees from the Aran Islands and Gort spoke of recent incidents of backyard burning in their locality and several interviewees from Galway City suggested that people who lived in rural parts felt that it was acceptable to burn rubbish in open areas.

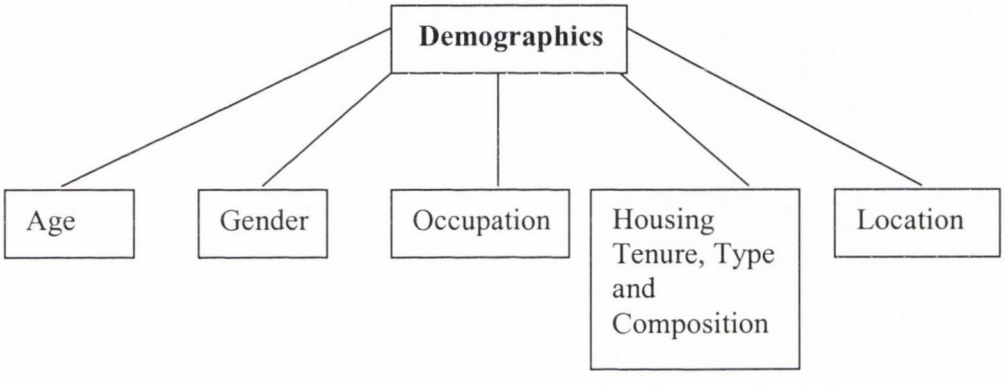
> In the countryside people might think 'we have loads of space around us here sure what harm'. They would burn furniture, a friend of mine burnt a lot of old furniture and I was surprised that no one complained. It wasn't that she had nowhere to go with it. She has flats in town and she

had a lot of stuff to burn ... Country people think the countryside is for dumping things like old mattresses and washing machines ... they should be heavily fined for that kind of thing (GCI05 – 49,51).

5.5 Conclusion

In summary, as outlined in Figure 5.6, these results reveal that waste management attitudes and behaviour vary when demographic variables are examined.

Figure 5.6: Summary of demographic variables



The results of this research revealed that both waste management attitudes and behaviour varied when the variable age was examined. Firstly, different generations exhibited different attitudes towards the problem of waste and identified different waste problems and diverse priorities for the future of Irish waste management policy. Secondly, with regard to waste behaviour, although facility provision and environmental concern were the most commonly cited reasons for action across all age categories, some reasons given were specific to certain age categories of respondents. When discussing reasons for inaction with regard to waste, the responses varied greatly with regard to age. Approximately half of all respondents who were aged over 60 felt there was nothing that would encourage them to act in a more environmentally-friendly way with regard to waste. Many remarks from the older generations would appear to support research conducted by Hines *et al.* (1987) which concluded that young people more likely to be involved in environmental behaviours and were proposed by older research participants as a decisive part of future positive environmental actions. However, many survey respondents commented that young people were a main source of waste problems, such as litter and fast-food waste disposal,

and perceived young people as having an ambivalent attitude towards waste management. Without significance testing, these findings cannot conclusively oppose Steel's (1996) conclusions that age did not have a significant influence on behaviour. However, the results supported Barr's findings that older age groups tend to reduce and minimise waste more. Further advancing Barr's results, the current findings can attempt to assert that the rationale behind this result is that individuals in older age groups had been raised in an era when recycling and minimising waste were practical, every-day, money-saving actions and not overtly ethical or environmental.

With regard to gender, previous research revealed that women were more likely to be more environmentally-friendly than men (Van Liere and Dunlap 1980). The results from Galway suggest that although more women than men were surveyed, levels of environmental concern did not differ significantly. However, a notable exception where male and female opinion differed was over the selection of the main waste priority for the country: women tended to be pro-recycling, whereas men were more inclined to select a technical solution to waste problems, such as incineration or landfill extension.

Occupation and housing tenure type and composition were other variables examined. The research found that students were the largest occupation that felt they were poor at managing waste and indeed students preformed the worst in the household waste exercise. Homemakers, professionals, and retired respondents were the categories where most respondents considered themselves as *excellent* or *good* at managing waste. Slightly more people in privately owned housing rated themselves as *excellent* or *good* than occupants of social housing or privately rented housing, and this perception that those in owner-occupied houses were better at managing waste was reiterated throughout the interview discussions. In particular a large proportion of those living in apartments rated themselves as *poor* at managing waste. This is perhaps a result of the lack of recycling facilities available in many apartment complexes, compared to facilities available to housing estates.

Finally, the results showed that waste management attitudes and actions varied with the respondent's location. In addition, diverse waste problems were identified specific to each location. The findings highlighted areas where waste management facilities were perceived as lacking.

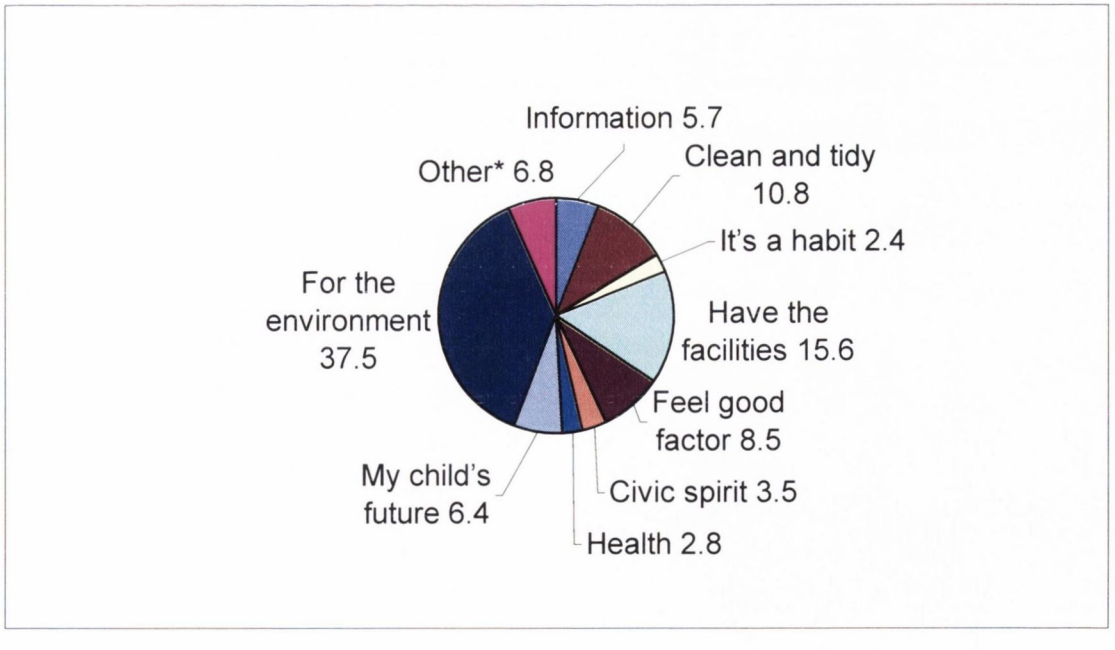
Overall, results derived from the extensive questionnaire study of respondents in Galway provided preliminary indications of the reasons behind householder action or inaction towards waste management. Supporting research conducted in the UK, the results concluded that people are more likely to undertake actions when a high level of support is provided resulting in little or no major change in lifestyle; where a door-to-door collection was available, higher rates of involvement in recycling were recorded. In line with research previously carried out in Ireland, the report identified a mismatch between householders' attitudes and behaviour towards waste. The questionnaire results found that respondents' attitudes towards waste management appeared to be contradictory: waste problems were recognised, but not perceived as being the householder's fault. However, in contrast to previous work, the current research has highlighted particular contextual factors influencing action or inaction with regard to the environment. In particular this chapter examined demographic factors including gender, age, occupation, location, household type and housing tenure, which to varying degrees, as the results illustrate, affect householders' attitudes and behaviour towards waste management.

The questionnaire identified ambiguities and apparent contradictions between values and actions in relation to waste. As discussed in the previous chapter, when examining attitudes and behaviours quantitative research methods are limited, and questionnaires lack the ability to thoroughly investigate the reasons which underlie attitudes and behaviour towards waste management. Throughout the analysis of the data described here, topics such as responsibility, public efficacy and the role of information were identified as requiring further clarification. These issues are discussed in the following chapters, which chiefly explore the results from the qualitative research phases of the project.

6.1 Introduction

This chapter identifies a number of factors which influence waste management attitudes and behaviour that, for the purposes of structuring this thesis, are identified as personal variables. Building on the information supplied from the quantitative survey, this chapter principally discusses the results from the qualitative stages of research. Two of the top three reasons identified by questionnaire respondents for managing waste in an environmentally-friendly manner can be characterised as personal variables. These were the existence of a concern for the environment and an aesthetic desire to keep places tidy, identified by 38 per cent and 11 per cent of respondents, respectively (See Figure 6.1).

Figure 6.1: Respondents' reasons for managing waste in an environmentally friendly manner*.



However, questionnaire respondents also identified other personal variables such as laziness and apathy to explain why they did not adopt pro-active waste management

* Other category includes factors chosen by less than 2% of the sample

techniques. Throughout the qualitative stages of research additional personal variables emerged as interviewees attempted to identify the various reasoning behind their behaviour. These variables, which include altruism, satisfaction/feel-good factors, personal experience, civic pride, and personal efficacy, will be discussed in this chapter.

6.2 'Just that kind of person'...

Of the questionnaire respondents, 38 per cent remarked that they managed their waste in an environmentally-friendly way for the 'sake of the environment'. When this idea was explored in greater depth during the qualitative research stage of the research project, several interviewees had difficulty articulating this motivation. These interviewees attributed their positive waste management actions to instinctive reactions to situations. Such positive positions tended to be justified by simple statements that the interviewee was 'just that kind of person'. Several interviewees associated their environmental concern with the way they were raised and in some cases where they were raised. The following extract adds credence to the previous finding which identified that individuals from rural areas perceive the environment differently than those from urban areas:

> The main reason I am so environmentally aware is because I was reared in the country and we never really thought about it but once you start thinking about it, it makes sense. We have to look after the environment (GCI06-14).

As discussed in Chapter 5, a number of older respondents commented how the practices of the past, with the exception of backyard burning, were very environmentally friendly. Amongst the older generation the motivation for activities such as growing ones own vegetables and recycling was viewed as being practical rather than overtly environmental or ethical.

> I suppose it's my upbringing .... we were taught to keep things tidy at home (GCI09-19).

6.3 Desire to be Tidy and Civic Pride

Of the questionnaire respondents, 11 per cent remarked that they managed their waste in an environmentally-friendly manner because it is 'horrible to see litter everywhere'. When this finding was followed up in the interviews, two distinct themes emerged: first, interviewees associated good waste management practices with hygiene and consequently they perceived the proper management of waste as a reflection of a properly managed clean home and second, interviewees mentioned the notion of civic spirit, an aesthetic desire of keeping tidy both local places and the countryside in general.

> By nature I would be a tidy person and I like things tidy and in order and especially regarding the environment. I don't like to see rubbish thrown around and also it [recycling] is creating a living for some people collecting it and sorting it out, not just Galway County Council, but there are some private companies in Galway doing it also. I hate to see the countryside littered (GCIO5 –13).

In addition the above extract highlights a broader topic related to waste, the theme of civic pride. Several interviewees acknowledged that the mismanagement of waste such as illegal dumping had a negative knock-on effect on the environment.

> Oh they're not catching enough of them. You see bags of rubbish on the road and it gives a bad image you know (GCOI08 – 89).

The view that environmental actions are motivated not just by concerns about hygiene or aesthetics but also about the stigma attached to living in an area that has suffered environmental degradation reflects the conclusions from research conducted in the UK by Burningham and Thrush (2003) on environmental inequality. Their research also observed that the reputation of an area perceived as being polluted or dirty often persists despite considerable attempts at regeneration and that this regularly has knock-on effects for attracting new businesses or residents. One interviewee from Ballinasloe alludes to this concept in the following extract:

> We need to clean up our act .... especially in a place like Ballinasloe where we have no construction or businesses in the town we would say well like it's not up to the local politicians if our town was more of an attractive town then surely people driving past would say yes that looks like a lovely little town and would want to come and stay here. So it's up to all the people in the town. ... Everyone should take responsibility for waste, householders especially (GCOI02 – 17, 21).

The final sentence in this last quotation suggests that householders felt a sense of community responsibility is important when attempting to tackle the problem of waste. Notions of civic duty and environmental citizenship overlap with discussions of responsibility (which is considered in greater depth in Chapter 8). Interviewees who considered themselves active managers of waste were often those people who were dynamic in other ways in their community. Such people mentioned the problem of trying to motivate their neighbours and local community to act positively in waste management and become involved in waste-minimisation activities. Respondents generally seemed resigned to the fact that some people were just more civic-minded than others, that it was a natural predisposition rather than socially-learned behaviour, and that as such nothing could persuade non-joiners to participate.

> Twice a year we do a general clean up but it is not well attended. People would take the weeds from outside their houses and help around generally. We have a great neighbour around the corner, because when they planted trees they should have put the membrane down first to stop the weeds but that man spent two days just digging up the weeds. I did the top of our own road and it took me two hours. Nobody helped me, but it looked lovely when it was finished. The woman next door would help me but she has a bad back and like everything it is always left to a few. If everyone did outside their own house it would be a great help. .... People are asked to come out to clean up on the day and they don't come. There is a retired gentleman and he keeps the piece near him done, people feel that if someone else is doing it why should I? we will leave it to them (GCI05 – 39,54).

Several distinct types of citizen are evident from the interviews: those who have no desire to participate in caring for any aspect of their own or their local environment, those who feel that someone else will look after it for them, those who believe that keeping their own patch clean is an achievement and feel no ownership over their local environment and those who participate a lot in environmental activities. The fact that some people do not take pride in their environment concerned some respondents who felt that the environment should be cared for by everybody:

> But streets in general are terrible. It really annoys me. It says a lot about how we keep ourselves you have to wonder if people throw things on the street because it is not their street. That's the attitude that some people have they wouldn't throw it on their own kitchen floor but they would on the street in the town (GCOI02 –15).

6.4 Altruism

The perception of the environment as a common good, and that some people feel a moral obligation to act in an environmentally-friendly manner as a consequence, was identified in the literature review (Schwarz 1995). Barr's (2002) research, however, on household waste concluded that overall waste management actions cannot be deemed altruistic. Although the current research did not specifically investigate Schwarz's Norm Activation Theory, remarks made by several interviewees would support the hypothesis that some individuals are motivated by altruism; they manage their waste in an environmentally-friendly manner out of concern for nature and the welfare of others. Indeed the following interviewee explicitly linked her waste management actions to her concern for nature.

> We care about the environment because if waste is left there would be rats. Well I go walking a lot down the new line and you look over the wall it annoys me to think that people are ruining the atmosphere. I know we live in a rural area but we have only been living here for four years before we lived in the city. I think Gort would be a rural area. I don't think it makes much difference where you live ... some people have come back from England and they would be used to separating all the

> rubbish and they still keep it up. A lot of our birds are back now ... it's wonderful to see it (GCOI09-23).

6.5 NIMBYism

As outlined in the review of public participation in waste management (Chapter 3), several commentators noted that increasing opposition to the siting of waste management infrastructure has largely been described as a manifestation of the NIMBY (Not In My Backyard) attitude. Several interviewees in the current research articulated their NIMBY standpoint at the prospect of having waste facilities such as landfill located in their locality for reasons including smell and reduction of house prices. Interestingly, all the comments relating to the NIMBY attitude and location of landfill sights came from respondents living in the city and not from respondents living beside the landfill.

> Like everyone else I would hate it in my back yard. Move it away from populated areas, but I'm not quite sure where you would put it (GCI05 – 27).

> Nobody wants landfill at their back door. But it will have to be disposed of it won't be easy. Politics play too much a part in it and in every part of life (GCI09 –34).

However, most interviewees who commented on objections to incinerators brought up the subject of NIMBY and commented that their opinions on incineration would likely be influenced by their proximity, or not, to any proposed development. One supporter of incineration stated that she was in favour of incineration but qualified this by stating 'but I'm not one of the people suffering because of toxins in the areas' (GCIO5 – 30), alluding to the fact that she might be less in favour of incineration if it was to be located beside her.

It was evident from the interviews that there was a lot of uncertainty surrounding the issue of incineration in Galway. Reasons for uncertainty about and opposition to the process include a lack of information on emissions, perceived risks to health and the environment and NIMBYism. These conceptual themes are considered in more depth later in this thesis. In summary, while the NIMBY attitude is traditionally perceived as a selfish motivation

for action, it is evident from the data gathered during the course of this research that opposition to the location of waste infrastructure is not purely based on self-interest but that wider social and political issues, such as general environmental concern, distrust in decision-makers and lack of consultation, play a role in creating concerns, and this echoes the sentiments expressed by several commentators reviewed in Chapter 3 (DeShalit 2000; Owens 2000).

6.6 Feel-Good Factor

The positive feeling that is gained from behaving in an environmentally-friendly way was proffered by 9% of respondents in the questionnaire survey (Question 9b) as a reason for managing their waste in an environmentally-friendly manner.

> That is where awareness comes from and people now love it and there is a feel-good factor because people feel that they are helping the environment and that they are making a difference. Rather than chastising people if you show them say where that bottle goes ... they might not be as likely to throw it out the next time (GCOI10 – 49).

Participants in the household waste minimisation exercise echoed this sentiment and many stated that they were motivated to continue undertaking the project because they enjoyed the feeling they obtained from the knowledge that they were positively contributing to protecting the environment. They felt empowered by the fact that their participation was contributing in a practical way to improving the environment.

> We like doing our bit [for the environment] ... it's no real hassle (H3W2).

Deriving personal satisfaction from an action contrasts with the previously discussed altruistic motives for improving waste management behaviour. The above extracts reiterate De Young (1986) and Barr's (2002) findings that personal satisfaction plays a role in influencing waste management behaviour.

6.7 Laziness and Apathy

While many interviewees discussed their personal reasons for undertaking positive waste management behaviour, others used the same personal-based arguments to explain why they did not adopt pro-active waste management techniques. Several interviewees talked about themselves (and others) being lazy, or about their genuine lack of interest in waste matters, as this student explains:

> Pure laziness and wanting to do things quickly it's not that it's [recycling facility] not easy to use, it is, it's just pure laziness. Don't know where the bottle banks are ….. Not really to be honest as students I can't see anyone doing it [recycling], if there was one [bottle bank] anywhere around here we would use it – I use them at home, mum would store bottles. I wouldn't see lads doing it at all, oh not at all, certainly not the lads I'm in college with … basically wouldn't be a cool thing to do and again pure laziness (GCI10 –5,6,7).

On a similar theme several respondents discussed a passiveness with regard to their waste management attitudes and behaviours. However, these respondents were less explicit about their lack of motivation for a pro-active stance.

> There will always be people who don't care, who won't even think [about waste]. A lot of apathy I suppose I would have a certain amount of apathy myself, I would be very conscientious but I would never be out there shouting or anything like that. (GCI06-38)

Literature (such as Selman 1996) suggests that many people are apathetic to environmental issues because they feel that the responsibility for action lies with other agents, a topic which is discussed in greater depth in the following chapters. In contrast to the findings of Blake, no interviewees in this research overtly commented, in defence of their inaction on waste management issues, that they were 'the wrong type of person to do certain types of environmental activities' (Blake 1999:266). However, several interviewees voiced the perception that it was not desirable to get involved with waste policy activities such as campaigning. The following extracts reveal how two interviewees associate the type of

person who participates in protests with extremism. An implicit disapproval of such participation is evident from these extracts[8].

> I don't like protests I think that no matter what people protest about there is a certain core that would go, troublemakers. I think that they should write to people like a silent protest. A lot of people leave it to everybody else (GCI07 –37).

> The incinerators today are more sophisticated than the things of the past you will have an element today that are opposed to everything no matter what. These people have a certain militancy they don't want to see any progress at all but there will have to be progress (GCI09 – 23).

During the discussions a number of interviewees raised the issue of a passive culture of participation in policy issues among Irish people and this is considered further in Chapter 8.

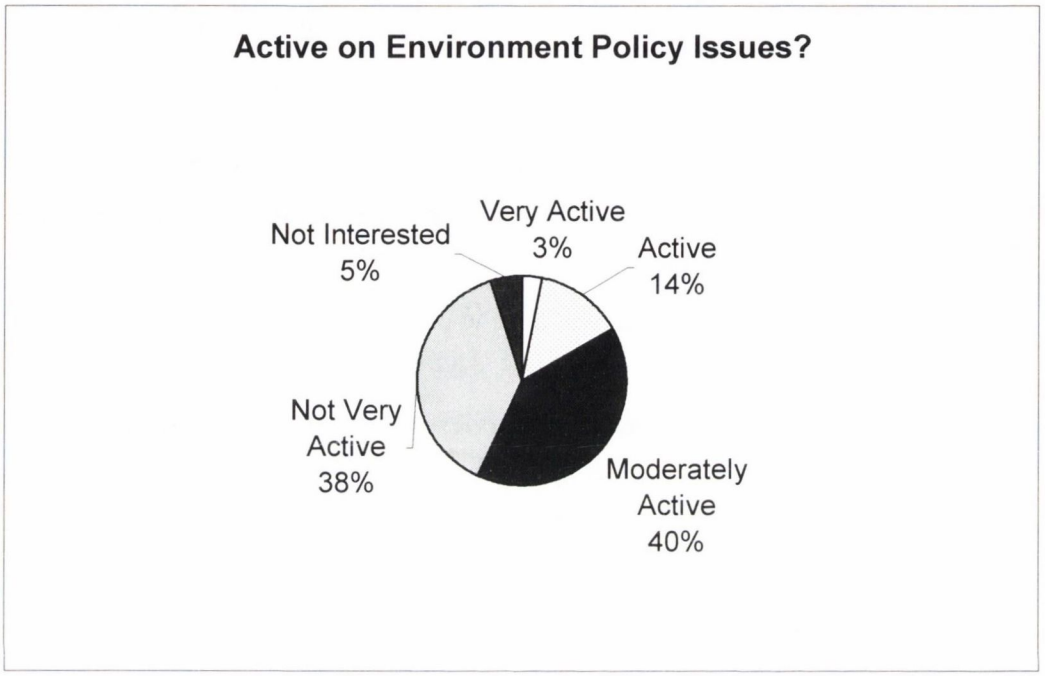
6.8 Personal Efficacy

Respondents identified personal efficacy as a variable which could both deter or encourage action. Two distinct themes emerged around the topic of personal efficacy: the belief that a person has firstly, the ability to act and secondly, that his/her action will have an effect. With regard to the first theme, several respondents alluded to the fact that they had not the ability to act, primarily because they felt there were too many practical barriers in their way (see next chapter). Regarding the latter theme, the fact that an individual feels that his/her waste management activity will have an effect on the overall waste management problem will influence the individual's degree of participation. Several interviewees remarked that waste problems were so big that one person could not tackle them alone. Academics such as Wynne (1996) suggest that inaction is frequently a function of lack of faith in the value of an individual's opinion in relation to environmental policy-making. Results from the questionnaire concur with Wynne as they indicate that a relationship

[8] It should be noted that the interviews were conducted after a period of media coverage of the waste charge controversy in Dublin, where several individuals including a local Fingal Councillor were sent to prison for protesting.

exists between individuals' actions and their perception of the public's role in environmental policy-making.

Figure 6.2: Self-assessment of level of involvement in issues relating to environmental policy (Question 20)



As illustrated in Figure 6.2, 40 per cent (195 respondents) of respondents described themselves as *moderately active* on environmental policy issues while almost as many (38 per cent/180 respondents) considered themselves *not very active*. 60 per cent (13 respondents) of respondents who stated that they were not interested in environmental policy felt that the public's role in environmental policy-making was of little or no value. Of the respondents who felt they were very active (12 respondents), 42 per cent (5 respondents) thought that the public's role was very valuable and three quarters of the respondents who were active on environmental policy issues felt that the public's role was valuable or very valuable (See Figure 6.3).

Figure 6.3: Cross tabulation of respondent's self-assessments of level of involvement in issues relating to environmental policy and respondents' perceptions of public's role on environmental policy (Questions 19 and 20)

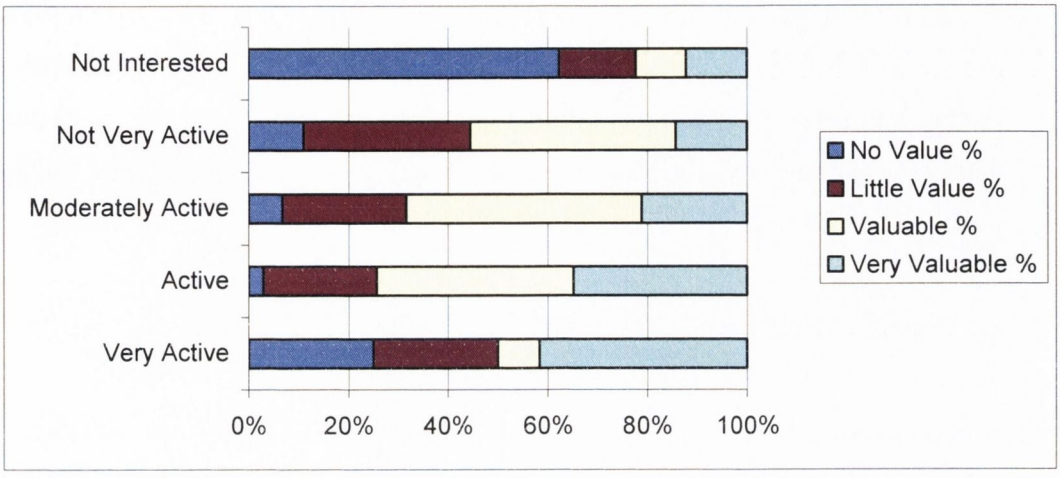
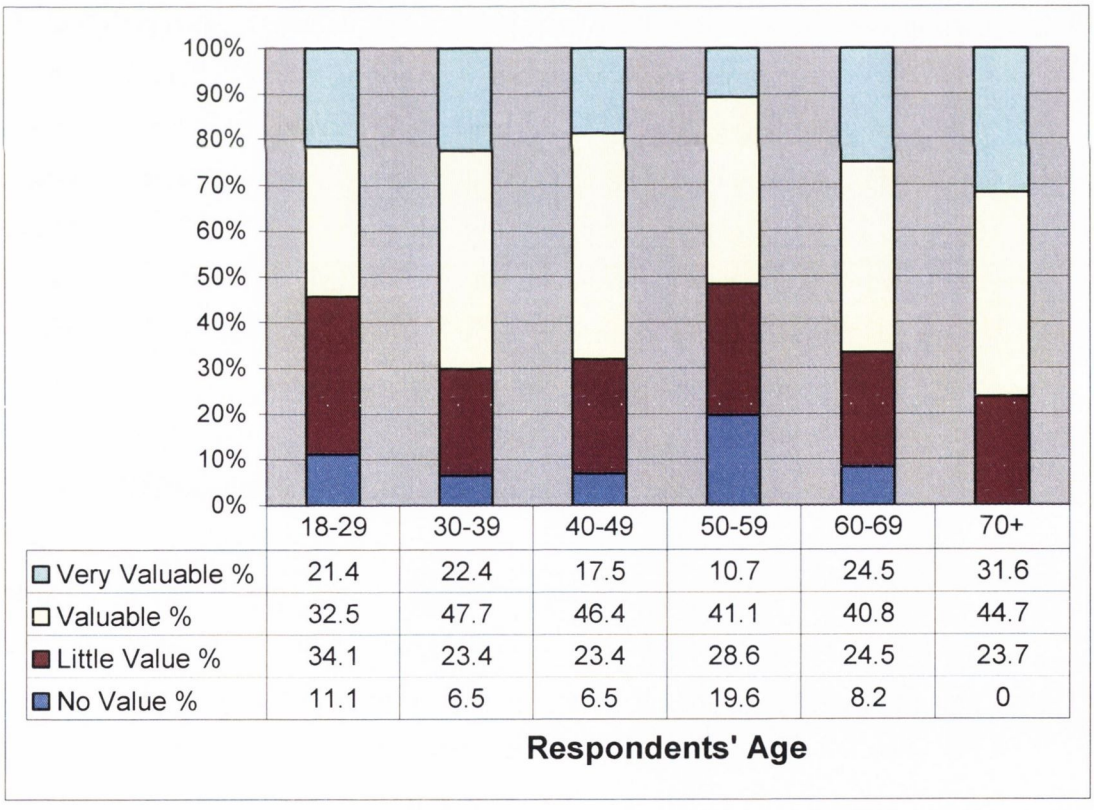


Figure 6.4: Cross tabulation of age and respondents' perceptions of public's role on environmental policy (Questions 19 and 20)



	18-29	30-39	40-49	50-59	60-69	70+
Very Valuable %	21.4	22.4	17.5	10.7	24.5	31.6
Valuable %	32.5	47.7	46.4	41.1	40.8	44.7
Little Value %	34.1	23.4	23.4	28.6	24.5	23.7
No Value %	11.1	6.5	6.5	19.6	8.2	0

Respondents' Age

The overlap between the various variables that affect waste management behaviour is evident yet again as these figures vary when demographic variables such as age are examined (see Figure 6.4). Almost half of all the respondents aged between 18 and 29 felt that the public's influence on environmental policy was of little or no value; 31 per cent

claimed that they were not very active on environmental policy issues. In contrast, 70 per cent of those aged between 30 and 39 felt that the public's influence on environmental policy was valuable or very valuable. Of the respondents aged over 70, 76 per cent felt that the public role was valuable or very valuable. However, as discussed earlier, over half (56 per cent) of this age group considered themselves not very active on environmental policy issues, with several respondents offering qualifiers such as 'I leave that up to the younger ones around here' or 'I'm not active at all any more', suggesting that environmental policy-matters should be the prerogative of those in a more youthful age bracket.

6.9 Previous Experience

Despite the dearth of empirical research linking the role of experience with environmental behaviour, the qualitative findings from this research indicate that practical experience of a waste management activity, experience of a waste technology and other life experiences, such as work or hobbies, have the potential to influence directly an individual's action or inaction with regard to waste. In particular the influence of experience of a waste management activity on waste behaviour emerged as a key finding from the household waste minimisation exercise. All of the households participated in the separation of waste, they recycled and composted (where available) and recorded a notable reduction in waste. However, the household that had previous experience of recycling (Household 2) found the exercise easier to conduct and recorded the least problems in comparison to the rest of the households throughout the duration of the project. The exercise involved little significant change in waste management behaviour for this household.

> We're used to doing it so it hasn't been any trouble, not at all (H2W3).

In contrast, throughout the exercise, the households without previous experience of separating waste each recorded various difficulties with their waste minimisation activities. Some participants regarded these problems as deterrents to improved waste management behaviour. Indeed, the logical idea that waste management practices, such as recycling, become simpler with experience emerged as a popular topic for discussion throughout the interviews. At the time during which the interviews were conducted over 90 per cent of all households within the jurisdiction of Galway City Council were serviced by a three-bin waste collection system. Most interviewees stated that they initially had some concerns

about the complexity of the system in comparison to previous collection regimes, but that in practice the system was straightforward and worked well. One interviewee noted that it had become second nature to her to separate her waste:

> It gets easier, the more you do it. I don't even notice that we are doing it here but if you go to someone else's house you notice that they are not doing it (GCI08 – 8).

These experiences are in line with the research conducted by Taylor and Todd (1995), which concluded that direct experience of positive behaviour increased participation in that behaviour. In contrast Barr's (2002) research concluded that experience had no effect on recycling behaviour, and only a moderate effect upon re-use behaviour. Paralleling Barr's findings, the relationship between experience and waste minimisation and re-use behaviour also emerged as a finding of the household waste minimisation exercise. Even though overall the participating households were relatively successful at separating their waste and recycling, the elements of the exercise that dealt specifically with the prevention and minimisation of waste, such as re-using paper or clothes, were not as successful. The participants who re-used items or tried to minimise waste over the duration of the exercise generally re-used or minimised waste all the time. For example only one student in Household 3 continued to minimise, re-use, and separate waste throughout the entire four-week exercise and she remarked that re-using items and general management of waste was something she had always done and would always do. In a similar fashion, several interviewees remarked that their involvement in a variety of waste actions was a result of their previous experience of that activity. For example, although the backyard burning of waste is an illegal activity there were a number of interviewees who felt backyard burning was an acceptable form of waste disposal because it was an established practice of the past:

> The other thing [backyard burning] I'm not too fussy about, and I don't know why they are so fussy about it and I know some people are and I don't know why because years and years ago we just burned everything in our fire in the range and I think nature is able to handle the natural smoke that goes up you know? I can't understand how they won't and don't allow that because all my years as a child we burned everything out in the garden…(GCI01 – 28,69).

The above extract alludes to other contextual themes such as perception of risk and scientific knowledge which will be discussed further in Chapter 8. On a similar theme experience of waste management disposal options or technologies influenced respondents' attitudes and behaviours towards waste management, such as involvement in protests against siting of waste disposal infrastructure, both positively and negatively. For example, several interviewees cited their experience of poor waste management and poor management of landfills in particular as a rationale for objecting to the location of such infrastructure.[9] In contrast, while interviewees were generally uncertain about incineration as a waste management option, interviewees who had experienced the benefits of incineration while travelling abroad held the technology in high regard:

> I'm not against incineration. I was in Bern and it was like a dream out there, they generate heat and electricity for all the county councils and the public buildings and the hospitals. That was their source of energy and people had no problem with it (GC109 – 23).

Other factors, which interviewees identified as shaping waste management attitudes and behaviour and, for the purposes of this research, are classed as personal variables, involved respondents' work and hobbies or *life experiences*. Several interviewees commented that their improved waste management behaviour was a result of either work, in a hospital or on a farm or their hobbies, fishing or scuba diving, through which they were provided with a first-hand insight into the results of bad waste management:

> I would always act on these kind of things [environmental issues] because of my [agricultural] training. But apart from my training I saw a lot of things being done on farms and places not being done properly (GCOI03 – 60).

> I am a diver that is a huge motivation [to recycle], there is a lot of crap being thrown into the sea. Plus it's [recycling] not a big problem I prefer to do it than not generally I will buy recycled products when you see

[9] It should be noted that other themes such as lack of trust in regulatory bodies and perceptions of risk emerge in later discussions to develop the rationale behind such objections.

> what's happening the ozone layer and the environment it would make you do it. Some people make it out to be a big deal but it's not. It causes absolutely no inconvenience at all (GCI08 – 26).

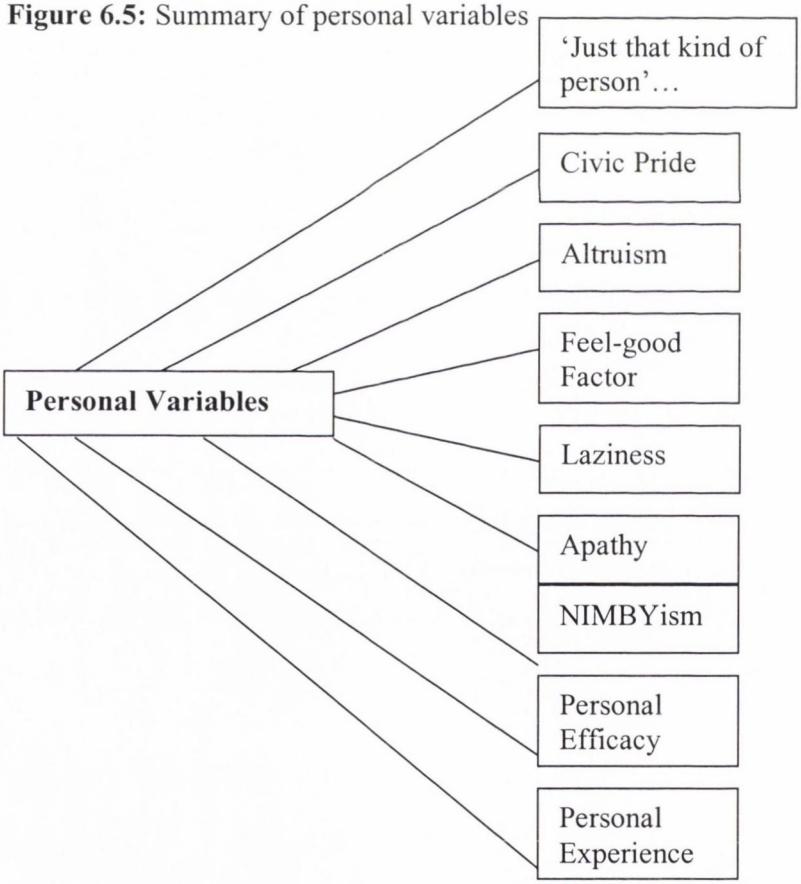
The interrelated nature of the variables that influence waste management attitudes and actions is apparent from this last abstract; in addition to a personal reason for recycling this interviewee perceives the act itself as convenient. Convenience and other practical reasons for improving waste management actions will be discussed in the following chapter.

6.10 Conclusion – Personal Variables

To conclude, the data indicate that a range of personal experiences can encourage or deter waste management behaviour and Figure 6.5 depicts the range of variables discussed in this chapter. All of the variables outlined in previous research investigating the impact of personal variables on environmental behaviour (as discussed in Chapter 3) are evident in the results presented in this chapter. However, the extent to which each personal factor influences waste management behaviour varies. For example, overall, almost half of respondents in the questionnaire identified two personal reasons – 'concern for the environment', and that it was 'horrible to see litter everywhere' – as prime reasons to manage their waste in an environmentally-friendly manner. However, when the qualitative research stages were undertaken a range of additional factors were identified as significant in shaping behaviour. (Unfortunately due to the nature of qualitative data it is not possible to statistically conclude how significant each variable was in shaping waste management behaviour). In contrast to Barr's (2002) conclusions from research on household waste management in the UK, the findings from the qualitative stages of this research support the hypothesis that some individuals are motivated by altruism; they manage their waste in an environmentally-friendly manner out of concern for nature and the welfare of others. Reflecting the findings of De Young (1986) and Barr (2002) several respondents cited a feel-good factor, or the satisfaction they derived from performing the waste management action as reasons for action. In contrast, laziness and apathy emerged as variables proffered in defence of inaction with regard to waste management. Overall, senses of civic and individual responsibility underlie many of these personal variables and this issue is further developed in Chapter 8.

As identified in Chapter 3 little empirical research has been conducted linking the role of experience with environmental behaviour. However the qualitative findings from this research indicate that practical experience of a waste management activity, experience of a waste technology and other life experiences, such as work or hobbies, can directly influence an individual's action or inaction with regard to waste. In particular the results discussed in this chapter revealed that *previous experience* was viewed as a factor which shaped re-using and minimising behaviour. In addition, the findings overall, and in particular the results derived from the household waste minimisation exercise, appear to support Taylor and Todd's (1995) conclusions that households with wider exposure to recycling and composting find these activities less complex to perform and as a result are more likely to participate in them. At a policy level, previous experience appeared to influence either opposition or support for waste management infrastructure.

Figure 6.5: Summary of personal variables



With regard to personal efficacy, the results from the questionnaire data concur with Wynne (1996) as they indicate that a relationship exists between individuals' actions and their perception of the public's role in environmental policy-making. These findings have serious implications for policy-makers in the waste management field. Fundamentally, they indicate that raising environmental awareness and providing structural facilities may be of little consequence if broader themes such as public's perception of efficacy are not addressed. This theme is considered in Chapter 8.

It is evident from these results that personal variables are not straightforward, they vary when demographic variables are examined, and are bound up with broader discourses. For example, echoing the sentiments expressed by researchers such as De Shalit (2000) and Owens (2000), the findings from this research demonstrate that opposition to the location of waste infrastructure is not based only on self-interest but that wider social and political issues, such as general environmental concern, distrust in decision-makers and lack of consultation, are influential in creating concerns. The following chapters examine a range of practical and contextual variables that this research has highlighted as influential in the study of attitude and behaviour towards waste management.

Chapter 7: Results III – Practical Variables

7.1 Introduction

From the initial baseline results respondents identified a number of practical variables as significant in shaping waste management attitudes and behaviour. This chapter discusses the practical variables that emerged from all the stages of the research. The chapter opens with a discussion of the role of facilities in shaping waste management attitudes and behaviour. It then turns to examine how practical variables such as the availability of transport, space, time and money influence public attitudes and behaviour towards waste. Information is posited by researchers such as Filho (1999) as a significant factor in raising awareness about environmental issues and shaping environmental behaviour. This chapter examines the issues surrounding the provision of information, including what type of information is required, how information should be provided and who should provide it. Finally, the chapter examines the role of economic and administrative variables, such as charging for waste, litter fines and enforcement of waste regulations.

7.2 Facilities

The issue of waste management facilities emerged from both the quantitative and qualitative results as a major factor that influenced waste management behaviour. Indeed, when the questionnaire respondents were asked to provide the main waste priorities faced by the country in the coming years, 46 per cent of all respondents chose *Increase recycling facilities.*[10] The presence of facilities appears as a reason for action and lack of facilities as grounds for inaction with regard to waste management. Overall, a quarter of all questionnaire respondents from Galway, who rated themselves as *poor* or *very poor* at managing waste, felt that better facilities, including facilities located closer to their homes, would encourage them to do more to manage their household waste in an environmentally-friendly way. However, the majority of respondents' replies to the questionnaire survey

[10] Respondents were asked to select their priority from a list of 8 options; see question 14 (a) of questionnaire (Appendix 1).

pointed to the prevalence of a reactive rather than pro-active perspective on managing household waste. For example, respondents felt that they would do more if facilities were provided, but there is no evidence to suggest that, prior to their involvement in the research, the respondents in this survey actively sought more facilities through, for example, voicing their needs to local authority representatives.

In line with the remarks provided by the older respondents, students as young as 8 and 9, participating in the focus groups, suggested an increase in the provision of facilities such as litterbins and recycling centres as one solution to the waste problems in Ireland, although it was also recognised that simply providing facilities did not necessarily mean that people would use them.

> Cathy: People drop litter because they don't want to put it in their pockets and bring it home because they are too lazy.
> Colin: They can't be bothered to walk to the bin.
> (Kinvara, 8/9 year olds, Mixed)

In addition to the provision of waste management facilities the accessibility of such facilities surfaced as an important factor in determining whether individuals undertook certain waste management activities. In particular an increase in the number and convenient location of bottle banks was suggested as a way of increasing recycling behaviour. Several respondents commented that the bottle banks were too far away, especially for those without car access. Others suggested that every housing estate should have a bottle bank facility.

> The bottle bank is a little bit far away, I think that in each housing estate that there should be a bottle bank you know personally because if you don't have a car its hard to get to (GCI01 –8).

As discussed in the previous chapter the results from the questionnaire, supporting the findings of research conducted by Blake (1999) in the UK and Steel (1996) in the US, reveal that where a door-to-door collection was available higher rates of involvement in composting and recycling were apparent. Data from the household waste minimisation exercise further supported these findings as separation of waste decreased and eventually

discontinued in two of the households when the collection of the recyclables from the doorstep ceased. The majority of the questionnaire respondents living in the Galway City area, who had a three-bin separation system, felt that it was easy to separate and recycle waste as the bins were collected from their doorstep. As such, recycling was perceived as both a practical and viable activity to them. In contrast to the city area of Galway waste management collection services vary throughout the area administered by Galway County Council. Perhaps unsurprisingly, levels of satisfaction in the latter also varied according to the type of service being provided. In general the more recycling facilities available, both door-to-door and off-site (through bring centres and civic amenity sites), the more satisfied the respondents and interviewees were and the more active they became in relation to positive waste management practices:

> But now we're more satisfied. We have to put paper in one bin and plastic and tins in the other one. And I am composting and I have found a huge reduction … we used to put out a full bin every week, but now we are putting out three quarters of a bin every two weeks. So it's a huge reduction. The cost hasn't increased. It is a private company from Ballinasloe that we use. Collection times are every second Wednesday and we are so into the system now we are having no problems and everything is fine (GCOI06 – 4).

However, these door-to-door collections had to be frequent, regular, easy to use and appropriate to housing conditions. This finding matches the research conclusions of other work conducted in the UK which found that people were most willing and most likely to change their behaviour in relation to any environmental practice if the change required was simple and easy to adopt (Blake, 1999). Collections that come direct to the doorsteps of householders make the process of recycling far easier and are more likely to produce desired behaviour than expecting people to make significant lifestyle changes in order to modify their waste management practices. Hence, these findings are in line with Barr's (2002) conclusions that access to kerbside recycling was critical when predicting recycling behaviour.

Two other issues emerged from the qualitative research data on the topic of facilities, which illustrate additional dimensions that reveal how this practical variable influences the

public's waste management attitudes and behaviours. Firstly, several interviewees raised the issue of the lack of consistency in the standards of waste facilities and services. One participant in the household waste minimisation exercise suggested that the lack of conformity in recycling schemes across Galway City leads to an ambivalent attitude amongst the public:

> I know people in a lot of places now around Galway are separating paper and plastics, but then when you move into a new neighbourhood and all they're doing is lumping the rubbish all in together you wonder just what are they doing? (H1W4)

Several interviewees remarked how this lack of standardisation can be disconcerting for members of the public who question the value of their recycling if their neighbours are not undertaking the same activities. Their remarks evoke notions of fairness and personal efficacy, discourses that are considered in other sections in this thesis. Secondly, the mismanagement of waste facilities was identified as a barrier to improved waste management behaviour by a number of interviewees. Most dissatisfied comments were directed towards bottle banks and how frequently they were emptied. A couple of interviewees remarked that they had on at least one occasion attempted to recycle glass in a bottle bank only to find it full and they ended up illegally discarding their glass waste near the bottle bank site or bringing it home to dispose of in the regular un-separated waste bin. The following extracts from the focus group discussions support these remarks, as students discuss how facilities which are not organised well, such as over-flowing litter bins, can discourage improved waste management behaviour:

> Maeve: The other day I was looking for somewhere to put some tin foil and it [the bin] was packed. Then people will get fed up.

> Rachel: We don't like going to the bottle bank because there is a disgusting smell. And it is kinda getting a bit rough after six o'clock. (Galway City 16/17 year olds, Girls)

7.3 Transport

Many survey respondents, interviewees, and participants in the household waste minimisation exercise proffered lack of private transport as a reason for inaction with regard to waste management and in particular the perceived inaccessibility of waste management facilities such as bottle banks or civic amenity sites.

> Well I could improve [my behaviour if I had] a bottle bin closer to here because I have no transport, and if I was to walk to the nearest bottle bank with a big bag of bottles it would be half a mile and through town. There is a big population here (GCOI04 –14).

The accessibility of facilities, particularly for members of the population who do not own their own transport, was a topic which was reiterated in the focus group discussions with students.

> Karen: I live in an apartment in Eyre Square and we can't recycle. We just have to put the stuff in white bags. It is too far to walk down. So we just don't recycle. It's too much bother.
> (Galway City, 16/17 year olds, girls)

Interestingly, while research such as the study conducted by Blake (1999) in the UK cites lack of public transport provision as a barrier to improved waste management behaviour, no respondent in the current research overtly linked the provision of public transport with improvements in individual waste management behaviour. From the data gathered during the course of this research it appears that the lack of private transport, often coupled with the inaccessible location of many facilities such as bottle banks, creates a perception of added inconvenience and makes activities such as recycling glass more strenuous to undertake. On the topic of convenience, this research concluded that other practical considerations which influence attitudes and behaviour towards waste management are: availability of time and space.

7.4 Time

Several interviewees discussed how some waste management facilities or services were perceived as complicated and, consequently, associated activities such as recycling or composting were deemed too complex and time-consuming to undertake. One interviewee who was dissatisfied with the three-bin service remarked that there was an *awful lot to do* (GC103 – 4). As discussed in the last chapter experience of an action can reduce the perceived complexity of the activity and increase participation in that behaviour. The questionnaire results reveal that the principal barrier to managing waste in an environmentally-friendly manner, identified by professionals, was a lack of time. It is perhaps surprising that during the focus group discussions students, who are generally perceived as having more free time than professionals, expressed similar sentiments:

> Amy: We used to do the bin thing but it's a lot of bother you have to remove the labels and stuff we don't do it it's too much bother we just use the bottle banks ok. We just use the black bin. The other bins are empty. Now we just throw them out now at the start we used to do it but it takes too much time to do it.
>
> Karen: We might go back [recycling] if they made it easier. But I don't know how to do that.
> (Galway City, 16/17 year olds, girls)

An unambiguous desire for convenience with regard to waste management emerges in these extracts. Notions of convenience and perception of time are intrinsically linked. Indeed, a perceived lack of time or *time pressure* has been identified by Phillips (2000: 185) as a key constraint on environmental and political action "imposed by the everyday world". An implicit finding from the qualitative research conducted indicates that an individual's perception of time available to him/her may be related to priorities, and suggests that the way in which an individual prioritises waste management activities, such as recycling, among other day-to-day activities or commitments, will shape that person's waste management behaviour.

7.5 Space

Similarly, the issues of space to store recyclable goods and facilitate composters may be related to priorities. In practice, space was an issue which dominated several discussions with participants in the household waste minimisation exercise, as several households were unable to undertake composting activities due to space restrictions. Three of the participating households lived in apartments/townhouses without private access to green spaces. Another issue raised during the questionnaire and demonstrated through the waste minimisation exercise was the lack of space for a number of separation bins in small kitchens especially in apartments. In Galway City a lack of space for the three-bin waste separation system caused problems for one interviewee and this coloured the person's perception of the whole waste service:

> Yes, a lot of people don't like them [the three bins] at all but we have no choice we have to use them ... We have to do three different things ... Yes [we bring the bins] through the house once every week (GC103 – 8).

Living in a terraced house with no side passage to bring the waste bins to the front of the house for collection caused similar problems for respondents in the wider Galway region. The following respondent from Galway County is evidently unhappy about having to bring the bins through the house:

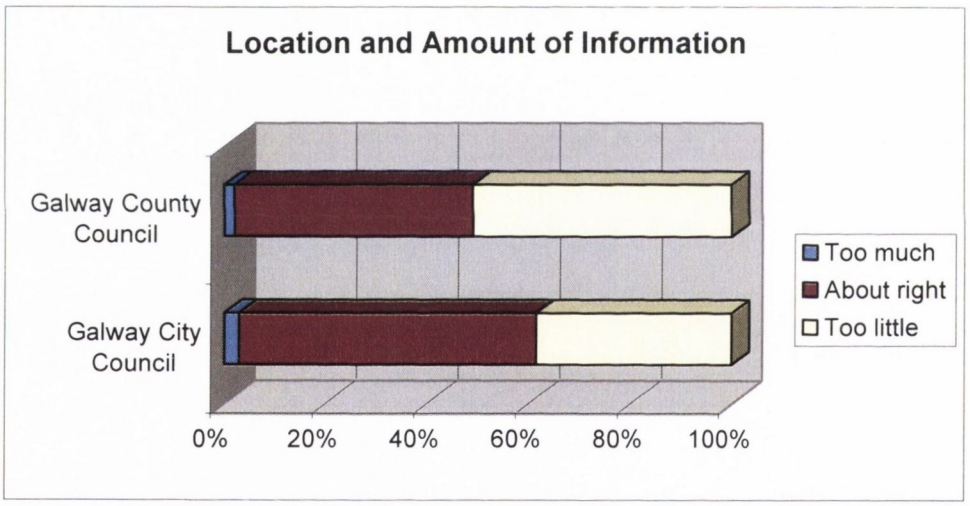
> Over there they have no side passage and they have to leave the bins out the front. We have to bring it out though the house ... The bin is so big we have only a narrow hall. They never took that into consideration when they were making the bins (GCOI05 – 13).

The final sentence in the quotation is interesting because it highlights the importance of tailoring waste collection systems to the particular circumstances of householders. Logically the issue of space is related to accommodation size but, as Barr *et al.* (2003) observe, a perceptional issue inevitably exists in conjunction with a structural issue. Householders may not prioritise activities such as recycling very highly and as a result they may not prioritise space in their kitchen or living area for the storage of recyclable goods (Barr *et al.* 2003).

7.6 Information

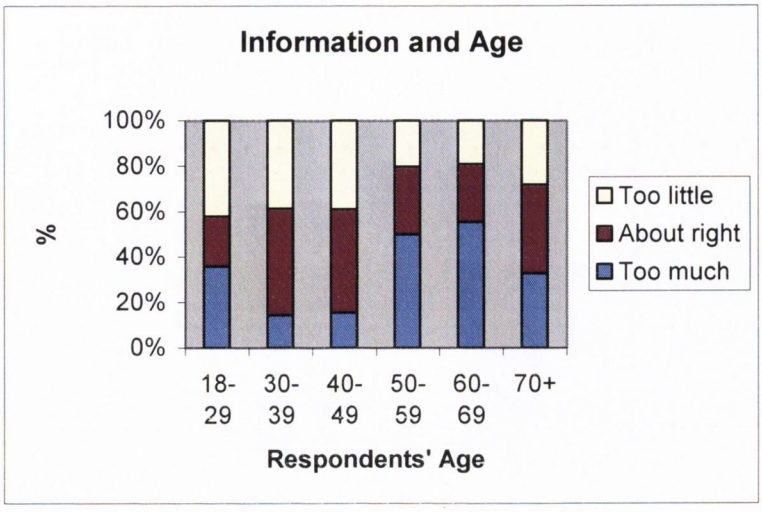
Just under a quarter of all questionnaire respondents cited education and information as key factors likely to lead to increased action. However, the availability and indeed the demand for information varied across locations (see Figure 7.1). Within the area administered by Galway City Council, 59 per cent of respondents felt they had the right amount of information, while 39 per cent felt that they had too little. Within the administrative boundaries of Galway County Council, 51 per cent of respondents felt that they did not have enough information, 47 per cent felt that they had about the right amount and 2 per cent felt they had too much information.

Figure 7.1: Respondents' location and perceptions of information provision



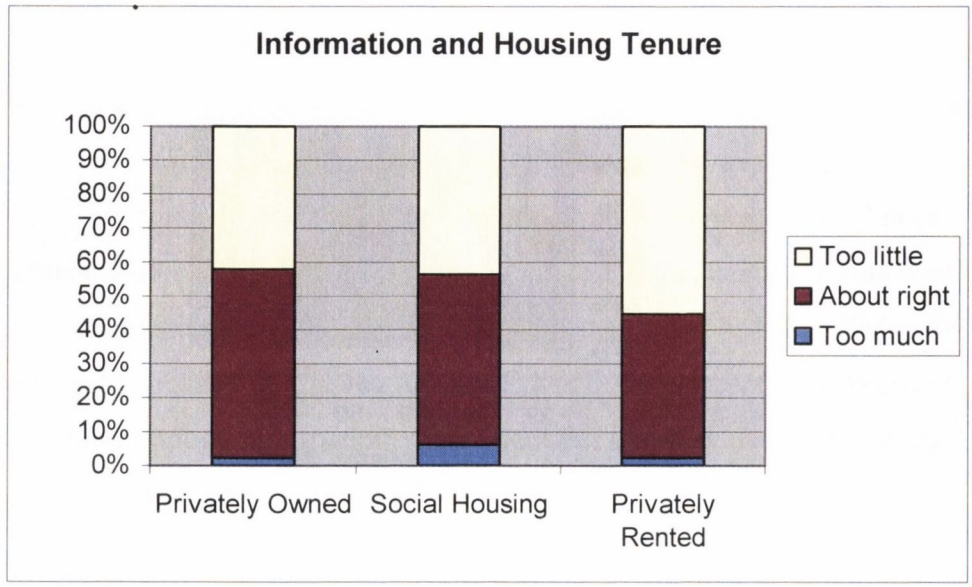
These statistics also vary when demographics such as age, occupation, or housing type are examined. For example, 60 per cent of respondents aged between 18 and 29 and 41 per cent of respondents in the age categories 30-39 and 40-49 felt there was too little information available (see Figure 7.2).

Figure 7.2: Respondents' age and perceptions of information provision



The majority of respondents in the age group 18-29 felt that they have an inadequate amount of information and this may in part reflect what Knightsbridge-Randall (1999) refers to as the information generation. Changes in education during the 1980s and 1990s may have resulted in an increased environmental awareness in the age group 18-29, when compared to older aged categories, and a desire for, and a greater appreciation of, the environmental information that is actually available. Homemakers and students were the two highest occupation categories in which respondents felt they had too little information about waste. Of the respondents living in privately rented homes, 55 per cent felt they had too little information, while 56 per cent and 50 per cent of privately owned housing and social housing respectively felt they had enough information (see Figure 7.3). Three quarters of all respondents living in apartments felt they had too little information.

Figure 7.3: Housing tenure of respondents and perceptions of information provision



Although information was highlighted in the questionnaires as a significant factor in shaping waste management behaviour, it was not clear from the closed questions what kind of information was required, how that information should be provided and who should provide it. The interviews were used to further clarify the influence, both potential and real, of information in waste management. Reiterating the questionnaire findings, interviewees from a range of different backgrounds and locations in the Galway county area felt that basic practical information was not provided, in particular about the location and accessibility of off-site recycling facilities:

> Generally there is not enough information [about waste initiatives]. It has to come into local areas. I am on the parents committee in school and if it was brought up even once a year that would be enough. There doesn't seem to be much that can be done, but to mention it. Talk to people about it … If we had flyers, I would read them. I know some people wouldn't read them, but I would (GCOI02 – 34).

Interviewees were not optimistic that people would make the effort themselves to find information, particularly if it was not readily available. Indeed this supports the findings of an EU survey on European citizens and the environment (European Commission 1999), which reported that six out of ten Europeans acknowledge that they make no personal

effort to find out more about the environment. The same report identified Ireland, along with Greece, Spain, Portugal and the UK as countries whose citizens say they make no effort to get information. It was clear from the interviewees in the county area that they felt the local authority should be doing more to provide suitable information about waste management. In contrast to the views on Galway County Council, many interviewees praised Galway City Council for its provision of information. Respondents felt that the local authority was good at keeping householders informed of the changes in waste management schemes. On the whole interviewees in the city region appeared satisfied with the three-bin waste service largely because they had been given sufficient information about why the service was being introduced and on what was required of them. While it was a common theme of interviews for respondents to call for regular and updated information on waste services, a number of respondents also wanted to know more about the final destination of waste and recyclables:

> I presume that they [the local authority] are doing what they say they are doing. So I hope they are doing it right. It would be a good idea to show people where the recycling is going and what it ends up as, and it might make more people do it (GCI06 – 57).

In a similar vein, several interviewees from the Galway county area felt that the lack of information about where the waste, and the revenue from the waste charges, was going led to a lack of faith in the whole waste management system:

> People have said to me 'sure what is the point of recycling, sure isn't it only going up to the dump anyhow', if they had the information about where it was going they would be much better about it. The fact that they know it's not going to the dump is a big inhibiting factor. Psychologically they are not tuned in then and they won't bother their ass doing it … see people are very sceptical and they are not well informed and they hold back, but if they get the information and it is explained to them, like in schools, I think they would be ok with that (GCOI03 – 6, 37).

A lack of trust in the information provider, the local authority, is explicit in the extract above, and this issue cropped up several times during the course of the interviews. It is suggested in the above remarks that public cynicism could be answered and waste management behaviour improved, at least in part, by the provision of appropriate information. This in turn raises the question of trustworthy information and sources of such information. As the results of the aforementioned EU survey on the environment (European Commission 1999) conclude since the previous survey in 1995 people have become more distrustful about a large number of information sources currently available. The report found that only one-third of the citizens surveyed trust scientists, just under a third trust consumer organisations, while just over a third trust the media (European Commission 1999). In addition to recognising a need for legitimate information, interviewees established that information which was relevant and accessible to a broad range of people was essential to ensure waste management services ran smoothly.

> From what I hear people seem to be very confused at times. Just keep it very simple ... it needs to be more specific for the particular area that you want people to do it in. For single people that are working you will have to tell them differently than the person that is at home all day (GCOI07 – 46).

Reiterating the questionnaire findings, several interviewees suggested that the provision of appropriate and legitimate information could lead to greater public participation in waste management initiatives and could improve methods of communication between the public and other waste management actors. Academics such as Filho (1999) posit that the basis for public involvement in environmental issues is the provision of information.

> The Tidy Towns and things like that if that was expanded, because while I've lived here no one has ever sent flyers to me and I would be interested in taking part in things like that. You only ever hear about it after it happens. I know you have to put yourself out there, but if there were general notices that would be good and it would be easier to get involved (GCOI02 –16).

Indeed, methods of communicating information came under scrutiny during discussions with various participants in the research. Interviewees suggested that information should be targeted through a range of different media including print, television, even face-to-face meetings:

> I'd say the media is a very good way to do it [disseminate information about waste]. People wouldn't go to meetings because it would not be stimulating enough. If they made it more stimulating people would go. People will go to things because it is relevant to them. At the start you need to bombard people with information because they won't take up a thing and read. So you need to use every media and be very clever about it. Total saturation is the only way because you are taking it in without realising you are taking it in. Every media should be used and maybe house calls (GCOI10 – 24, 51).

However, across the whole case-study region only one respondent out of the 500 individuals who participated in the questionnaire survey, a student, mentioned *TV advertising* as a reason to act positively for the environment. This is surprising given that advertising is often prioritised by Government as a key form for increasing environmental awareness through media campaigns (see Davies 2002).[11] Students in the focus groups obtained information about waste from a variety of sources, including teachers, parents and the media. The interpretation of this information raised some interesting discussions. For example, Wayne, a young student from Kinvara National School, Galway, was of the opinion that the *Race Against Waste* campaign, a campaign to highlight reduction, re-use and recycling of waste was actually a call for more landfills as opposed to a reduction:

> Connor – There is a new ad on the telly about litter.
> Alice – It tells us that we are cruel because there is rubbish all over the place.
> Wayne – It tells us that we have to find more rubbish dumps. And that we are destroying loads of beautiful places.
> (Kinvara, 9/11, Mixed)

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[11] It should be noted that during the period of questionnaire data collection, the *Race Against Waste* awareness campaign was being launched. Hence it is possible that if the survey were conducted several months later, more than one respondent may have stated that advertising encouraged householders to manage their waste in an environmentally-friendly way.

Overall, the discussions with students tended to focus on the need for information to be more carefully targeted for young people. A significant point which became apparent throughout the various stages of the research project is that the provision of information by itself is unlikely to effect changes in attitudes and actions. Even if information is present, other variables may overshadow it and the information may not be utilised.

> I suppose it's [information] out there if you want it, but at the moment I am not really looking for it (GCI04 – 75).

Equally this view reinforces the notion of a reactive as opposed to pro-active population; there is evidence that individuals wanted more information. However, they were not actively searching for it. In summary, the research revealed a demand not just for more information but also for appropriately constructed information that is delivered at appropriate times and frequencies. The research also highlighted that recipients needed to have trust in the information being presented to them and that two-way communication between householders and waste service providers could help improve the relevance of information. However, the findings also imply that information in isolation cannot change behaviour.

7.7 Economic Variables

Economic incentives were another practical factor identified by interviewees that affected participation in waste management activities, both positively (if there were savings to be made by reducing waste) and negatively (if recycling cost too much money). In general, there was considerable support from interviewees for imposing financial penalties on people who did not follow good waste management practice. This finding contrasts with the conclusions of earlier research conducted by Faughnan and McCabe (1998) on Irish citizens' attitudes to the environment which indicated that only half of Irish respondents indicated willingness to pay higher taxes or higher prices in order to protect the environment. Many respondents in the current research felt that the success of the plastic bag levy indicated how effective fiscal systems of waste management could be.

> That [plastic bag levy] was brilliant like over night it came in and was great. The shop at home used to keep all the netting from the onions and give it out to the teenagers and give other people boxes so the bag thing quickly took off. When we were young we always brought our bag to the shop. When it hits the pocket even if it's only 15 cent people will make it work (GCOI07 –56).

Overall, however, respondents referred to the lack of economic incentives for proper management of waste on a number of occasions and several suggested that the pay-by-weight system might be a fairer way of paying for waste.

> At the moment we should have incentives for people like if you do recycle correctly you will get a 10 per cent reduction or some kind of a reward. Irish people respond to that kind of thing (GCOI10 – 19).

The vast majority of those stating that economic measures, such as a money-back deposit system on recyclables, would encourage them to manage their waste in an environmentally-friendly manner, were in the two youngest age groups surveyed (18-29 and 30-39). Overall, the issue of charging for waste collection was a contentious issue at the national level and it was a topic which was highlighted in the media during the course of the research fieldwork. In the areas administered by Galway City and County Councils, 80 per cent of questionnaire respondents felt that they should pay for waste collection, while only 20 per cent felt that they should not have to. The highest percentage of respondents who felt that they should not pay were aged over 70 (37 per cent) and the reason most frequently given was 'I shouldn't have to pay. I'm an OAP'. 27 per cent of those respondents who were unemployed felt they should not have to pay waste charges. The main reasons proffered by questionnaire respondents who felt that they should pay for waste are: 'It's a good service', '[It's] better for the environment if I pay'. In contrast the main reasons given by respondents who felt they should not have to pay were: it is too expensive; the government should pay; and it is a form of double taxation.[12] Interviewees who expressed a willingness to pay waste charges offered a number of reasons to explain

[12] Respondents citing double taxation as a reason for not paying waste charges were referring to the fact that these respondents feel they continually pay income tax, which should enable the state to provide waste collection as a social service.

their opinion. Several interviewees within the area covered by Galway City Council referred to the fact that the local authority provided a great service and as a result people did not mind paying:

> I pay the City Corporation 350 euro here a year and it is due to go up another 25 euros, but you get a great service for that you can't crib too much about it (GCI09 – 29).

Overall interviewees felt that payment of waste charges was a civic duty that helped society function:

> I can't understand all the people in Dublin and Cork giving out about the charges and double taxation. Because it's a fact of life (GCOI10 – 53).

Reservations about the level of charges or the systems of charging were voiced, however. One respondent thought the charges were too high for the services provided, others felt that a pay-by-weight system would do more to encourage recycling and another respondent, living near the landfill, felt that there was a case for compensation, through a reduced waste charge, for those who had to put up with the inconvenience of having other people's waste transported past their house on a daily basis. A few interviewees had embarked on cost-saving initiatives to reduce waste charges, including bin sharing and applying for smaller-sized bins. Although there was an overwhelming sense of support for waste charges, respondents also felt that the existence of a charge potentially contributed to activities such as illegal dumping and backyard burning as a means to avoid incurring costs:

> Yes, people just dump black bags on the side of the road, you can see it when you go walking. I think if city bin prices were brought down people would use it much more because there is no hassle with them they will just come and collect it for you (GCI04 – 86).

Other concerns that emerged from the discussion regarding waste charges revolved around concepts of fairness and standardisation. Several interviewees voiced their disapproval at the inconsistency in the cost of waste charges in different locations across the country. This

lack of consistency, which was also apparent with regard to waste facilities, and the perceived sense of unfairness have the potential to increase dissatisfaction with waste services and impede improved waste management behaviour.

> Today with the announcement of the bin charges in Dublin going up I know there is going to be outrage up there. But down in the rest of the country where people are paying the true cost, they feel like they are being done. Unfairly because if you are out in the country well you're out in the country and you do what you are doing right or wrong but if you're in a town you have to follow the rules. The people in the towns outside Dublin are paying the full cost. And the people in Dublin are not (GCOI06 – 38).

In a similar economic vein, lack of money was proffered as a practical reason for inaction with regard to waste management behaviour. The participants in the household waste minimisation exercise were asked if their shopping habits had changed, for example if they purchased products with less packaging, over the course of the exercise. This household stated that their consumer behaviour had not changed over the course of the project and that economic factors influenced most of their shopping decisions:

> Personally, I'm not going to lie to you I wouldn't [think of minimising waste when shopping], I just go for the cheapest things .... as a student ...You're not thinking in that terms ... you just go for the regular product (H3W4).

Indeed several participants in the household waste minimisation exercise commented on the perceived higher cost of environmentally-friendly products relative to regular brands. Interviewees made comparable remarks on this topic. However, other reasons for lack of purchasing more environmentally-friendly products alluded to by interviewees included the amount of existing packaging on the majority of products, lack of alternative products and convenience. Many of these reasons are related to broader discourses of the power relations between consumers and manufacturers which are discussed in Chapter 8.

7.8 Administrative Variables

Of all the questionnaire respondents supplying explanations for managing their waste in an environmentally-friendly manner (428 respondents), 6 per cent cited 'we're told to by the council'. The idea that householders separate and recycle waste because it is mandatory is a view reiterated by several interviewees. One interviewee explained how she used the three-bin waste separation scheme in her previous accommodation solely because it was compulsory. However, it is also apparent from the following extract that the issue of lack of continuity or standardisation across a location re-emerges as a potential impediment to the successful implementation of compulsory recycling schemes.

> We honestly don't miss it [three-bin waste separation scheme], it was just a pain in the ass! It wasn't ever like we were doing something for the environment it was just something that we had to do (GCI04 – 41).

Overall, all interviewees living within the jurisdiction of the City Council commented that the stringent approach of the local authority had been successful and that the introduction of the three-bin system had been a great accomplishment.

> Oh we were obliged to do it, we have to do it because if you don't do it properly they won't take the bins. One morning a lady had her grandchildren staying with her and she put nappies in the food bin and they wouldn't take it, they're very very strict – they make sure it's the right stuff in the right bin (GCI01 –11).

It appears that, in line with Linden and Carlsson-Kanyama's (2003) research into environmentally-friendly disposal behaviour in Sweden, administrative measures have met with success in shaping the behaviour of householders towards waste management. At the same time, however, this research found that the perceived lack of enforcement of the law and related fines was cited as a barrier to improved waste management behaviour by many interviewees. Local cynicism at the lack of enforcement of regulation related to waste management was evident in many of the conversations with interviewees. In addition to identifying a lack of trust in waste regulators (an issue which is developed further in the following chapter), participants in this research specifically expressed dissatisfaction with

firstly, the lack of enforcement of the law on illegal issues such as backyard burning, and illegal dumping of waste, and secondly, a perceived shortage of dog and litter wardens. Overall, several participants, including students who participated in the focus-group discussion, deemed the non-enforcement of regulations as another important barrier to improved waste management behaviour because it potentially has a destructive effect on others:

> It was terrible really because 90 per cent of the householders were doing their bit and not burning they were really trying and the people in the pub on a beautiful sunny day you would see the smoke all around and then people started to think why if he's doing it should we bother recycling? So it was really hard in that sense (GCOI07 –18).

At the same time, respondents claimed that, on several occasions, they knew who was responsible for the illegal dumping activity. However, they were reluctant to report the culprits because of fear of reprisals:

> It's terrible they dump up here behind the walls. I know who does it, but I'm not going to say anything 'cos if you say anything you would have a door or a window put in that night. There is no way I would say anything. They [County Council] come down here several times to clean it up, but it doesn't stop (GCOI05 – 27).

Overall, a number of respondents acknowledged that the local authorities, accommodation managers and those in charge of enforcing laws face difficulties when attempting to find those responsible.

> I think the information [on recycling] is there people choose to ignore it. We do get regular updates. All leaflets and some times from the property management company telling us to use the system properly or there will be fines or penalties. I don't think that they have ever fined anyone and I don't think in a situation like this an entire block of apartments you can fine one person … it would be impossible to find the culprit. No penalties … it is not realistic (GCI08 – 15).

The relationship between local authorities and the public is examined further in the following chapter.

7.9 Conclusion – Practical Variables

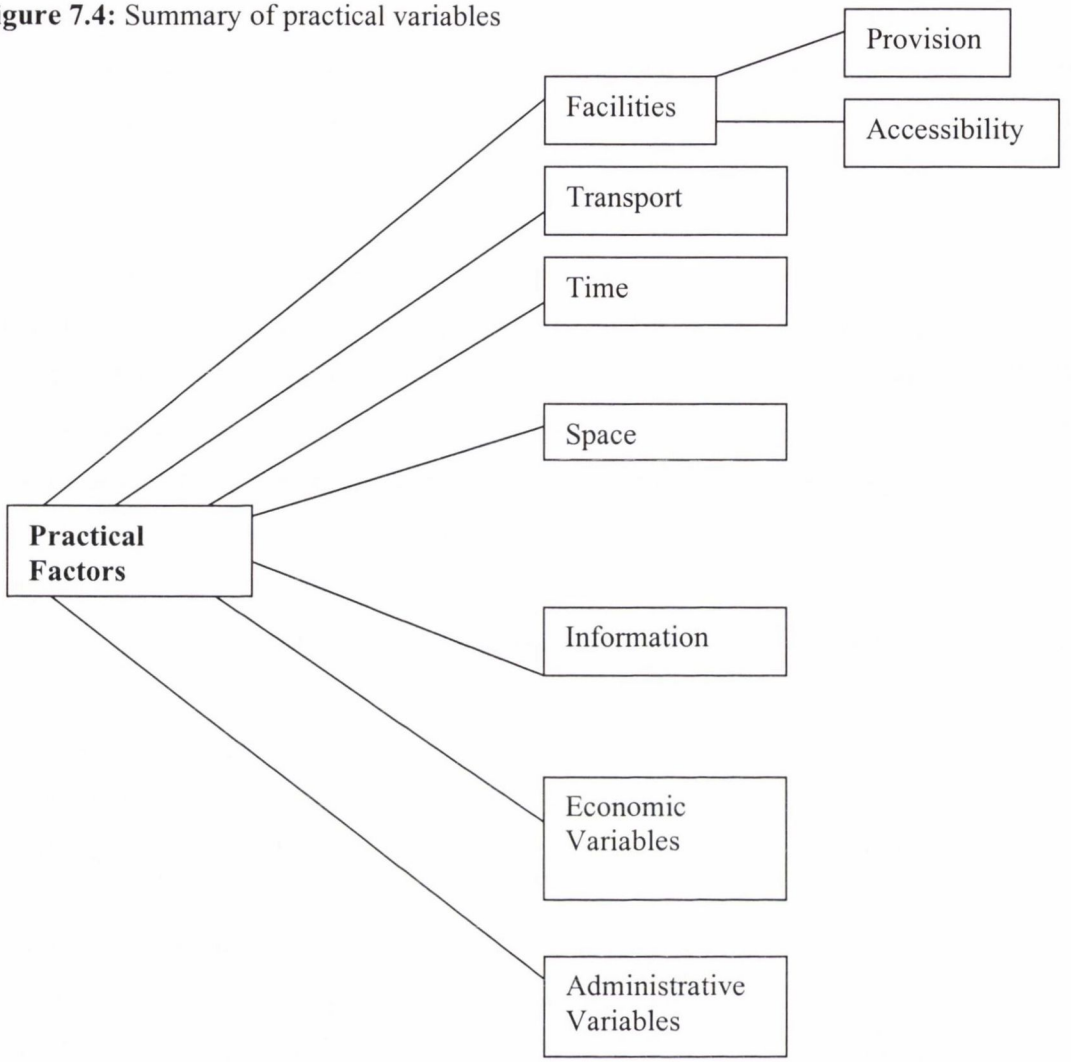
Figure 7.4 outlines the main practical variables that the chapter identified as important influencing waste management attitudes and behaviour to various extents. In parallel with the conclusions of the preceding chapter, due to the nature of qualitative data, it is not possible to statistically conclude how significant each practical variable is in shaping waste management behaviour. However, in the context of the literature (reviewed in chapter 3) discussing the various factors influencing general environmental behaviour it appears that practical variables are very influential on waste management behaviour.

Within the practical variables classification certain variables stand out as being an important influence on waste management behaviour. In particular, in relation to the existing literature on the influence of practical factors in shaping environmental behaviour, participants in this research perceived facilities as one of the most significant variables influencing their action or inaction with regard to waste. While the questionnaire results supported the findings of research conducted by Blake (1999) in the UK and Steel (1996) in the US (that where a door-to-door collection was available higher rates of involvement in composting and recycling were apparent), data from the qualitative research phases additionally highlighted that these door-to-door collections had to be frequent, regular, easy to use and appropriate to housing conditions. On the other hand, results from the interviews, focus groups and household exercise indicated that a lack of consistency in facility provision was viewed as a deterrent to improved waste management and evoked wider notions of fairness and personal efficacy. Similarly, the mismanagement of facilities was perceived as a potential barrier to positive waste actions and subsequently the notion that individual actions are limited as they operate within wider social systems is alluded to at this juncture. Indeed these results also highlight relations between the public and with waste regulators.

Reflecting Phillip's (2000:182) discussion on the *discourse of everyday constraints*, the findings outlined in this chapter discuss how inconvenience, lack of time, lack of transport and lack of space were all reasons proffered by various respondents for not managing waste in an environmentally-friendly way. In addition, the findings above posit that individuals' perception of time and space available to them may be related to priorities, and suggests that the way in which individuals prioritise waste management activities, such as recycling, among other day-to-day activities or commitments, will shape their waste management behaviour. These findings back up Barr *et al.*'s (2003) observations that with regard to availability of time and space a perceptional issue inevitably exists in conjunction with a structural issue. Collectively these findings on individual practical variables highlight the need to examine the topic of waste management attitudes and actions in a contextualised qualitative manner. Quantitative research methods are often limited in their ability to investigate individual personal circumstances.

The results, identifying information as a variable in shaping waste management attitudes and actions revealed that, in line with De Young's (1993) research, several respondents suggested that good information provision could lead to greater public participation in waste management initiatives. It was also suggested that information could improve methods of communication between the public and other waste management actors. However, interviewees were not optimistic that people would make the effort themselves to find information, particularly if it was not readily available. The research revealed a demand not just for more information but also for appropriately constructed information that is delivered at appropriate times and frequencies. Discussion about information on waste issues provoked comments on the issue of legitimate or 'good' information. Supporting the research of Macnaghten and Urry (1998), the topic of information elicited questions over trust. In several cases a lack of information begot a sense of distrust. For example, respondents raised doubts over the final destination of their waste and recyclables. The research highlighted that recipients needed to have trust in the information being presented to them and they need to trust in the information providers. This chapter discussed how two-way communication between householders and waste service providers could help improve the relevance of information and improve these levels of trust. However, the findings also imply that information in isolation cannot change behaviour.

Figure 7.4: Summary of practical variables



Concurring with research conducted in Sweden and the US, by Linden and Carlsson-Kanyama (2003) and Price (2001) respectively, the findings discussed in this chapter revealed that forms of economic measures were perceived as efficient in shifting people towards pro-environmental behaviour. Indeed, supporting the results from a recent European survey entitled *Sustainable Consumption and Production in the European Union* (UNEP 2004), the current findings indicate great support for the Irish national levy on plastic bags. Conversely, however, across the two case-study locations, inconsistent charging for waste services was a source of disgruntlement amongst some respondents and evoked wider notions of fairness. In the same vein many respondents appealed for what De Young (1993) classifies as 'monetary reinforcements', which included economic

incentives to recycle. To date, in both of the case-study locations, economic incentives to recycle are lacking. However, national policy to address this issue is currently under discussion (DoEHLG 2005).

Supporting Linden and Carlsson-Kanyama's (2003) research into environmentally-friendly disposal behaviour in Sweden, administrative measures have met with success in shaping the behaviour of householders towards waste management. In particular, Galway City Council's mandatory waste separation schemes appear to have altered the behaviour of a number of participants in the current research. The administrative measures in the Swedish research were viewed as particularly effective in the regulation of back-yard burning. However, in Ireland regulations on back-yard burning have not met with complete compliance. The underlying cultural variables that were proffered by many respondents for this non-compliance will be discussed in the following chapter. This research found that the perceived lack of enforcement of the law and related fines was cited as a barrier to improved waste management behaviour by many interviewees. Local cynicism at the lack of enforcement of regulation related to waste management is evident in the findings presented above. Overall, it is apparent from the review of these findings that although a range of practical variables is perceived as playing a vital role in shaping waste management attitudes and behaviour, these variables are intrinsically linked to wider social frameworks. The following chapter considers some of these broader contextual themes.

Chapter 8: Results IV – Contextual Variables

8.1 Introduction

From the questionnaire results it was not initially apparent that contextual variables play a main role in shaping waste management attitudes and behaviour. Some questionnaire respondents identified a sense of responsibility to future generations, and others acknowledged the influence of parents and or children as reasons to manage waste in an environmentally friendly manner. Overall however, when asked to identify the opportunities and barriers to managing waste in a more environmentally friendly way, relatively few respondents overtly remarked that contextual variables, such as concepts of trust and relationships with government, played a role in shaping their attitudes and waste management behaviours. In contrast, the results from the qualitative research phases highlighted a number of contextual themes which interviewees, students in the focus group discussions and participants in the household waste minimisation exercise, implicitly discussed as crucial factors influencing their waste management attitudes and behaviour. The topics discussed in this final results chapter are wide-ranging and include, social influences, role of culture, senses of responsibility, concepts of risk, fairness, trust and transparency, and relationships with government, local and national.

8.2 Social Influences - Peer Pressure, Consumerism, and Identity

Results from the research revealed that family, neighbours, peers and others in the community are perceived as influential in determining an individual's waste management behaviour. This influence was viewed both positively and negatively. Overall 8 per cent of questionnaire respondents who felt they managed waste in an environmentally friendly manner cited that their parents or their children were responsible for their improved waste management behaviour. One interviewee expanded on this answer in her interview as she discussed how the impetus for a change in waste management behaviour for her, was her daughter:

> She [daughter] comes home and says 'don't put that bottle in there that's for recycling' she will show me there is something at the bottom of bottles about it, a sign for recycling, it makes me feel guilty (GCOI04 – 50).

Equally from the focus group discussions it emerged that students felt they were influenced by the activities of their parents and teachers and several students consequently suggested that their waste management behaviour might improve if adults lead by example. This perhaps may be interpreted as shifting responsibility for waste management activities onto others (the notion of transferring responsibility is discussed in the next section). Other social factors influencing students' actions were peer pressure and the activities of older children. Academics in the field of psychology have long held that peer interaction is a critical factor in the development of reasoning about a variety of social topics (Durkin 2001). Niemeyer and Splash (2001), in their discussion on environmental policy and public deliberation, note that certain individuals who have specific concerns sometimes do not vocalise them for fear that their opinions may be subjected to derision. There was a sense, particularly amongst the older students in the focus group discussions, that it was not fashionable to admit to being concerned about the environment and to act accordingly. This view supports the argument that improved waste management is not yet a recognised social norm. During the interviews several participants remarked on the positive environmental effect that resulted from neighbours encouraging each other to do the right thing:

> It's so funny because on this side of the estate there are a few women very fussy about the bins they are always checking that people are putting the right thing in the right bin. If neighbours did the right thing then other people would do the right thing (GCI01 –52).

At the same time, the in-activity or illegal behaviour of some individuals can negatively impact others and may erode their commitment to positive waste management behaviour, particularly if the poor behaviour goes unpunished. Similarly, other people's perceptions can also affect citizens' non-involvement or reduced participation in improved waste management activities:

> Even though I was always into recycling, until I started to seriously recycle I never realised how much we were actually dumping. I think it was just laziness and space and on a wet day you are not going to go out. If you're recycling further out [using off-site facilities] people think its unsightly left lying around (GCOI10 –13).

It is implicit from the extract above that individuals may be induced to conform to others judgements for normative reasons. Respondents spoke about the waste actions of others in society and often expressed quite strong negative views about certain groups of people who, in their opinion, were not adhering to the social norms of waste management behaviour either through littering, illegal dumping or backyard burning. One constant theme underlying all discussions about the behaviour of others was the notion of community or civic spirit and the influence it had on attitudes towards waste management. Interviewees felt that there was a need for a positive sense of collective community spirit. Respondents from areas that exhibited such positive spirit felt that if you had good atmosphere within a community then people would be more inclined to work to preserve it:

> The neighbours are good too and we all have influence on each other. If you live in an estate that is a nice estate every one wants to keep it right, so people are not inclined to throw stuff around. There is a very good community spirit here. There is also a residents committee and they are very active especially in the last year because there is a young committee (GCOI02 –10).

An issue which arose during discussions about other people's lawlessness was the lack of willingness to report individuals for their misdeeds. Even though they expressed their disgust at actions such as illegal dumping or littering, many interviewees felt too intimidated to report the culprits. Again underlying this was a sense of erosion of community spirit.

> Neighbours are inclined to keep to themselves it's the way the culture is going. I think for something like litter, people are not going to challenge anyone like try to be helpful and end up with a brick in your window a couple of days later (GCI08 – 55).

Respondents who considered themselves active managers of waste were often those people who were active in other ways in their community. Such people mentioned the problem of trying to motivate their neighbours and local community to act positively in waste management and become involved in waste minimisation activities. Respondents generally seemed resigned to the fact that some people were just more civicly minded than others, that it was a natural predisposition rather than socially learnt behaviour, and as such nothing could persuade non-joiners to participate. In line with this the majority of interviewees felt that the same people were left doing the same civic duties such as attending meetings, or local cleanups.

> It is always the same people that do the things like the ICA at home they do it because they have always done it. They did come out and sell the trees but you have to make it fun and get a bit of publicity. It tends to be even in groups that the same three or four always do it (GCOI07 – 48).

> I don't know if the Government really listen or not. You would wonder what's the best way to go about it. Its down to the individual to decide weather they are going to do it or not, at the same time its quite easy to sit back. I'm quite happy to do my bit but do I really, really care about Joe Bloggs down the road? (GCI08 – 40).

In general a lack of community spirit is associated, by many of the interviewees, with the changing nature of Irish society. Indeed several older participants in the research often remarked nostalgically about a time when everyone knew their neighbours and had pride in the area they lived in. Healey (1997:123) discusses how the 'breakdown of community' is commonly perceived as the root of many of the growing problems in our present societies (civicness and environmental citizenship will be discussed in the next section). Another theme alluded to throughout several of the quotations above is the relationship between

waste management, consumerism and the creation of lifestyles and self-identity. As discussed in the introduction to this thesis, waste management practices are inherently tied up with consumption practices. Social theorists such as Beck (1992) and Shove and Warde (2002) maintain that individuals define themselves through the messages they convey to others, through the goods that they acquire and the practices that they exhibit. As Buttel *et al.* (2002) discuss, a primary tenant of postmodernism is the idea that identity is increasingly shaped, not by one's role in the division of labour and production, but rather through practices of consumption. In their research on household consumption in the Netherlands, Gatersleben and Vlek (1998) concluded that certain household goods contribute to the perceived quality of life of their respondents. Positive waste management activities such as recycling or purchasing products with less packaging are consequently viewed as expressions of personal identity. Subsequently, as inferred in several respondents' remarks, participation in positive waste management activities maybe influenced by an individual's desire to be regarded as part of (or as distinct from) a certain group or to assume a particular lifestyle.

Many remarks by respondents in the current research suggest that poor contemporary waste practices are related to the current trend for increased consumption or movement towards a consumer society.

> People don't have like years ago even a head of cabbage even if they have the space. They go into the supermarket to buy everything people are lazy if the machine doesn't do it now it wont be done I wouldn't fault it either because it has taken the drudgery out of things its just a pity people wont grow their own stuff anymore (GCI09 –26).

It is evident from respondents' comments that consumers' aspirations for less packaging are often outweighed by a desire for convenience and high product standards, including product display and presentation.

> I know they need a lot of protection when they are being transported, but the manufacturer is paying a fortune for it and then we are paying a fortune to get rid of it...Maybe there should be a levy on things, you never bring back things that you get free even us, but we always bring back the [reusable] bags .... The amount of packaging waste that has to be recycled out of the shop where I work is unreal. I know sheets have to be presented so people will buy them, but there is too much packaging altogether (GCI06 – 11, 44).

Several participants in the research project suggested that the responsibility for waste lay with manufacturers and this notion is discussed further in the next section on responsibility. However, a few respondents felt that the consumer does have some power, if they choose to utilise it, in so far as they have the ability to choose what products to buy, which can then lead to retailers demanding certain products from manufacturers. Research conducted in Norway by Synnestvedt (2001) concluded that customer pressure is an important element influencing improved environmental behaviour. However, Synnestvedt distinguishes between the influences of large versus small customers remarking that small customers acting independently had little power to influence suppliers while larger customers, such as retailers, had a more commanding influence.

> We [respondent's work] always buy from companies that will recycle the waste and if our company can do it then everyone should be able to do it. Everyone should do a little bit. In some small way the supermarkets should say to the companies that deliver them to recycle them... (GCOI02 – 22/23).

From these research findings it is apparent that the consuming society seems to be inextricably linked to the culture, habits and consciousness of contemporary Ireland such that individuals feel they are tied to certain behaviours. Indeed, as researchers such as Hobson (2003) and Shove (2004) remark, consumption practices are not necessarily related to simple free will on the part of consumers and often, consumers feel linked into particular patterns of consumption from which they cannot easily divorce themselves, because consumption choices are tied into wider structural relationships. Niemeyer and Splash

(2001) discuss how the entire premise of product marketing indicates that consumer preferences can be manipulated and that an individual's choice in a complex world is far removed from expected economic utility calculations. Hobson (2003) has recently undertaken research in the UK, which deals explicitly with the consumer/citizen-manufacturer relationship. Hobson concluded that the social and cultural norms associated with consuming, such as convenience, profit, freedom and safety, are powerful and are often contradictory to environmental concerns. Consequently, simple assertions by governments that people should change their consuming behaviour, for example through buying products with less packaging, are likely to be ineffective because patterns of consumption are situated in complex webs of social and cultural norms. There is, as Nash (2001) discuses, a need to examine the cultural politics of consumption.

8.3 Cultural Variables

Another more socially based aspect to interviewees' rationalisations of their attitudes and behaviour towards waste is a cultural dimension, which manifested itself in several ways. First, this was implicit in the assertion that some Irish people did not like to follow regulations and that there was a culture of attempting to subvert authority in many spheres of life, including waste management. This is particularly apparent from remarks made about the nature of the relationship between local authority and community. Interviewees commented that local authorities have a difficult job and have to contend with publics prone to non-compliance. Several interviewees remarked that despite regulations some people would always try to defy authority.

> People...are aware of the helicopter in the sky [checking for illegal burning], but it doesn't fly at night. So then they think it doesn't fly at night and [they say] 'so I can burn at night' and that is a very Irish attitude (GCOI06 – 36).

Researchers in the field of Irish historical geography, such as Graham (2001) and Morrissey (2005), have similarly identified this cultural trait of subverting the influence of authority, as part of an authentic culture of Irishness. It is suggested that this trait is symptomatic of a colonial background. Secondly, with regard to explanations for lack of participation in improved waste management practices, a number of respondents claimed

that this lack of action was associated with a perceived 'Irish mentality' of complaining about an issue but not following it up as one interviewee stated '*we* [the Irish public] *are very complacent, we give out about it and then do nothing'* (GCOI10 – 40). Underlying the allusions of a passive Irish culture are implicit references to a lack of 'civic responsibility' (discussed elsewhere). Many of the interviewees commenting on this issue were themselves active members in the community.

> It's the same even in a community. It's hard to get people going. We called the meeting for the tidy towns committee and one person came to the meeting. There was an issue at the time about the poison traps at the pier and the way they are always dirty. We got them together with bins and a shovel and a brush and said organize it among yourselves to clean it up. It was terrible as a first impression of the island and sure they did it for two days and that was that. They couldn't be bothered ….. And all the people who lived along there who mouthed and mouthed they had an opportunity to do something about it and none of them came to the tidy town meeting (GCOI07 – 49, 50).

Many participants in the research made country-based, cultural comparisons of waste management behaviour. They contrasted the passiveness associated with the Irish public with regard to their waste management attitudes and behaviour, with their perceptions of their pro-active European counterparts. Respondents often compared the situation in Ireland with the practices (at least perceived practices) of other European countries. Replicating remarks made by adults in earlier stages of the research, students in the focus group discussions contrasted poor waste management in Ireland and the situation that they believed existed in other countries, with experiences gained while on holiday often appearing to underpin their statements:

> Barry: When we were in France we saw someone throwing litter out of a car and then a man came along and picked up the litter and brought it back to the car.
> (Galway, 9/11, Mixed).

These perceptions reflect the results of a cross-national study of general environmental attitudes, perceptions and behaviours conducted by Faughnan and McCabe (1998). In assessing Ireland's performance relative to four other EU countries, Germany, Italy, Great Britain and The Netherlands, over 40 per cent of Irish respondents felt that their country did less than other EU countries to protect the environment. In contrast German and Dutch respondents gave a very positive assessment of the performance of their respective countries. Overall the 1998 study showed that Irish respondents performed relatively badly in most areas, particularly in relation to environmentally friendly consumer behaviours and knowledge of environmental issues (Faughan and McCabe 1998). While the results of the current research project and research conducted in 2000 and 2002 by Drury Research indicate that levels of environmental awareness, knowledge and activity appear to be increasing, the present research found that a perception still exists that other EU countries perform better in the area of the environment and more specifically waste management. Indeed, in the current research project, the good waste management practices of other European countries, particularly Germany and the Netherlands, were frequently cited as models that Ireland should adopt. For example, the existence of waste infrastructure such as incineration in other countries was referred to by a number of interviewees as justification for the use of similar technologies to manage waste in Ireland. However, as the following quotation illustrates several interviewees were of the opinion that support for waste management technologies was present in other countries as the result of good relations between government and publics. In contrast many interviewees commented that in Ireland, public trust in government/local authorities was lacking (trust is discussed in more depth in a later section).

> .....I think because we are so new to it [incineration] there is no point bringing us in at the start unlike other countries where it is up and running. A lot of these countries just present the thing [incinerator] and that's it. In Ireland it goes on forever people talking about it. But then you are looking at a different country in Ireland. In other countries they have more trust in their elected systems and that is why they just bring it in, end of story, regardless what people think of it. We have a huge proportion of TD's per head here in this country. We are like children we get outraged if we are not told and can't be bothered when we are told. So we are different from the continent in that sense on the continent they

> trust and leave alone what they are told. We don't here. We are kind of contradictory. We accept things and then give out about them happening. The Irish people do question things although we don't look for a long-term community view we are inclined to personalise everything more than on the continent (GCOI10 – 67,69,70).

Harrison *et al.* (1996) in a cultural comparison of lay publics in The Netherlands and Great Britain, found that the level of trust in the relationship between government and citizens was a crucial constraint hindering greater acceptance of personal responsibility for pro-environmental activities. The 1996 research revealed that the level of pro-environmental behaviour was higher among participants from the Netherlands than respondent's from Great Britain. The authors relate this differential to, among other factors, the Dutch government's resolution to make all sectors of society acknowledge their responsibilities and rights to the environment. The Dutch respondents surveyed appeared to place a high value on this government requirement and in addition they displayed a strong sense of collective identity that appeared to exist at the neighbourhood level. The authors concluded that personal responsibility for the environment was more likely to exist when such cultural and social relations existed rather than the more isolated conditions that the research indicated were prevalent in many neighbourhoods in the UK (Harrison *et al.* 1996). Similarly, the final sentence in the extract above again refers to an apparent dearth in Irish society of civic responsibility relative to their European counterparts. The issue of responsibility is discussed in detail in the next section.

8.4 Responsibility

The concept of responsibility emerged from the fieldwork data as a significant variable in shaping individual waste management behaviour. Respondents invoked several different dimensions of responsibility. For some respondents, a sense of (individual and societal) responsibility to current and future generations surfaced as a motivating factor in encouraging positive waste management attitudes and behaviour. However, the degree to which citizens felt they have an individual responsibility for the environment or for waste management problems also played a role in determining their action or inaction with regard to waste management. Coupled with this, the extent to which some individuals

regarded waste management as the responsibility of others rather than themselves, transpired as another dimension to the concept of responsibility.

8.4.1 Sense of responsibility to future generations

As highlighted in the previous section on social pressure, children can play a critical role in influencing the waste management activities of others around them. In addition, participants in the various stages of this research project identified an individual's sense of responsibility to current and future generations as a reason for their positive actions towards waste management. A relatively small percentage (6 per cent) of all questionnaire respondents, who felt they were excellent or good at managing waste, cited '*my child's future'* as a basis for their positive behaviour. However, when the demographics were examined (see Chapter 5) it is clear that for respondents in particular age category (30-39 and 40-49) '*my child's future*' was a prominent reason to act in an environmentally friendly manner with regard to waste. This is perhaps because respondents in those age categories may have children at home who are dependent on them for care. Interviewees reiterated this sense of responsibility to the next generation. In the following extract an interviewee in Renmore felt that her attitudes towards waste and the environment could be explained by a sense of responsibility to her younger relatives:

> We have to look after the environment. I don't have children myself, but I have nieces and nephews and we have to look after it for them (GCI06 – 13).

Interestingly, the same sentiment was echoed in the focus group discussions by students as young as nine. As previously considered in Chapter 4 the student's use of sustainability language may be the consequence of parental influence or maybe the result of vocabulary associated with sustainable development used in the teaching of environmental education. For example, children may use or repeat phrases they have picked up from the class teacher or from older family members.

> Declan: You shouldn't have litter around we have to clean up the world now because in the next few years it won't get any better and especially for the next generation.
> (Ballinasloe, 9/11 year olds Mixed)

The view that responsibility to current and future generations contributes to improved waste management behaviour resonates with the core principle of the concept of sustainable development.

8.4.2 Individual responsibility

It is clear from the baseline questionnaire survey results presented in Chapter 5 that there was an overall recognition of the problem of waste. This finding echoed through the latter stages of research. Despite a diversity of opinion on the nature of waste there was unanimous agreement in the focus group discussions that waste was a problem in Ireland. There was, however, less agreement about who was responsible for dealing with this problem with some students claiming that the responsibility for waste management was not theirs. Similarly, questionnaire respondents were reluctant to accept responsibility for waste problems (Question 11c), preferring to put the onus on local authorities or manufacturers. However, during the face-to-face interviews the most frequent response to questions about responsibility was that everyone, every individual had a role to play in the proper management of waste.

> The individual [is responsible], we have turned into a culture where we blame the Government for this and that but it's down to the individual (GCI08 –31).

> I would say that it [responsibility] is with the individual and they should say that to everybody "here is your own plot now look after it". We would have a great world if everyone was to do that, but the thing is they don't (GCOI03 – 24).

The interview discussions about individual responsibility related to wider ideals about the role of the individual in society, environmental citizenship and issues such as civic duty. Some of these concepts are linked to personality variables discussed in Chapter 6: several civically-minded interviewees remarked that they felt a responsibility to the environment and that they connected their pro-environmental actions to this concern. Supporting the hypothesis of Hopper and Neilson (1991) and Hawthorne and Alabaster (1999), comments from several interviewees indicated that an acceptance of personal responsibility for the environment was influential in shaping positive environmental activities. Even though most of interviewees felt that the individual should be responsible for waste, several interviewees acknowledged that, beyond the practical and logistical barriers identified in Chapter 7, individuals operate within wider social and political structures over which they feel they have little influence. For example, consumers feel they can only purchase products which are sold by manufacturers and if the manufacturer does not provide an environmentally friendly alternative the consumer then feels unable to make an environmentally friendly choice. Overall, replicating the findings of UK research conducted by Hinchliffe (1996), several respondents in the current research expressed the futility of taking action as an individual; they felt that their actions might go unnoticed.

These findings have direct implications for policy makers in the waste arena. As discussed in Chapter 2 government attempts to change attitudes and behaviour towards the environment and waste management in particular, such as *It's Easy to Make a Difference* and the *Race Against Waste* campaign, are both targeted towards individual action. The findings of this research highlight the irrelevance of such campaigns as they fail to take into account the social, cultural and political constraints on people's everyday lives.

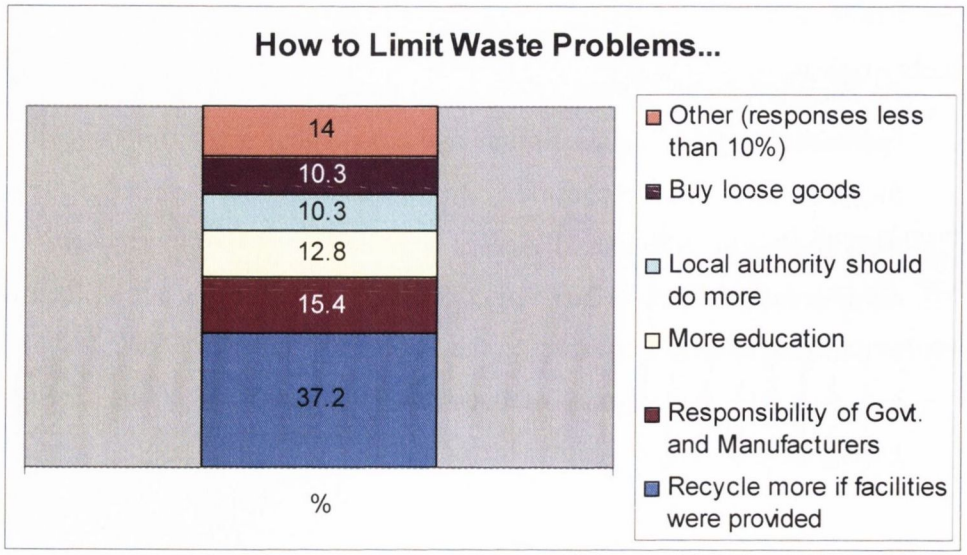
As Bickerstaff and Walker (2002:2175) discuss, the UK Government has also sought to "persuade people to act as discrete and autonomous actors for the collective good". This focus on individual responsibility can be understood as part of a general shift towards individualisation (Chapter 3). According to Selman (1996) this movement has proven to be detrimental for different kinds of collective, public-spirited actions and is strongly related to declining levels of civicness in the community. Indeed, this decline in community spirit, was raised by the majority of interviewees (discussed elsewhere). Further, the unequal burden of civic responsibility, the notion that the same people were left doing the same

civic duties such as attending meetings, or local cleanups, is a topic which was raised by the majority of interviewees and is discussed later in a Section 8.8.

8.4.3 Transferring responsibility

Responsibility was therefore also cited as a reason for not participating actively in waste management; some claimed that the reduction of waste was the responsibility of others rather than themselves. As stated previously, 91 per cent of all questionnaire respondents felt that there are waste management problems in Ireland. However, with regard to the measures respondents were prepared to take to limit waste problems, only 16 per cent of respondents provided an answer. Of these, the main responses (see Figure 8.1) were that: they could recycle more, if the facilities were provided; it was the responsibility of manufacturers and government to limit waste at source; there needed to be more education of people, particularly of students and children; local authorities should make more effort; and that individuals should buy more loose goods. The low response to this question may indicate that respondents are possibly unaware of what they can do to limit waste management problems. These results highlight the potential need for more information aimed at what the householder can do to curb waste management problems. However, as the discussion in Chapter 7 indicated, information provision is not the only obstacle to improved behaviour.

Figure 8.1: Measures respondents are willing to take to limit waste problems (Question 11c)



The low response rate to this survey question and indeed the actual responses provided indicate that many respondents felt there was little they, as householders, could do to limit waste management problems. This is in keeping with conclusions reached by other researchers (for example, Lash 2000; Scott 2000; Bickerstaff and Walker 2002) who have discussed in depth the issue of responsibility for environmental actions. The tendency to transfer responsibility to others is suggested in answers such as '[I'd] *recycle more, if the facilities were provided*' and '[it is] *up to manufacturers/government*'. Research conducted by Bickerstaff and Walker (2002) on air pollution in Birmingham in the UK identified the various groups that were apportioned responsibility by lay individuals for air-pollution problems. The findings from the current research identified many of the same groups: government and local government, educational institutions and others. Many respondents deflected responsibility for waste problems towards government or local government bodies in two key ways. First, the functions of government were highlighted in the research findings and the redirection of responsibility to the individual was criticised. The following extracts highlight the perception that local authorities are responsible for providing waste services to enable householders to conveniently manage their waste correctly. Reiterating the findings on individual responsibility, discussed above, several interviewees remarked that many waste management tasks were beyond the remit of the individual.

> Waste should be controlled in their own county especially a city like Galway. They [local authority] should be doing a lot more to control waste. They should start off with simple things like setting up recycling systems in an estate. The size of this estate alone the amount of rubbish that we would gather they should be doing something within the housing estates not coming out of Dunne's stores. How many people realistically are going to get out on a cold evening and load their car up and bring it to the nearest recycle centre? It needs to be moved nearer to people especially in the housing estates (GCI02 –36).

> It [responsibility] will have to be a government department because I don't think any community would take that on, they might if it was all left at their doorstep but we are spoiled that way we have had the government looking after everything for us. There was a big row going on here over the summer that nobody cut the grass and everyone was

> saying "oh the council, the council" but the government and the council can't be looking after everything money doesn't grow on the trees (GCI01 – 47).

While a number of interviewees felt that the local authorities and government were primarily responsible for dealing with waste, many interviewees, as illustrated in the extract above, were quick to mention the efforts of local authorities to improve waste management and expressed an understanding of the perceived difficulties local authorities and their personnel must face in their daily work. It was suggested that householders needed local authority support in order to take on their fair share of responsibility for dealing with waste effectively.

Second, following the perception that government bodies are more responsible than individuals for taking action, several respondents claimed that the local authority should be doing more to regulate or enforce waste management. Overall it was felt that penalties for illegal activities such as backyard burning or illegal dumping were not properly enforced and that offenders were not subject to any fines:

> People will dump anywhere, they'd dump it on your head if they'd get away with it. You'd see if you pass a quiet back road or something you'd see stuff dumped all over the place. You'd want some sort of authority there, a refuse Garda or something like that. I can't see it being enforced, it's going to continue though (GCI10 – 27).

Interestingly, as highlighted in Chapter 7, interviewees requested more laws and regulations for the public, and at the same time they emphasised the need to enforce these regulations. At another level, interviewees frequently felt that it was the responsibility of the Government and that it was in their power, to regulate the practices of businesses and industries as producers of packaging:

> It's ridiculous. I go to Tesco and buy organic vegetables and when you go up and see organic veg in massive amounts of packaging, I just think there is a strong irony in that they have polystyrene, plastic wrapped all around them and I keep thinking it's not right. A friend of mine keeps

> getting on to me to go to the market to get my veg down there. I will always settle for some level of convenience. The government should be approached (GCI08 – 28).

In contrast to the research conducted by Bickerstaff and Walker (2002:2184), which identified technological institutions as "a less-direct target of responsibility" for resolving air pollution problems, in the current research there is little observable evidence of transferring responsibility for waste management problems to such institutions. However, another less-direct target of responsibility identified as common to both research projects was educational institutions. Throughout all stages of the research improved education about positive waste management behaviour was one of the most frequently suggested mechanisms for changing householder's behaviour. Three-quarters of respondents mentioned the role of education at some time during the interviews. Education through formal schooling for children was the most common channel proposed as a means to change both attitudes and behaviour. It is assumed that providing information and facilities in schools would not only make younger generations more aware of the waste problems in Ireland and give them practical experiences of positive waste management behaviour, it would also, as discussed in the previous section, have a knock-on effect to parents:

> Ways of increasing awareness is through education like in Creagh National School. Because the children are great to dictate to the parents and make them recycle. Even when we go out home he tells my father 'you can't be burning things!' And to my mum he says 'we wash all our bean cans' and she just says 'that's ok for you!' ….Even in work the people say that their kids are brilliant (GCOI02 – 9).

The merits of, and motivation for, environmental education are well documented (Davies 1999a; Scott and Oulton 2000), as are the difficulties involved with introducing environmental ethics and values into curricula. For example, some of these difficulties highlighted by Davies (1999a) include (i) uncertainty, the contested body of information on the environment is ever advancing, and there is no tangible data set on the environment that can be easily taught to students; (ii) teaching attitudes, environmental problems are linked to life-styles and attitudes, which are not topics which can be taught in a straightforward manner in a classroom, and (iii) grounding environmental education, this

type of education needs to be made relevant to students' lives and the spaces they occupy. This final point was specifically reiterated by some of the secondary school students participating in the focus group discussions in the current research who felt that environmental education in their school was too abstract and they felt disconnected from the activities they themselves could participate in. By transferring responsibility to educational institutions in this manner, the emphasis falls on the younger generation to manage waste correctly and, as highlighted in Chapter 5, this situation serves to relinquish several older individuals in society of responsibility for improving their waste management practices.

The issue of transferring responsibility to manufacturers is more particular to the topic of waste management. Indeed the questionnaire results indicate that many respondents held manufacturers responsible for waste and packaging and this view was restated by several of the participants in the focus group discussions. At one level, interviewees felt that the amount of packaging on products was often unnecessary. They also perceived that the cost of the packaging was passed on to the consumer:

> There is too much packaging and everything is extra dear for that reason. (GCI07 – 41).

Another interviewee pointed out that sometimes no environmentally friendly alternatives are on offer:

> ...I'm sure they [manufacturers] could use more eco friendly packaging and if they did that that would be grand for example these plastics that you can't get rid of or burn or anything. Why don't they switch to some other type of plastic that you can get rid of... biodegradable plastic? (GCOI03 – 26).

At another level, interviewees felt that they as consumers should, and possibly could, do more, but that as previously discussed the responsibility and power lay with the Government to do more to regulate manufacturers and packaging. Indeed, according to the EPA (2004) in the past few years EU and Irish national policy have increasingly focussed on providing for producer responsibility initiatives. Producer responsibility attempts to

ensure that producers take responsibility and pay for the collection and recycling of their products when they reach their end of life (EPA 2004). In practice, however, when attempting to implement the 'polluter pays principle', difficulties arise deciphering the actor responsible for payment.

Finally throughout discussions with interviewees there is evidence of what Bickerstaff and Walker (2002:2185) refer to as *the passive distancing of responsibility to soci*ety. Linked to the previous discussion on social influences, there was a tendency to transfer responsibility for waste problems onto others in society. Overtly respondents spoke about the waste actions of others in society and often expressed quite strong negative views about certain groups of people who, in their opinion, were not adhering to the social norms of waste management behaviour and were responsible for activities such as littering, illegal dumping or backyard burning. At another level, rather than being positively assertive about their own actions respondents frequently used the passive voice to indicate that matters were outside of their control and in the hands of other agencies. As Bickerstaff and Walker (2002) remark in emphasising social culpability as opposed to individual responsibility, the speaker disavows themselves of a necessity to act. Literature linking the issue of distancing in interviews with responsibility for environmental issues has highlighted the importance of the vocabulary used by respondents while describing participation in environmental activities (Phillips 2000; Bickerstaff and Walker 2002). As discussed in the methodology chapter, during the interviews conducted for this research it became apparent that respondents were generally more comfortable talking about the actions of others rather than talking solely about their waste management behaviour.

Senses of responsibility play a prominent role in shaping waste management behaviours. Even though most of interviewees felt that the individual should be responsible for waste, several acknowledged that individuals operate within wider social and political structures over which they feel they have little influence. Indeed the degree to which individuals feel they or other actors are responsible for waste problems will influence waste management behaviour. As discussed above, these findings have direct implications for policy makers in the waste arena. The findings of this research highlight the potential for environmental awareness campaigns to be ineffective as they fail to take into account the social, cultural and political constraints on people's everyday lives.

8.5 Risk

Multiple dimensions of risk discourses surfaced throughout all stages of this research. This is perhaps unsurprising given that society in general appears to be increasingly concerned about risks posed by all types of waste disposal infrastructure (Slovic 1997). From an analysis of the both the quantitative and qualitative data three overlapping aspects of risk emerged: types of risk associated with waste, perception of risk and communication of risk.

Most respondents associated waste disposal options such as landfill or incineration with an element of risk. These waste disposal options were often negatively portrayed by respondents and several deemed these disposal options as necessary evils; respondents recognised the need to dispose of waste and many were resigned to the fact that incineration and, or landfill was an inevitable result of needing to treat the waste produced. In general, other waste management infrastructure such as bottle banks for recycling or composters did not receive the same the negative reaction. During discussions over the landfill situation in Ireland and the possible introduction of incineration into the country, several interviewees acknowledged that both options had risks associated with them, and chose the option that they perceived as less *risky*. For example the comments below indicate that some respondents perceived incineration as preferable to waste management alternatives like landfill:

> Well you have to reduce landfill it is a terrible pollutant (GCI09 –22).

> Of the two [landfill and incineration] I'd say for appearances incineration; you burn it it's gone, landfill is still here, whatever harm incineration would do it's up there, it's not down here (GCOI01 – 50).

Overall, the subject of incineration received a mixed reception when raised during the course of the interviews. Several interviewees were in favour of the method as a waste management option, some against and many felt that they did not know enough about the issue. Respondents who were either resigned to, or generally supportive of, incineration did have their concerns about the implementation of the process, which for the most part

revolved around the establishment of adequate management systems to reduce potential risks from the incineration technique. Those respondents who were more sceptical of the technique were explicit in their concerns, particularly in relation to risks to environment and human health:

> I really don't like incineration. I would be worried about it. Whatever filters and stuff that they use, I would still be worried about it because we are left with the ash (GCOI07-60).

> I would much prefer to go the recycle route. I think the harmful ways, way outweigh the benefits. There are too many harmful things about incineration health wise (GCI08 – 50).

While interviewees associated incineration and landfill with risks to both the environment and personal health, all respondents' vocalising their opposition to the illegal act of backyard burning of rubbish chiefly felt that the practice was a risk to their own health and the health of others. However, other interviewees had contrasting perceptions of backyard burning. Several respondents differentiated between what they perceived is good or safe to burn and what is bad or harmful, others discussed what time of the day it was safe to burn rubbish, while others felt that burning was a harmless activity:

> Well I don't really have an opinion on it [burning] as such. But it depends on what they are burning if it's waste I certainly don't agree with it. I have experience of neighbours burning all type of stuff and it's horrendous. I have no objections to people burning tree cuttings and similar stuff like that organic stuff (GCI08 –37).

> Down at home during the summer we used to do it [backyard burning], but there was one neighbour who burned in the daytime and if we had clothes out it was terrible and the smell. They should limit it to certain times like in the night when it won't affect people (GCI04 – 62).

> I don't think it [backyard burning] would do any damage. We could get rid of old tyres like that. I don't really know about the scientific side,

> maybe the people who test the air would know. I don't agree with, you know, big factories belching out from big chimneys, that's different (GCI01 – 69).

This final extract clearly alludes to a perception of differing gradients of risk, as well as the role of science in the risk debate. A large body of research exists examining the subject of communicating risk to the public (Goldblatt 1996; Slovic 1997; Macnaghten and Urry 1998). On the topic of waste management infrastructure in Ireland, several interviewees in this research commented on the sense of confusion surrounding many waste issues. The most prominent feeling amongst respondents in relation to incineration was one of uncertainty. Many interviewees felt that there was not enough information specifically provided on incineration, including topics such as emissions:

> From what I have read there are toxins coming out of them [incineration], but if they put a machine on the top of them to absorb them, then that's ok. But I don't know it's only what I read in the paper (GCOI03 –10).

> I don't know about it, where does the smoke go? What happens? No, I have never gotten any information about waste (GCOI09 –22).

> My own opinion on incineration is that I would have to read up more on it. I would have reservations about what is it actually pumping into the air or how is it handled. Maybe with leaflets we could find out more. We only really hear about the high profile cases like around Cashel and Nenagh where the animals are affected. And then in your mind when you don't have enough detail you are inclined to get the wrong message because the plant there is chemical, but because we don't know enough about it we immediately think they are all the same (GCOI10 –23).

The extracts above indicate the level of confusion surrounding this topic in the interviewees' opinions. As alluded to in the final extract above, the role of the media is crucial to the portrayal of risk. Media portrayal plays a role in creating distrust. As Slovic (1997) notes, negative or trust-destroying events are often more visible than positive trust-building events. To this Slovic (1997:305) adds that as an "idiosyncrasy of human

psychology – sources of bad (trust-destroying) news tend to be seen as more credible than sources of good news". As reviewed in Chapter 3 the concept of trust has been emphasised as an important part of the risk. For example, several interviewees had reservations about the risks to human and environmental health posed by landfills because of perceived negligence in the past:

> Health, health is the biggest thing. No guarantees that the council can offer anyone, they cannot say it is safe. They can print as many papers as they like, a dump is a dump, is a dump, no matter what chemicals the are pouring into it. The landfill site in Ballinasloe has been there for donkey's years and what effect that is having on the River Suck we don't know and we won't be told (GCOI01 – 42, 43).

The issue of trust and the relationship between the public and local authorities is discussed in the following sections.

8.6 Trust and Transparency

Part of the fear expressed by respondents in relation to both incineration and landfill is based on a lack of trust of regulators and waste managers, which is clearly indicated in the quotation used above. This articulation of a lack of trust in regulators mirrors the UK findings of research conducted by Harrison *et al.* (1996) on environmental responsibilities. A component of this mistrust is based on the respondent's recognition of the uncertainty that exists, even amongst experts, about the impact landfilling or incineration will have on people and environments. However it is also partly based on a feeling that policy and politicians are not necessarily always committed to protecting the health of their constituents:

> Nobody wants it in their backyard because they are thinking of the dump that was in Gort that was smelly, but they are no longer smelly. They said that the nearest house would be a mile away. And they have guaranteed that there will be no smell. But I'd say people don't trust the guarantees and it is terrible because we have become very cynical and we don't believe them [the local authority] (GCOI09 – 37).

In addition to scepticism about political intentions, it is clear from the above quotation that people can lack trust as a result of personal experience (previously discussed in Chapter 6). From a review of the interview discussions it was clear that a history of poorly managed landfills in Galway County has influenced a lack of faith in new waste management infrastructure and the images of older poorly managed sites appear to shadow new proposals and developments in waste management infrastructure. As Slovic (1997) notes once trust is lost, it can take a long time to regain.

The issue of trust, in particular a lack of trust directed towards the local authority, and transparency, particularly with regard to disposal of waste and recyclables and income from environmental levies, winds through all of the phases of this research. In the questionnaire survey when respondents were asked to comment on concerns over facilities in the area one issue raised frequently was '*Where is the collected waste going*?' Again in a later section, when asked what they would like more information on several respondents stated '*How Local Authorities are dealing with the waste?'* and '*Where is it* [recyclables] *all going?*' This lack of trust and transparency provokes the opinion that, as one respondent put it, '*Why should we bother recycling if it's all being dumped in landfill anyway?'* Wynne (1996) discusses the issues of public trust and lack of agency and suggests that inaction is frequently a function of lack of faith in the value of an individual's opinion in relation to environmental policy-making.

Supporting the questionnaire results, the participants in the household waste minimisation exercise concluded that there is a need to provide information on the final destination of recyclables, in order to dispel the scepticism that exists regarding waste and whether recyclables are recycled. Also reflecting the opinions of many surveyed in earlier stages of

the research, students in the focus group discussion alluded to a lack of trust in the local authority:

> Maeve – But it is kinda hard to recycle in the shopping centre there is four different ones but everyone just put them into the one. The other day I was looking for somewhere to put some tin foil and it was packed. Then people will get fed up.
> Amy – Some people don't realise that they are all the same bin! We just know because we saw them changing the bag at the time.
> Karen – I thought it was really funny watching everyone running around it and they don't know it's all just the same bin.
> Amy – Now that we know that's it just one bin with four holes underneath we feel that we are just being conned.
> Maeve – There is a lot of change now, you see people looking for the right bin.
> (Galway, 16/17, Girls)

8.7 Relations with Local Authorities/Government

The respondents' relationships with the local authority and national government emerged as a significant factor in shaping respondent's waste management practices. This research found that the quality of the local authority/householder relationship is important because, it can affect a householder's attention to waste management practices and can impact personal senses of efficacy (see Chapter 6) in reducing the amount of waste produced. Although the local scale of government was a most common focus of discussion during interviews (which is unsurprising given that local authorities have responsibility for household waste management services) the relationship between householders and the national scale of government also generated some discussion.

While respondents recounted mixed personal experiences with the local authorities of the Galway region, some positive and some negative, there were common themes that emerged, including: the need for improved communication; the need to enforce regulations more stringently; and a sense of mistrust in the motivations of government, both local and national. However it was recognised by respondents that local authorities, in particular,

have a hard job and have to contend with limited funding and publics prone to non-compliance. While most respondents were concerned about the general state of the relationship between themselves and local authorities this was not always the case. For example, in Renmore, located in Galway city, respondents spoke of a positive relationship with the local authority:

> Yes, we do [have a good relationship]. In fact tonight they are taking some of us out to a Christmas celebration. It would be an expression of thanks for all our work they do it every year. It's a couple of engineers they are very good. Their heart and soul are in this thing [recycling]...Yes, we have plenty of contact with them we always have them there if we need them (GCI09 –39/40).

Renmore is, however, a mature housing estate that has a particularly strong sense of community and pride in its locality. The positive relationship with the local authority has been developed over a period of time and in association with good councillor-community relations. Equally the individual interviewed here was actively involved in local community activities and is therefore likely to be more positive about relationships than others might be. Individuals from other areas were less complimentary and talked about their negative experiences in dealing with their local authority. Poor communication was raised as a recurring theme. The quotations below, from both city and county respondents, articulate the feeling that communication should be improved:

> There is no communication between people and the local authorities. They will have to start getting out there and let people know who they are. Show people that they are doing something, because now people think they are doing nothing. I'm sure they are not, but that is the way it seems. So the communication is not happening as much as it could be (GCI02 –40).

> The Council don't give that much information, they keep their cards up their sleeves, they know themselves what they're doing is totally wrong, but they have to keep a cover on it, it's such a huge problem (GCOI01 – 27).

Improving communication is not a simple task. Traditional methods, such as public meetings, require people to give up time when many people already feel, as respondents confirmed, that they lead busy enough lives already. Equally when there has been a culture of limited participation over a period of time respondents suggested, as indicated below, that people will not necessarily be positively predisposed towards such activities:

> Local authorities have lots of meetings but they are not worth a damn. You have to get out there and do something about it. You have to lead by example, people won't go out on their own. People in general want a clean environment (GC109 –17).

One respondent, who works for the local health board, suggested that more innovative mechanisms needed to be introduced to improve communication, and therefore improve the relationship between communities and local authorities:

> So when it comes to us making changes in decisions and things like that we [the health board] have to ask the people and listen to them. Whereas prior to this we spoke and they were silent. So they really need to set up some sort of focus groups. Or do a pilot group with the public in one area identify one area that is good at recycling or has shown that people are interested. Like they do community alert in an area. Get people on board (GCOI06 – 31).

The quotation above identifies a form of deliberative, two-way communication. As discussed in Chapter 3 the use of deliberative communication techniques has recently been recommended following studies that focused on environmental policy generally (Eames *et al.* 2003) and waste management in particular (Petts 2001).

Similar issues of poor communication and mistrust raised in discussions of local authorities were reiterated during conversations about the Government. Respondents wanted to see clear results from the money that they are paying and the actions that they are taking. In the quotation below, for example, one respondent talks about the lack of transparency concerning the proceeds from the plastic bag levy:

> I mean you don't even know how long we are paying 15 cent for the plastic bags and what have they done with the money? If we saw where the money went then we would understand. But as far as we are concerned it is going into the government's pockets (GCI02 – 23).

Respondents also commented on a lack of public influence on national government activities. As one respondent stated 'I don't know if the government really listen or not' (GCI08 – 40). A number of respondents articulated concerns that this feeling of being ignored was exacerbated by their geographical location on the west coast of Ireland and the distance from the decision-making hub of Dublin:

> Yes, I think that they [politicians] really only look after their own areas and a lot of policies are only implemented in Dublin. Well the west is very badly looked after ... That landslide was terrible and Bertie nearly didn't appear he came alright but he got a very poor reception and rightly so especially a leader of the county, that's devastating. And the west is so poor. If that happened in Dublin there would have been four or five of them [politicians] out to see what had happened (GCI07 – 34,35).

The nature of the relationship between communities and local authorities is then complex, multifaceted and shaped by events past and present. Different geographical areas and sectors of society will have varying perceptions of the relationship between communities and local authorities and also diverse views on how that relationship could be improved in the future, not all of which will be compatible. Nonetheless, there was a generally accepted view amongst the interviewees that systems of governance at local authority level needed to be more transparent and accessible. One important means of achieving greater openness is to ensure that information provision is appropriate and up-to-date. As already mentioned in Chapter 6 in relation to this issue of information, there is no single way of providing material that will reach diverse local communities and innovative, multi-media messages, dispersed on a frequent basis, are likely to be necessary.

8.8 Fairness

Themes of fairness and justice surfaced throughout the research as significant variables which influence individuals' attitudes and behaviour towards waste management. As discussed in Chapter 5, the idea that only one area, received the waste for an entire region evoked notions of environmental injustice:

> Ballinasloe has had it [landfill] long enough. It was the county dump and then the dump for the whole region. That is very unfair and a lot of people objected to it they are coming across their houses with big heavy trucks and the walls are just not able to take it. I was involved in the protest to stop it (GCOI05 – 7,8).

Similarly notions of fairness and justice emerged from the discussion about waste charges. Many interviewees perceived it as unfair that charges are not standardised across the country.

> I was listening to a lady yesterday on Joe Duffy she didn't say what part of the country she is living in. I think she said somewhere around Louth. She lives off the main road and she pays a private collector and she has to pay almost 1,000 euro a year, she did say she has a big family. That is terrible (GCI06 – 9).

> In Dublin they only pay 195 for the bins and here we pay 175 for the smaller one and that's not right. If everyone paid their share it might not be so bad (GCI09 – 38).

The lack of consistency or standardisation of waste management facilities across the case study locations was a source of disenchantment for several respondents. A number of interviewees from Galway City queried their own laborious three-bin waste separation techniques, when they discovered that people living down the road, across the border in County Galway, did not have to separate their waste. In addition there was a perception that the perceived burden of environmental activity falls unequally in society; that those who are civically minded perform the majority of environmental tasks:

> Twice a year we do a general clean up but it is not well attended. People would take the weeds from outside their houses and help around generally. We have a great neighbour around the corner, because when they planted trees they should have put the membrane down first to stop the weeds but that man spent two days just digging up the weeds. I did the top of our own road and it took me two hours. Nobody helped me, but it looked lovely when it was finished. The woman next door would help me but she has a bad back and like everything it is always left to a few. If everyone did outside their own house it would be a great help. ....People are asked to come out to clean up on the day and they don't come. There is a retired gentleman and he keeps the piece near him done, people feel that if someone else is doing it why should I? we will leave it to them (GCI05 – 39,54).

The notion of free-riding on the contributions of others is often an area of conflict with regard to many environmental issues. The environment in itself is a public-good, and as a result each individual has a share in it regardless of their contribution.

8.9 Conclusions – Contextual Variables

The emphasis of previous research on the influence of personal and situational variables in shaping environmental behaviour has meant that the study of contextual variables as determinants of environmental behaviour has largely been ignored. This is grievous omission in light of the findings presented in this chapter which purport that waste management attitudes and behaviour are unequivocally influenced by variables inherent in social systems or particular social settings. For example, the research established that social influence, or a change in the judgements, opinions and attitudes of an individual as a result of being exposed to the opinions of others (Van Avermaet 2001), was a key variable influencing waste management attitudes and behaviour. Supporting research conducted by Oskamp *et al.* (1991) and Taylor and Todd (1995), the findings discussed in this chapter reveal that family, neighbours, peers and others in the community are perceived as influential in determining an individual's waste management behaviour. However, reflecting in part Phillips' (2000) research, while social influence can often result in

improved waste management behaviour, the research also found that the inactivity and illegal behaviour of some individuals can negatively impact others and may erode their commitment to positive waste management behaviour, particularly if the poor behaviour goes unpunished.

Other issues emerged from these findings on social influence, including the view that improved waste management is not yet a recognised social norm. In every culture there are norms which define the parameters of appropriate social action. As Beirhoff (2001) explains, people spend the majority of their time with relatives, colleagues, or friends in which social norms and rituals of interaction have been established. It was evident in remarks made by students and respondents who were active recyclers and felt others thought their participation in positive waste management actions was unusual, that improved waste management was not an established social activity. Acknowledging that it is an idiosyncrasy of human nature to want to conform, this perception that positive waste management actions are not the *norm*, emerges as a key concept shaping waste management attitudes and actions.

In addition the notion of community or civic spirit and the influence it has on attitudes towards waste management emerged as a key theme from these findings on social influence and from other discussions throughout the chapter. Respondents from areas that exhibited such positive spirit felt that if you had good atmosphere within a community then people would be more inclined to work to preserve it. However, reflecting Selman's (1996) research on sustainability in local areas, the majority of interviewees discussed a perceived trend in the erosion of community spirit. Respondents generally seemed resigned to the fact that some people were just more civicly-minded than others, that it was a natural predisposition rather than socially learnt behaviour, and as such nothing could persuade non-joiners to participate. In line with this the majority of interviewees felt that the same people were left carrying an unequal burden of civic duties, implicitly referred to the theme of fairness. The concept of fairness re-emerged from discussions over the lack of consistency or standardisation of waste management facilities across the case study locations was a source of disenchantment for several respondents. In addition, discussions about fairness sparked comments about wider unrest at the perceived neglect of Galway City and County by politicians on more general issues.

In contrast to other environmental behaviours and confirming the research conducted by Linden and Carlsson-Kanyama (2003), reviewed in Chapter 3, this research revealed that social influences and notions of identity have a particularly significant role to play in the management of waste, and this was acknowledged by research participants of all ages. For example the physical act of putting out waste or recyclables in front of one's house is a very visible action in comparison to other environmental activities such as energy conservation which is perhaps not as open to scrutiny by peers. Reiterating the notion that positive waste actions are not yet social norms, this research discussed how positive waste management activities such as recycling or purchasing products with less packaging, are often viewed as expressions of personal identity. Indeed, furthering a topic raised in Chapter 5, the findings in this chapter discuss perceptions of Ireland as a consumer society and current trends of consumption. Several older respondents reflected on an age when everything was not as disposable. In particular, echoing Hobson's (2003) findings on the social and cultural norms of consumption that often overshadow environmental concerns, the current research highlighted the notion that in the present day convenience often outweighs environmental concerns. Also in support of Hobson's conclusions, the power relations between manufacturers and consumers were implicitly identified by respondents as variables influencing waste management attitudes and actions. Overall the current research identified a need to consider the cultural politics of consumption (Nash 2001).

The under-researched area of the role of national culture in shaping waste management attitudes and behaviour emerged from the findings discussed above. In addition to the generalised assertion that as a culture the Irish people have certain traits which influence their participation in any activity, respondents in the current research project frequently cited the good waste management practices of other European countries, particularly Germany and the Netherlands, as waste management models that Ireland should adopt. However a perception which emerged from this cultural discussion links the positive waste management practices of other cultures with the notion that citizens in these countries appear to have trust in their respective governments. In comparison, a lack of trust in government, both local and national, was identified by the majority of interviewees in this research. This articulation of a lack of trust in regulators mirrors the UK research conducted by Harrison *et al.* (1996) on environmental responsibilities. In addition to a lack of faith in authorities, this research identified a distrust of the science, and discussed the

link between trust and discourses of risk. The research, reflecting the work of Slovic (1997) highlighted that certain types of waste disposal infrastructure were viewed as potential risks to human health and the environment. Respondents' perceptions of risk appeared to be influenced by their proximity, or not, to any proposed development; their personal previous experience of an event/facility; lack of clear information; the media; and the aforementioned distrust of authority. In particular, discussions on the topic of incineration brought to light the amount of confusion and uncertainty that appears to exist over waste management infrastructure.

Overall, respondents identified a need for increased transparency on waste issues. In particular the research identified a call for information on the final destination of waste and recyclables, and levies from plastic bags. Tied up with concepts of risk, trust and transparency are perceived senses of responsibility. Even though the most frequent response to questions about responsibility was that everyone, every individual, had a role to play in the proper management of waste, several interviewees acknowledged that, beyond the practical and logistical barriers identified in Chapter 7, individuals operate within wider social and political structures over which they feel they have little influence. Supporting research conducted by Bickerstaff and Walker (2002) on the issue of air pollution, the findings discussed above identified a general transference of responsibility for waste management towards government, educational institutions, and others in society. In addition, specific to the issue of waste, the research identified the transfer of responsibility for waste management to manufacturers. In line with research conducted by Blake (1999) Burgess *et al.* (1998) and Macnaghton and Jacobs (1997) this research identified an incongruity, whereby, even though government institutions are trusted least, they are regularly perceived as the ones responsible for causing environmental problems and subsequently responsible for solving them. The research finally revealed that the quality of the relationship between individuals, communities, local authorities and national government are vital variables shaping public attitudes and behaviour towards waste management. However, these relationships are complex, multi-faceted and shaped by events past and present. In addition to identifying a sense of mistrust in the motivations of government, both local and national, this research identified a need for improved communication; the need to enforce regulations more stringently; and a need for more transparency and accessibility.

The use of a grounded theory approach in this research has resulted in the emergence of many of these contextual variables. The following chapter will discuss the value of the methodologies employed in this research for investigating public attitudes and behaviour towards waste management and themes and issues which emerge from the complete research findings.

Chapter 9: Discussion and Conclusions – Public Attitudes and Behaviour Towards Waste Management

9.1 Introduction

This chapter considers the results presented in the preceding chapters in light of previous research on environmental attitudes and behaviour and the environmental value-action gap. It examines the efficacy of the methodologies outlined in Chapter 4 for researching public attitudes and behaviour towards waste management. The chapter begins with a discussion of the emergence of value-action gaps in waste management in Galway. It then provides a synthesis of the numerous variables which this research identified as factors that shape public attitudes and behaviour towards waste. The wider implications of the research for theory and policy are discussed. The chapter then reflects on the conceptual and methodological approaches taken during the research and broadly considers approaches to improve both public waste management behaviour and public participation in waste management policy. The final section presents a summary of the thesis and considers avenues for future research in this field.

9.2 Value-Action Gaps in Waste Management

Mirroring the findings of previous studies (Faughan and McCabe 1998; Drury 2000; Drury 2003), conducted in Ireland on public attitudes and actions towards the environment in general, this research identified a growing concern about the environment and waste management. Focusing specifically on the topic of waste management, this research identified that value-action gaps exist in relation to waste management in Galway. The questionnaire initially highlighted these ambiguities and apparent contradictions between attitudes towards waste and individual waste management actions. For example, the results from the quantitative survey concluded that respondents' attitudes towards waste management appeared to be (at least superficially) contradictory: problems of household waste were recognised for example,

but they were not necessarily perceived by the householders as being of their own making. In addition, in line with previous research conducted on the environmental value-action gap (Blake 1999), this questionnaire survey highlighted that few people undertake waste management activities that entail significant modifications to their lifestyle, but most are prepared to participate in initiatives which require little effort; where a door-to-door recycling collection was available for example, higher rates of involvement in recycling were recorded, but few people made extra efforts to dispose of waste that was not collected from them. Results derived from the extensive questionnaire study of respondents in Galway provided preliminary indications of the reasons behind householder action or inaction towards waste management. However, additional qualitative research was undertaken to gain a better understanding of the reasoning behind public attitudes and actions towards waste.

9.3 Deconstructing the Rationale for Public Attitudes and Behaviour towards Waste Management

Taken together the various strands of the research identified numerous variables that shape waste management attitudes and actions. This section synthesises and discusses the main findings from each category of variables – demographics, personal, practical and contextual, respectively.

9.3.1 Demographics and Public Attitudes and Actions towards Waste Management

As demonstrated in Chapter 5 the results of this research revealed that waste management attitudes and waste management behaviour varied when the variables age, gender, occupation, location, and housing tenure were examined.

Previous research examining the relationship between age and environmental behaviour does not report consistent findings. Some studies, such as Steel's (1996) research, contend that age has no correlation to environmental behaviour. This research identified that for example, when compared with respondents from other age categories, respondents aged over 70 (i) exhibited different attitudes towards the problem of waste, (ii) identified different waste problems and (iii) in some cases provided different motivations to explain their action or inaction with regard to waste management. Inconsistencies were conspicuous in discussions over the role of

younger generations in the management of waste. Many survey respondents, both old and young, commented that young people were a main source of waste problems, such as litter and fast-food waste disposal, and perceived young people as having an ambivalent attitude towards waste management. However, the younger generations were viewed by other research participants as more likely to be involved in environmental behaviours than older generations and were proposed by older research participants as a decisive part of future positive environmental actions. Overall, the results supported Barr's (2002) findings that older age groups tend to reduce and minimise waste more. However, expanding on Barr's results, the current research asserted that the rationale behind this finding is that individuals in older age groups had been raised in an era when recycling and minimising waste were practical, every-day, money-saving actions and were not necessarily for the sake of the environment.

Several researchers (Stern *et al.* 1993; Steel 1996; Buckingham-Hatfield and Matthews 1999) argue that gender differences emerge in relation to environmental attitudes. Research conducted by Van Liere and Dunlap (1980) revealed that women were more likely to be more environmentally friendly than men. The results from Galway suggest that although more women than men were surveyed, levels of environmental concern did not differ remarkably. However, a notable exception where male and female opinion differed was over the identification of favoured waste management techniques: women tended to be pro-recycling, whereas men were more inclined to select a technical solution to waste problems, such as incineration or landfill extension.

Students and respondents living in apartments were the largest groups who rated themselves as poor managers of waste, with regard to occupation and housing type respectively. Indeed results from the practical household waste minimisation exercise appear to confirm this evaluation of their behaviour. From the results discussed in Chapter 5, location emerged as another important factor in shaping attitudes and behaviour towards waste. Some waste problems were identified specific to certain locations. The research revealed that the provision of information and facilities varied with location and as the preceding discussion noted, where facilities were available higher rates of involvement in recycling were recorded. The notion that students and those living in apartments perceive themselves as poor at managing waste

and are perceived by other respondents as poor at managing waste relative to those living in owner-occupied, terraced, detached or semi-detached homes is perhaps related to these location factors. Across this case study region, the majority of students and respondents living in apartments did not have a door-to-door recycling service and most felt that they did not have accessible waste separation facilities.

Overall, these findings highlight the diversity in attitudes and actions towards waste management on the basis of variables such as age, gender occupation, and housing type. Reflecting exclusively on these findings, the need emerges for policy-makers to acknowledge and incorporate a wider variety of individuals in future waste management initiatives.

9.3.2 Personal Variables and Public Attitudes and Actions towards Waste Management

All of the variables outlined in the literature review (Chapter 3) regarding previous research investigating the impact of personal variables on environmental behaviour were evident in the results presented in Chapter 6. However, the extent to which each personal factor influences waste management behaviour varies. For example, overall, almost half of respondents in the questionnaire identified two personal reasons – 'concern for the environment', and that it was 'horrible to see litter everywhere' – as prime reasons to manage their waste in an environmentally-friendly manner. However, when the qualitative research stages were undertaken a range of additional factors were identified as significant in shaping behaviour. Indeed, many variables that were identified as personal variables were in fact linked to wider social, cultural, economic and political factors.

The findings from the qualitative stages of this research support the hypothesis that some individuals are motivated by altruism; at least they articulate that they manage their waste in an environmentally-friendly manner out of concern for nature and the welfare of others. This finding contrasts with Barr's (2002) conclusions from research on household waste management in the UK. Mirroring the findings of De Young (1986) and Barr (2002) several respondents cited a feel-good factor, or the satisfaction they derived from performing the waste management action as reasons for action. In contrast, many of those who rated

themselves as poor or very poor at managing waste (11 per cent of all respondents) proffered the variables laziness and apathy in defence of inaction with regard to waste management.

As identified in Chapter 3 little empirical research has been conducted linking the role of experience with environmental behaviour. However, the qualitative findings from this research indicate that practical experience of a waste management activity, experience of a waste technology and other life experiences, such as work or hobbies, can directly influence an individual's action or inaction with regard to waste. In particular the results discussed in this chapter revealed that *previous experience* was viewed as a factor which shaped re-using and minimising behaviour.

In addition, these results highlight that certain personal variables can influence some waste management activities and have a negligible impact on others. For example, the results revealed that *previous experience* was viewed as a variable which predominantly shaped re-using and minimising behaviour in contrast to other behaviours such as recycling. Previous experience also appeared to influence waste management attitudes and behaviour at a policy level; for example influencing either opposition to or support for waste management infrastructure.

The questionnaire results indicate that a relationship exists between an individual's action and his/her perception of the public's role in environmental policy making. Overall, replicating the findings of UK research conducted by Hinchliffe (1996), several respondents in the current research expressed the futility of taking action as an individual; they felt that their actions might go unnoticed. These findings have direct implications for policy-makers in the waste arena. As discussed in Chapter 2, government attempts to change attitudes and behaviour towards the environment and waste management in particular, such as *It's Easy to Make a Difference* and the *Race Against Waste* campaign, are both targeted towards individual action. The findings of this research highlight the irrelevance of such campaigns as they fail to take into account the social, cultural and political constraints on people's everyday lives.

It is evident from the results discussed thus far that the variables identified throughout this research are not clear-cut; they vary, for example, when demographic variables are examined. The results presented in Chapter 6 highlight that variables that were identified throughout the initial questionnaire stages of research as personal variables are intrinsically linked to broader discourses. For example, while many respondents overtly commented that they were 'just that type of person' or that they were simply in the habit of recycling, there is an implicit need to consider the role of social norms as key drivers for constructing such habits (social norms discussed below). In addition, the findings summarised above allude to the role and responsibility of individuals in wider society and question government attempts to direct responsibility for environmental action towards the level of the individual.

9.3.3 Practical Variables and Public Attitudes and Actions towards Waste Management

The examination of practical variables – contained within Chapter 7 – not only revealed a wide range of physical barriers to improved waste management behaviour, for example a lack of facilities, but in addition, discussed perceptional obstacles such as lack of time. Supporting Phillip's (2000) research on general environmental activities, the findings outlined in this chapter discuss how inconvenience, lack of time, lack of transport and lack of space were all reasons proffered by various respondents for not managing waste in an environmentally-friendly way. In addition, the findings above posit that individuals' perceptions of time and space available to them may be related to priorities, and suggests that the way in which individuals prioritise waste management activities, such as recycling, amongst other day-to-day activities or commitments, will shape their waste management behaviour. As Barr *et al.* (2003) remark with regard to availability of time and space, a perceptional issue inevitably exists in conjunction with a structural issue.

Within the practical variables classification certain variables stand out as being important influences on waste management behaviour. In particular, in relation to the existing literature on the influence of practical factors in shaping environmental behaviour, participants in this research perceived facilities as one of the most significant variables influencing people's actions or inaction with regard to waste. While the questionnaire results supported the findings

of research conducted by Blake (1999) in the UK and Steel (1996) in the US (that where a door-to-door collection was available higher rates of involvement in composting and recycling were apparent), data from the qualitative research phases additionally highlighted that these door-to-door collections had to be frequent, regular, easy to use and appropriate to housing conditions. However, a lack of consistency in facility provision was viewed as a barrier to improved waste management and evoked wider notions of fairness and personal efficacy. In the same way the mismanagement of facilities was perceived as a potential deterrent to positive waste actions. The notion that individual actions are limited as they operate within wider social systems is alluded to at this point.

Another practical variable, information, was discussed in a variety of contexts, from the information used by waste service providers to communicate the practicalities of waste management to communities to the provision of information by experts about the impact that waste can have on the environment. Respondents established that the provision of accurate information through a range of different media was essential to ensure that waste management services ran smoothly. Supporting De Young's (1993) research, it was also suggested that good information provision could lead to greater public participation in waste management initiatives and improve channels of communication between the public and other waste management actors. In line with the research of Macnaghten and Urry (1998) the topic of information elicited questions regarding trust; in several cases a lack of information begot a sense of distrust. For example, respondents raised doubts over the final destination of their waste and recyclables. Overall, the findings implied that the provision of information in isolation cannot change behaviour.

Concurring with research conducted in Sweden and the US, by Linden and Carlsson-Kanyama (2003) and Price (2001) respectively, the findings discussed in this chapter revealed that forms of economic measures were perceived as efficient in shifting people towards pro-environmental behaviour. Indeed supporting the results from a recent European survey entitled *Sustainable Consumption and Production in the European Union* (2004) the current findings indicate large support for the Irish national levy on plastic bags. However, inconsistent charging for waste services was a source of disgruntlement among some respondents and

evoked wider notions of fairness. In addition, supporting Linden and Carlsson-Kanyama's (2003) research into environmentally-friendly disposal behaviour in Sweden, administrative measures implemented in Galway appear to have met with success in shaping the behaviour of householders towards waste management. However, in contrast to the Swedish research, regulations on backyard burning have not met with complete compliance in Galway, with several respondents proffering cultural variables as reasons for this non-compliance. This research found that the perceived lack of enforcement of the law and related fines was cited as a barrier to improved waste management behaviour by many interviewees.

Collectively these findings on individual practical variables such as time and space highlight first, the need to examine the topic of waste management attitudes and actions in a contextualised qualitative manner and second, that quantitative research methods are often limited in their ability to investigate individual personal circumstances. In addition, the research findings reviewed above, not only highlight the wide diversity of variables that influence waste management attitudes and behaviour, but posit that different variables play a vital role in shaping different waste management activities. For example, results from this research, concurring with Barr's (2002) research, revealed that recycling behaviour appears to be predominantly influenced by practical factors as opposed to personal variables. Remarks from respondents and particularly participants in the household waste minimisation exercise, broadly imply that recycling is situation specific and that it can be easy to 'get into the habit of recycling'. In contrast, the results found that waste minimisation behaviour appears based on personal variables; people who always reused or minimised waste, those who grew up reusing and minimising waste, were more likely to continue these practices. The household exercise highlighted the fact that reusing and minimising waste are difficult practices to learn, in comparison to other waste management activities such as recycling or composting.

It is interesting to note that previous research on attitudes and actions towards waste (such as De Young 1986: Vining and Ebreo 1990; Hopper and Nielsen 1991; Linden and Carlsson-Kanyama 2003) tended to focus primarily on recycling activities, which along with other options further down the waste management hierarchy, such as disposal, could be classified as re-active waste activities. Empirical research on the topic of attitudes and actions towards

waste has tended to ignore activities higher up the waste management hierarchy such as the prevention and minimisation of waste (categorised here as pro-active waste management actions). Similarly, as reviewed in Chapter 2, despite the EU's ideal objective of shifting attention to waste aspects higher up the hierarchy, the significant emphasis of the Irish government's approach to waste management still revolves around re-active waste options such as incineration or disposal to landfill. At a wider level, this emphasis on options such as disposal or recycling is perceptible through the use of the term 'waste management' throughout national and international environmental policy statements and academic literature; waste is put forward as something to be managed as opposed to prevented. The importance of examining waste in its totality cannot be underestimated. This research posits that it is essential to look beyond recycling as an activity to improve the waste problem. As discussed in Chapter 2 recycling in Ireland is increasing, however it is failing to keep up with waste production and waste amounts are continuing to rise. There is an obvious need to move towards waste options further up the waste hierarchy. Furthering previous studies, this research examined all aspects of the waste hierarchy, prevention and minimisation, in addition to other options such as recycling, composting and disposal.

9.3.4 Contextual Variables and Public Attitudes and Actions towards Waste Management

The emphasis of previous research on personal and situational variables shaping environmental behaviour has meant that the study of contextual variables as determinants of environmental behaviour has largely been ignored. However, the findings presented in Chapter 9 purport that waste management attitudes and behaviour are unequivocally influenced by variables inherent in social systems or particular social settings. In particular, in contrast to other environmental behaviours and confirming the research conducted by Linden and Carlsson-Kanyama (2003), this research revealed that social influences and notions of identity have a particularly significant role to play in the management of waste, and this was acknowledged by research participants of all ages. For example, the physical act of putting out waste or recyclables in front of one's house is a very visible action in comparison to other environmental activities such as energy conservation which is perhaps not as open to scrutiny by peers.

Hence, the research established that social influence was a key variable influencing waste management attitudes and behaviour and that, in line with research conducted by Oskamp *et al.* (1991) and Taylor and Todd (1995), family, neighbours, peers and others in the community are perceived as influential in determining an individual's waste management behaviour. However, reflecting in part Phillips' (2000) research, the research also found that the in-activity and illegal behaviour of some individuals can negatively impact others and can act as a deterrent to improved waste management behaviour. One of the primary issues which emerged from these findings on social influence, was the view that improved waste management is not yet a recognised social norm. For example, echoing Hobson's (2003) findings on the social and cultural norms of consumption that often overshadow environmental concerns, the current research highlighted the notion that in the present day convenience often outweighs environmental concerns.

Community or civic spirit and its role in shaping attitudes towards waste management emerged as another main theme from these findings. Even though respondents from localities that exhibited such positive spirit felt that if you had good atmosphere within a community then people would be more inclined to work to preserve it, the majority of interviewees discussed a perceived trend in the erosion of community spirit. This trend is also identified in Selman's (1996) research on sustainability in local areas. In addition, some respondents seemed resigned to the fact that some people were just more civicly-minded than others, that it was a natural predisposition rather than socially learnt behaviour, and several respondents commented that as such, nothing could persuade non-joiners to participate. In line with this many interviewees felt that the same people were left carrying an unequal burden of civic duties, implicitly referring to the theme of fairness. This notion of civicness relates to the previously discussed personal variable, altruism. In addition, it is interesting to note that, (continuing a point raised in the conclusion of the previous section) while some waste activities can be conducted at the community level, for example community members can participate in re-active actions – they can pick up litter for others, recycle, compost and dispose of waste, a community effort can only do so much. Pro-active waste activities such as prevention and minimisation of waste are less likely to be tackled at this level. The concept of

fairness re-emerged from discussions over the lack of consistency or standardisation of waste management facilities across the case-study locations; this was a source of disenchantment for several respondents. Indeed, discussions about fairness sparked comments about wider unrest at the perceived neglect of Galway City and County by politicians on more general issues.

In some cases the influence of prevailing cultural norms was suggested as an explanation for poor waste management behaviour in Ireland. In this sense a particularly Irish attitude towards authority, the environment and waste in particular was proposed. This culture was not seen as conducive to positive waste management practices, particularly in comparison to other European cultures. Overall a lack of trust in government both local and national was identified by the majority of interviewees in this research. This articulation of a lack of trust in regulators mirrors the UK research conducted by Harrison *et al.* (1996) on environmental responsibilities. In line with research conducted by Blake (1999) Burgess *et al.* (1998) and Macnaghton and Jacobs (1997) this research identified an incongruity, whereby even though government institutions are trusted least, they are regularly perceived as responsible for causing environmental problems and subsequently responsible for solving them.

Chapter 8 also discussed the link between trust and discourses of risk. The research, reflecting the work of Slovic (1997), highlighted that certain types of waste disposal infrastructure were viewed as potential risks to human health and the environment. Respondents' perception of risk appeared to be influenced by their proximity, or not, to any proposed development; their personal previous experience of an event/facility; clear information or lack of it; the media; and the aforementioned attitude to authority. In particular, discussions on the topic of incineration brought to light the amount of confusion and uncertainty that appears to exist over waste management infrastructure. Overall, respondents identified a need for increased transparency on waste issues. Combined with concepts of risk, trust and transparency are perceived senses of responsibility. Even though the most frequent response to questions about responsibility was that every individual had a role to play in the proper management of waste, several interviewees acknowledged that, beyond the practical and logistical barriers identified in Chapter 8, individuals operate within wider social and political structures over which they feel they have little influence. Supporting research conducted by Bickerstaff and Walker

(2002) on the issue of air pollution, the findings discussed above identified a general transference of responsibility for waste management towards government, educational institutions, and others in society. In addition, specific to the issue of waste, the research identified the transfer of responsibility for waste management to manufacturers.

Finally the research found that the quality of the relationship between individuals, communities, local authorities and national government are vital variables influencing waste management attitudes and behaviour. As well as identifying a sense of mistrust in the motivations of government, both local and national, this research identified a need for improved communication; a need to enforce regulations more stringently; and a need for more transparency and accessibility.

Throughout all stages of the research – questionnaires, interviews, focus group discussions and the household waste minimisation exercise – respondents cited, often implicitly, contextual variables as critical factors influencing their waste management attitudes and behaviour. The overlap between the different variables is obvious from this review of contextual variables. During early research into environmental management many of the problems causing environmental concern were largely assumed to be scientific, such as lack of technical solutions or information (Parker & Selman 1999). It is clear from the findings of this thesis however, that some of the greatest barriers to improved waste management behaviour are social, cultural and political ones.

Overall, specific to waste management behaviour the results from this thesis identified that personal variables were the largest group of variables identified by questionnaire respondents as prime reasons to manage their waste in an environmentally-friendly manner. In addtion, the quantitative research highlighted the importance of factors such as facilities and information. These results would appear to concur with Steel's (1996) research which suggests that variables such as provision of a service and accessibility are good predictors of household waste management behaviours such as recycling. However, as discussed throughout the results chapters, the results from the qualitative aspects of research highlighted a range of additional variables which are important in shaping waste management behaviour. The primary objective

of the in-depth qualitative methods was not to provide statistically significant conclusions; rather it was to gain a greater understanding of the participant's attitudes and behaviour towards waste. Consequently, it is not possible to make statistical statements about the relative importance of each factor in shaping waste management behaviour.

As considered in the next section, a clear implication of these results for the existing body of research is that in order to fully examine the gap between theory and action the cultural, political and social constructions that underlie environmental behaviour need to be examined. In this thesis, contextual themes of risk, responsibility, trust and fairness emerged as a direct result of the application of a grounded theory approach. An evaluation of the grounded theory approach and the methodologies employed to empirically investigate public attitudes and actions towards waste are reviewed in the following section.

9.4 Public Attitudes and Behaviour towards Waste Management – Advancing Theory and Policy?

As discussed in Chapter 3, early research on attitudes and behaviour attempted to measure individual attitudes and actions and, grounded in a rationalistic model, viewed reasoned human agency as the key determinant of all action. Indeed, the previous models, frameworks and paradigms outlined in Chapter 3, such as Fishbein and Ajzen's (1975) *Theory of Reasoned Action*, Dunlap and Van Liere (1978) *New Environmental Paradigm*, and Barr's (2002) *Conceptual Framework for Environmental Behaviour*, were developed in an attempt to research the determinants of behaviour, using quantitative methods. By highlighting firstly, the wide diversity of variables that influence waste management attitudes and behaviour, and secondly, the importance of incorporating contextual variables and acknowledging that there are broader social and political arrangements that influence public attitudes and actions towards waste management, this thesis contends that previous attempts to produce frameworks or models of behaviour are undesirable since individual choices are personally and socially contextualised to a high degree and therefore cannot be predicted. In establishing that waste management is a process that is situated within a broader framework of social and political structures and cannot be detached from those contexts, the findings presented in this thesis support other research projects investigating attitudes and actions in other fields of

environmental policy (for example Blake 1999; Davies 2002; Hobson 2003; Shove 2004). Recognising that waste management in Ireland is constantly evolving and that public waste management behaviour is in a state of flux, the *grounded theory* approach adopted for this research proved effective for researching this topic. Overall, the approach used in this thesis offers an innovative method of researching public attitudes and actions towards waste in an Irish setting. The methodology, incorporating both quantitative and qualitative methods, employed in this research enabled the multiple dimensions of attitudes and actions towards waste to be empirically tested, consequently furthering previous research conducted on public attitudes and actions towards waste management in Ireland. Throughout each stage of the research process participants were asked about their opinions and activities as they relate to waste management, and to identify, drawing on their own and their community's experences, the main difficulties and opportunities for managing household waste. Using a case-study focus the research produced both essential baseline quantitative data on environmental attitudes and behaviour and more detailed qualitative information highlighting public understanding of value-action gaps in the environmental policy arena. While the quanitative research provided innovative baseline information about waste and established the existence of the value-action gap in waste management, the in-depth qualitative methods facilitated a greater understanding of participants' attitudes and behaviour towards waste. Specifically, the qualitative stages of research exposed the contextual factors that contribute to the development of different forms of public reasoning, factors that the previous research, discussed in Chapter 3, neglected. Hence, this research contributes to ongoing discourses of environmental behaviour by identifying numerous *new* variables that influence waste management atitudes and actions.

For the purposes of this thesis it was necessary to classify and discuss the arrangements of the numerous variables that influence waste management attitudes and behaviour, independently. However, one key point which emerged from this research is that these variables do not operate in isolation. The results chapters highlighted the interconnectivity of variables. As discussed in Chapter 8 many of the variables overlap and are tied to wider social, cultural and political structures. For example, a lack of practical structural support, such as a deficit of facilities or lack of enforcement of administrative measures (Chapter 7), can exacerbate an

individual's perception of civic responsibility (Chapter 8), as individuals question their waste management efforts, in light of a perception of waste management inaction by larger actors (for example local authorities). Considered collectively, the four sets of variables depict an overall picture of the many interrelated variables that shape public attitudes and actions towards waste management. However, there are merits and limitations to bringing together so many factors within one conceptual framework.

Firstly, with regard to some of the novel aspects to this approach, most of the research specifically examining attitudes and behaviour on waste, to date, has concentrated on recycling behaviour (Vining and Ebro 1990; Lansansa 1992) and has, in general, ignored other forms of waste management, for example prevention or re-use of waste. This research examined attitudes and behaviour towards all forms of waste management, recycling, re-use, prevention, minimisation, and disposal. Secondly this method enabled the identification of new variables which influence the shaping of waste management behaviour. For example, despite the dearth of empirical research linking the role of experience with environmental behaviour, the qualitative findings from this research indicate that practical experience of a waste management activity, have the potential to influence directly an individual's action or inaction with regard to waste. In addition, these results highlight that certain personal variables can influence some waste management activities and have a negligible impact on others. For example, the results revealed that *previous experience* was viewed as a variable which predominantly shaped re-using and minimising behaviour in contrast to other behaviours such as recycling. Previous experience also appeared to influence waste management attitudes and behaviour at a policy level; for example influencing either opposition to or support for waste management infrastructure.

Overall, the methodology employed in this research allowed for this wide range of variables to be identified and explored and it allowed the public themselves to identify the reasons for their action or in-action. Indeed, many of the previous research methodologies employed in the studies reviewed in Chapter 3 (for example Barr 2002) are grounded in a quantitative approach which could not incorporate these aspects. However, there are also limitations to the current research approach. For example, as discussed above, it is not possible to make statistical

statements about the relative importance of each factor in shaping waste management behaviour. The primary objective of the in-depth qualitative methods was not to provide statistically significant conclusions, rather it was to gain a greater understanding of the participant's attitudes and behaviour towards waste; i.e. the reasoning behind the value action gap. As considered in depth in Chapter 4, important aspects of this research such as the public's identification of a wide range of variables that influence their action or in-action with regard to waste management would have been neglected had quantitative methods been the exclusive methods employed in this research. The challenges involved in conducting both qualitative and quantitative research are considered at length in Chapters 4 and 5. However, one of the primary issues highlighted in Chapter 5 was that the lengthy questionnaire produced a large body of quantitative data covering a variety of topics relating to a variety of broad waste management themes. For the purposes of this research it was not possible to investigate the many emergent waste management themes however, this data could be utilised to develop future research projects. For example, utilising this base-line data there is potential to conduct more in-depth research specifically on reuse and prevention behaviours in Ireland or to undertake a comparative research study into waste management in urban and rural areas.

The research approach and subsequent results discussed in this thesis offer an important contribution to the ongoing debate concerning environmental behaviour and, as discussed later in this chapter, this research strategy could be utilised for future research to examine a variety of environmental behaviours. The objective of the current research was to uncover the theories that account for, and provide an understanding of, public attitudes and behaviour towards waste. By facilitating the generation of discourses of risk, responsibility and trust from the empirical results, in addition to identifying the other demographic, personal, practical and contextual variables that shape waste management attitudes and behaviour, the grounded theory approach provides a holistic perspective for studying public attitudes and behaviour towards waste management.

9.4.1 Narrowing the Value-Action Gap – Policy Recommendations for Improving Waste Management Behaviour in Galway

Waste management behaviour is the result of the interaction of numerous factors that are social, cultural and contextual on the one hand and personal on the other. Furthermore, as discussed above, certain variables can influence some waste management activities and have a negligible impact on others. There is no single straightforward model that can be developed to facilitate policy makers to input a waste problem and emerge with a one-size-fits-all solution; people and places vary too much. By the same token, simply informing people how to modify behaviour or establishing voluntary programmes are unlikely to progress far towards reduced waste production. This section considers some of the suggestions respondents provided for reducing the gap between their waste management concerns and waste activities, and drawing from the results of this research outlines broad policy recommendations for improving waste management behaviour in Galway.

The results chapters discussed the reasons people proffered for their current waste management practices and provided explanations of why their actions failed to match their concerns about waste management problems in Ireland. Approaching several of these problems is relatively clear-cut. For example, a common view held by respondents was that more improved and accessible recycling facilities should be provided. Clearly these types of improvements require financial backing and adequate planning. Yet, if these criteria are fulfilled, such practical demands are not necessarily difficult to meet. However, in addition to practical suggestions, such as more facilities and the enforcement of regulations, respondents provided other proposals for reducing the gap between their concerns and actions, which are less clear-cut both in their definition and operation. These included (i) increased and improved education for householders about waste management problems and the actions they could take to mitigate these problems and (ii) enhanced and appropriate consultation methods that would encourage householders to become more active in both household waste management activities and waste management policy making, and that would provide householders with channels for two-way communication with the providers of waste services.

As discussed in Chapter 8 improved education about positive waste management behaviour was the most frequently suggested mechanism for changing householders' behaviour. Three-quarters of all interviewees mentioned the role of education at some stage throughout the interviews. Education through formal schooling for children was the most common channel proposed as a means to change both attitudes and behaviour. It is assumed that providing information and facilities in schools would not only make younger generations more aware of the waste problems in Ireland and give them practical experiences of positive waste management behaviour, it would also have a knock-on effect to parents who would be pressurised by their children to reduce waste production in their households. While parents felt that their children played a role in shaping their waste management attitudes and actions, equally it emerged from the focus group discussions that students felt they were influenced by the activities of their parents and teachers. The difficulties involved with introducing environmental ethics and values into curricula were also recognised and discussed in Chapter 8. Although there was a general emphasis on the need for environmental education through schools, some respondents spoke about the need for improved education of the general public. However, creating appropriate educational waste management advertising is not simple or straightforward, as indicated by the mixed reactions of respondents to the recent advertisements that ran with the *Race Against Waste* campaign, discussed in Chapter 7. Many respondents felt that the shock tactics of the campaign were inappropriate and a small number of interviewees commented that they felt the waste problem in the adverts was over-exaggerated and resulted in people feeling further removed from the waste problem:

> I don't think the rubbish ads that are on at the moment are any good. They are a waste of time and everybody that I have talked to says the same. They have no impact, totally ineffective ... I know we saw the rubbish flying through the streets there, but we never saw where it came from or what input we have in that. And people never felt responsible for that particular [type of] waste. The TV would be effective if they had a more relevant ad (GCOI10 – 8-12).

Respondents perceived education as a crucial component of improving waste management behaviour, but they also felt that education had to be relevant and practical to people's circumstances. As discussed in Chapter 7, although information and education were seen as important elements of any transition towards better waste management behaviour, many respondents felt that, unaccompanied, such instruments would not necessarily resolve the existing problems. There was a sense that information and education from the top-down, from government or local government to communities, might even be counterproductive unless the relationship between governing authorities, waste service providers and communities was improved. As highlighted in Chapter 8 the nature of the relationship between communities and local authorities is often complex and marred by lack of trust and lack of communication. However, improving communication is not a simple task, as discussed in Chapter 8. Increased consultation was identified by respondents as one means through which such improved communication could be achieved. Otherwise respondents felt that waste management would not become a joint venture:

> Nobody is consulted. We don't have waste management committees for Gort, so there isn't a county one. So there is no forum for ideas or leaders in the country that is related to a modern population (GCOI06 –28).

Throughout many discussions with respondents there was a perception that while ideally there should be more involvement of the public in decision making and more consultation between waste management actors and householders the reality was that few people currently participate and many people, including a number of the respondents, would not prioritise such participation:

> [The] public should be very valuable, but how much effort are we putting in to it? (GCI06 – 36).

As reviewed in Chapter 3, there is a tendency within waste management to only consider the transfer of information about waste from service providers and other waste experts to householders and communities. However, the qualitative research conducted for this thesis,

and the research findings of other studies (see Petts 2001), suggest that the public themselves have a valuable role to play in terms of providing information for these waste experts. Householders, clearly, have a detailed understanding of their own waste-generating habits and the barriers and opportunities they face on a daily basis in terms of waste management practices. In addition to providing householder-driven information about waste management practices and establishing a two-way channel of waste management information provision, the action research stage of this project – the household waste minimisation exercise – was deemed by the participating households as a very successful mechanism for improving waste management behaviour. All of the participants in the household waste minimisation exercise established that the exercise was easy to carry out and had made them more aware of the amount and type of waste they were creating. Significantly they all noticed a reduction in their landfill rubbish over the course of the four-week exercise. Although acknowledging that conducting the exercise on a larger scale would not be realistic, the participants suggested that such home visits were one of the most successful ways of raising awareness about waste and improving waste management behaviour amongst households.

> Projects like this would make students more aware – people literally in their house saying you can recycle that or this (H3W4).

As experts of their own experiences householders should play an active part in waste management policy-making and two-way channels for information flows about waste management, such as this exercise, could enable improved communication between communities, householders and waste service providers.

Finally, on a different note, householders suggested that there might be a trend in waste policy-making and householder actions which will lead to an evolution in positive householder waste management behaviour over time. The majority of the participants in the research project acknowledged that waste practices had changed for the better, both in terms of government provision of waste facilities and in terms of household actions in relation to recycling. Indeed, respondents generally appreciated that local authorities in particular had many other important demands on their time and on their budgets. Several interviewees

discussed how they had observed waste management facilities evolving in recent years and that local authorities and service providers were to be praised for this. At the same time respondents recognised that there had been an evolution in people's attitudes towards waste:

> People are beginning to realise now maybe. It's just more awareness now because people see the advertisements around the place and there is a lot more effort now to keep places tidy and neat. People are now more aware of the damages of waste that was never seen before (GCI02 –9).

> That is where awareness comes from and people now love it and there is a feel good factor because people feel that they are helping the environment and that they are making a difference. Rather than chastising people if you show them say where that bottle goes … they might not be as likely to throw it out the next time (GCOI10 – 49).

However, respondents emphasised the need for continued encouragement and positive re-enforcement by local authorities and educators to promote good waste management behaviour and enable it to become second nature to householders:

> You really have to have the interest to do it [recycling] well … some people will keep doing it anyway, but most won't if they don't get the encouragement (GCOI07 –69).

Changing waste management behaviour is not a simple or straightforward exercise. As this thesis posits, waste management behaviour is dependent on a series of interrelating social, cultural, economic and political factors. There is no definitive approach to enable policy makers to change the actions of householders in relation to waste management. Drawing from the results of this research there are, however, a number of broad recommendations that can be made to facilitate improved household waste management behaviour in Galway:

1) Improve two-way communication between waste actors from local authorities, through manufacturers to communities and householders to create better understanding of different perspectives in relation to waste. Such communication will enable policy-makers to understand better why certain negative waste management practices persist even when most people are aware that waste management is a significant problem in Ireland.

2) Circulate appropriate and targeted information about waste issues throughout society. Ideally, the information needs to be developed by sources that are trusted by all waste management actors for it to be effective. The preceding suggestion to improve two-way communication between publics and policy-makers may assist in improving levels in trust. As children are influenced by the practices of older generations, education should not solely be directed towards school children; educational information needs to be spread throughout all of society.

3) Develop improved waste management facilities. The findings discussed in this research highlight that making improved waste management activities practical for householders is obviously a vital step for the success of waste management planning. Improved facilities will require appropriate funding, but with better communication structures and adequate information provision such increases in household waste management costs are likely to be more acceptable to those being charged.

9.5 Summary of Thesis

Chapters 1 and 2 of this thesis outlined the problem of household waste management and the approaches that have been used to both reduce waste and improve household waste behaviour. Despite the development of new national and regional waste management strategies, environmental-awareness campaigns, and surveys of public opinion that indicate that the Irish population is increasingly concerned about the quality of the environment and the problem of waste management, the introductory chapters exposed that there has been no decline in the amount of household waste being sent to landfill. Approaches to changing waste management to date have had very little effect. As discussed in Chapter 2 recycling rates have increased,

however this increase has failed to keep abreast of increasing amounts of waste being produced. The results discussed from Chapter 5 to the present chapter highlight the complexity of changing waste management behaviour. Bearing in mind the diversity of public attitudes and behaviour towards waste management and the multiple variables that influence these attitudes and actions, changing waste management behaviour is not a straightforward task. Overall, the results in this research have shown that behaviour is not, as posited within certain strands of psychology, exclusively the product of processes internal to the individual. Rather waste management behaviour is the result of the intersection of many variables that are social, cultural and contextual on the one hand and personal on the other.

Using Galway as a case study and utilising innovative research methods, this research successfully furthers previous studies conducted in Ireland and contributes to wider literature by establishing the existence of the value-action gap in waste management in Galway and providing an improved understanding of the factors which influence attitudes and behaviour towards waste management generally. Specifically, the research produced an original data set with base-line quantitative information on both public understanding of waste management issues and public attitudes and behaviour towards waste management (results primarily discussed in Chapter 5). In addition, the research enabled the public to identify the variables that shape their waste management attitudes and behaviour and identify the barriers to, and opportunities for, achieving more sustainable waste management (Chapters, 5 - 8). In accordance with sustainable development goals, this research project included children, who according to academics such as Knightsbridge-Randall (1999) are often identified as traditionally marginalised from policy-making procedures. There is however more research to be done in this area and future work could be extended to involve other groups, for example the Irish travelling community. The research not only examined the reasons the participants proffered to justify action or inaction with regard to waste, but also identified and considered the implicit contextual variables (Chapter 8) which contribute to an individual's reasoning. This concluding chapter discusses the theoretical and policy implications of the complete research and potential avenues for future research.

9.6 Conclusions and Future Research

Emerging from this research is the identification of a need for a more holistic approach to studies of environmental attitudes and behaviour, which necessitates the incorporation of a wider set of variables. Furthermore, the research identified the need to move away from attitude and behaviour research based exclusively on quantitative methods. The results of this research show that the diversity and complexity of human attitudes and actions are not suitable for investigation by quantitative techniques alone, and that a thorough understanding of the reasoning behind publics' attitudes and actions requires in-depth qualitative research methods and a more action-orientated research agenda.

Difficulties with the management of household waste are not specific to the island of Ireland. As discussed in the introduction to this thesis, waste presents a problem at global, supra-national and international levels. This final chapter discussed place-based recommendations for improving waste management behaviour in Galway. However, the research findings have large implications for a range of actors such as publics, private sector and policy-makers in the wider waste management field. Fundamentally, the results indicate that waste problems cannot be solved by technical solutions on their own and that there is a need for policy-makers to acknowledge and understand the social, economic, cultural and political issues involved in the management of waste. For example, the findings indicate that raising environmental awareness and providing structural facilities may be of little consequence if broader themes such as the public's perception of efficacy are not addressed.

The findings discussed in the preceding chapters challenge the current emphasis on individual action for environmental protection, whereby the responsibility for environmental protection appears to lie not with the government but with the individual. As discussed in Chapter 2, government attempts to change attitudes and behaviour towards the environment and waste management in particular, such as *It's Easy to Make a Difference* and the *Race Against Waste* environmental-awareness campaigns, are both targeted towards individual action. The discussion emerging from the results of this thesis advocates a shift from a focus on the individual towards a focus on the individual as part of society. As discussed previously, the findings of this research highlight the inappropriateness of such environmental-awareness

campaigns as they do not consider the social, cultural and political constraints on people's everyday lives. (However, this research acknowledges that, employed in conjunction with other initiatives that focus on the challenges identified throughout the research, such as trust, and efficacy, there is a role for these types of programmes). Furthermore, as commented by other researchers investigating changing environmental behaviour, 'the idea that people can be persuaded to change their behaviour supposes that behaviour is something that can be adjusted at will' (Shove 2004:9). Such an assumption is challenged by the results of this research, which posits that individual day-to-day activities are constrained and sustained by a range of collective social and cultural norms as well as physical infrastructure and wider institutions. Individual waste management behaviour occurs in social and cultural arenas in which certain practices, such as purchasing convenience products with excess packaging, are accepted as normal behaviour. Hence, as discussed in Chapter 8, it is necessary to promote improved waste management behaviour as a societal norm by permeating that wider social and cultural environment and advocating alternative and more sustainable waste management practices.

It is clear from the findings discussed in the preceding chapters that information is a vital element in the creation of social concern and awareness about waste issues. However, there is also a need for a more thorough understanding of (i) the type of information provided, (ii) the recipients' perceptions of that information and, importantly, (iii) the recipients' views of the information providers. There are opportunities for future research in this area which could evaluate the effectiveness of environmental education curricula and environmental-awareness campaigns and assess the communication strategies of local authorities.

The previous section (9.4) discussed the importance of two-way channels of communication for information flows about waste management practices, and advocated the use of action research in the form of a household waste minimisation exercise, as one mechanism for establishing householder-driven information about waste management practices. This action research method could be utilised by others in future research. For example, it could be applied in research investigating other environmental behaviours, such as, energy conservation in households.

Finally, this research highlights the need for further research to explore deliberative consultation procedures in the field of waste management. As considered in the final two chapters, two-way channels of communication for information flows about waste management practices are unlikely to produce the desired reduction in waste if there is a lack of trust between the actors involved. Throughout the results presented in this thesis numerous references were made to the lack of trust between the general public and local authorities. Enhanced understanding between waste management actors could lead to a reduction in mistrust and a more consensual system of waste management planning. Therefore the use of deliberative consultation mechanisms in the field of waste management should be further investigated. Several studies in European countries have been undertaken already, some in the waste field, such as deliberative mapping (Burgess *et al.* 2003) or community advisory councils (Vari 1995; Petts 2001) and some in other areas of environmental policy such as citizen's juries (Armour 1995; Keynon *et al.* 2003).

This thesis has provided an approach to researching public attitudes and behaviours towards waste management in Galway. This approach and elements of this approach can be transferred to examine attitudes and behaviours in other locations and fields of environmental concern, advancing both theory and policy.

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Appendix I – Copy of the questionnaire

SECTION A
This section is designed to get your opinion on waste management issues

Q1 Do you have a waste collection service?

- ❑ YES - If so please go to Q 2 and 3
- ❑ NO - If no please go to Q 4

Q2 Who is in charge of collecting your waste?

- ❑ Local Authority
- ❑ Private Waste Collector
- ❑ Personal Disposal

Q3 (a) How satisfied are you with the waste management services?

- ❑ Very Satisfied
- ❑ Satisfied
- ❑ Dissatisfied
- ❑ Don't Know

Q3 (b) Comment (if any)_____

Q4 (a) Which of the following facilities do you use?

Type	
One Bin collection/Wheelie bin/Plastic Bag	
Recycling bin collection/Green bin	
Bring Banks e.g. Bottle banks, clothes banks	
Civic sites – recycling centres for disposal of items i.e. fridges	
Brown bin/composting service	
Household hazardous waste collection e.g. Paint	
Landfill site	
Occasional bulky item collection	

Q4 (b) On a scale of 1-4 please rate how <u>IMPORTANT</u> the facilities you have are to you.

1= very important, 2=important, 3=not important, 4=not very important

Type				
One Bin collection/Wheelie bin/Plastic Bag	1	2	3	4
Recycling bin collection/Green bin	1	2	3	4
Bring Banks e.g. Bottle banks, clothes banks	1	2	3	4
Civic sites – recycling centres for disposal of items i.e. fridges	1	2	3	4
Brown bin/composting service	1	2	3	4
Household hazardous waste collection e.g. Paint	1	2	3	4
Landfill site	1	2	3	4
Occasional bulky item collection	1	2	3	4

Q4 (c) On a scale of 1-4 please rate how well <u>ORGANISED</u> are those facilities in your location.
1=very organised, 2=organised, 3=disorganised, 4=very disorganised

Type				
Single Bin collection / Wheelie bin /Plastic Bag	1	2	3	4
Recycling bin collection/Green Bin	1	2	3	4
Bring Banks e.g. Bottle banks, clothes banks	1	2	3	4
Civic sites– recycling centres for disposal of items i.e. fridges	1	2	3	4
Brown bin / composting service	1	2	3	4
Household hazardous waste collection e.g. Paint	1	2	3	4
Landfill site	1	2	3	4
Occasional bulky item collection	1	2	3	4

Q5 What other schemes do you think would help reduce waste in your locality?

_____

Q6 (a) Do you have any concerns about any of the above facilities?

- ❑ Yes ⇒ 6b
- ❑ No ⇒ 7a

Q6 (b) Please list your concerns if any?

_____

Q7 (a) Do you have trouble disposing of any items in particular?

- ❑ Yes ⇒ 7(b) + 7(c)
- ❑ No ⇒ 8 (a)

Q7 (b) If yes, what are these items_____

Q7(c) What method of disposal do you currently use for these items?

_____

Q8 (a) Do you pay for the disposal of household waste?

- ❑ Yes
- ❑ No

Q8 (b) Do you feel you should pay to dispose of waste

- ❑ Yes
- ❑ No

Q8 (c) Why/ Why not?_____

_____

Q9 (a) With regard to the environment, how would you rate yourself as a manager of household waste?

- ❑ EXCELLENT ⇒ 9 (b) + 9 (c)
- ❑ GOOD ⇒ 9 (b) + 9 (c)
- ❑ POOR ⇒ 9 (d) + 9 (e)
- ❑ VERY POOR ⇒ 9 (d) + 9 (e)

Q9 (b) If you manage your waste in an environmentally friendly manner what are the main reasons for doing this?

_____

_____

Q9 (c) What if anything would encourage you to manage a greater quantity of your household's waste in an environmentally friendly way?

_____

_____

Q9 (d) What are the main reasons for not managing your household waste in an environmentally friendly way?

_____

_____

Q9 (e) What if anything would persuade you to start managing your household waste in an environmentally friendly manner?

Q 10 Do you currently compost any of your household/garden waste?

- ❑ **YES**
- ❑ **NO**

Q 10 (a) Do you have a compost bin

- ❑ **YES**
- ❑ **NO ⇒ 10 (b)**

Q 10 (b) How do you dispose of household and garden waste that you do not compost?

I let it decompose on site (in garden)		Give it to others to make compost	
Put it in with the general rubbish		Other (please specify)	
Burn it			

Q 11 (a) Do you think that there are Waste Management problems in Ireland?

- ❑ **YES ⇒ 11(b) and 11(c)**
- ❑ **NO ⇒ 12**

Q 11 (b) In your opinion what is the main waste management problem facing the country?

_____

_____

Q 11 (c) What measures would you as a householder be prepared to take to limit this problem?

_____

_____

Q 12 (a) What influences you most with regard to waste management issues?

Advertisements	
Educational Programmes	
Unwelcome local issue	
Political parties with green politics	
Levies e.g. plastic bag	

Q 12 (b) Where do you get most of your information on waste management issues?

Environmental Groups/Organisations	
Media campaigns e. g. *'It's easy to make a difference'*	
Local Authorities	
National Government /law	
Newspaper	
Leaflets	
Others *(please specify)*	

Q 13 (a) Which of the following statements best describes your view on the amount of information that is provided on waste management issues?

- ❑ **Too Much**
- ❑ **About right**
- ❑ **Too little**

Q 13 (b) What waste management issues would you like more information on

_____

Q14 (a) When it comes to <u>household waste</u>, what do you personally think should be the main priorities for Irish waste management policy over the next few years? *Please rank your top three*

Increase recycling facilities		Design packaging that is biodegradable	
Improve and use landfill		Leave things as is	
Introduce incinerators		Don't know	
Reduce landfill		More composting	

Q14 (b) Out of the three you have chosen which do you think is the most important priority and why?

_____

SECTION B

This section is designed to get general information on your opinions about the environment

Q15 Which of the following statements best describes how you feel about the state of the environment?
PLEASE TICK ONE ONLY

- ❑ I am very concerned about the state of the environment
- ❑ I am concerned about the state of the environment
- ❑ I am not very concerned about the state of the environment
- ❑ I have no opinion

Q 16 (a) Here is a list of common environmental concerns please look at the card and tell me which five of these are most important to you? List in order of importance to you, where, 1 = most important and 5 = least important etc.

Concern	*Most Important*
decline in finite resources e.g. coal, oil	
marine pollution sewage on beaches eg oil spills	
river pollution	
global warming /hole in ozone layer/ acid rain	
landfill	
traffic congestion and pollution	
Deforestation	
litter, rubbish	
Loss of countryside to building development	
nuclear radiation/radioactive waste	
Loss/extinction of plants and animals world-wide	
Incineration	
fumes and smog from factories	
backyard burning of waste	
Dog fouling	

Q 16 (b) Why does (No. 1 above) concern you so much?

_____

_____

Q 16 (c) What in your opinion is the best solution to this problem

_____

_____

Q16 (d) Where did you obtain most of the information about this problem?

_____

Q 17 Are there any environmental topics that you would like more information about?

_____

Q 18 (a) Please tick how often you carry out the action:

Activity	*Daily*	*Weekly*	*Monthly*	*Yearly*	*Never*
Read about environmental issues in papers or magazines					
Watch TV programmes on environmental issues					
Involved in clean up with Tidy Towns /local green areas					
Select one product without packaging for the sake of the environment					
Compost kitchen waste					
Recycle glass/cans/paper/plastic					
Buy organically grown fruits & vegetables					

Q 18 (b) Have you ever taken part in the following activities:

Cut down car use and/or use alternative transport

YES ☐ NO ☐

Cut down the amount of energy/water your household uses (switch off lights when you leave a room) YES ☐ NO ☐

Find another use for old household items e.g. Saucepans for flowerpots!

YES ☐ NO ☐

Repair broken goods instead of purchasing a new one

YES ☐ NO ☐

Pick up other peoples litter on the street

YES ☐ NO ☐

Q 18 (b) Are there any other environmental actions that you have done which were not mentioned above? _____

Q 18 (c) [If 'never' to some] Why would you never do some of these actions?

Action _____

_____

Q 19 Do you think that the public's role in environmental policy making is... ***(Please tick one)***

- ❑ **Of no value**
- ❑ **Of little value**
- ❑ **Is valuable**
- ❑ **Is very valuable**

Comment _____

Q 20 On environmental policy issues would you consider yourself to be (*Please tick one)*

- ❑ **Very active**
- ❑ **Active**
- ❑ **Moderately active**
- ❑ **Not very active**
- ❑ **Not interested**

Q 21 How frequently, if ever, in the last twelve months, have you used any of the following methods to influence Irish environmental policy?

Influence	Yes	No	How often
Signed petitions			
Donated money to an environmental group			
Joined an environmental group			
Wrote letters or lobbied TD/Councillors/newspapers			
Voted for an environmental candidate			
Attended meetings about an local problem			
Other*(Please specify)*			

Q 22 Have you any additional comments to make?

_____

_____

SECTION C
This section is designed to acquire general information about you

Q23 Are you ❑ Male ❑ Female	**Q27 How many people are in your household?** ----------
Q24 Age ❑ 18-29 ❑ 30-39 ❑ 40-49 ❑ 50-59 ❑ 60-69 ❑ 70+	**Q28 Do you share your accommodation with** ❑ Family ❑ Live alone ❑ Share with ___ people
Q25 Occupation ❑ Professional ❑ Service industry ❑ Looking after home ❑ Managerial &Technical ❑ Government ❑ Unemployed ❑ Student ❑ Retired ❑ Other	**Q29 Is your home** ❑ Privately owned ❑ Social/Council housing ❑ Privately rented ❑ Other *(please specify)*
Q26 Last Public exams ❑ No formal education ❑ Vocational Certificate ❑ Junior Certificate ❑ Leaving Certificate ❑ Third level qualification *(please specify)*	**Q30 Type of dwelling** ❑ Detached House ❑ Semi-detached House ❑ Town house ❑ Apartment ❑ Other *(please specify)*

Are you willing to participate in either interviews or other in-depth studies in the future. (Tick box if yes) ف

If yes, may we please have your
Name ----------
Address ----------
Phone Number /email address ----------

Thanks for completing the questionnaire
The information you supplied will remain completely confidential

For office use only

Name ---------- Number ----------

Location ---------- Today's Date ----------/--------/ 2003

Appendix II – Interviews

The interviewees were selected from those people who had agreed to participate in future aspects of the research project during the questionnaire survey stage. In this way the respondents were to some extent self-selecting rather than a random sample. However, given that a large number of questionnaire respondents had indicated their willingness to participate in the interviews, it was possible to identify people from a wide range of different socio-economic backgrounds, ages, lifestyles and geographical locations as potential interviewees. Participants were generally selected on the basis of these demographic and geographic factors, but certain householders were also invited to participate because they had demonstrated particular attributes during the questionnaire process.

GCI01 – This respondent was selected because she lives in a grouped housing scheme for elderly people in Renmore. During the questionnaire she spoke about her experience of sharing recycling bins with others and expressed interesting opinions on the City Council and location of facilities.

GCI02 – This interviewee lives in a rented apartment in Dun Na Corribe, just outsid4e the city centre proper. They do not have a garden, private transport or on-site access to recycling facilities. The female householder is in her early twenties, and did not have experience of separating waste and rated herself as a poor manager of waste.

GCI03 – During the questionnaire this interviewee, living in a council house in Ballybaan, expressed quite negative views about waste management and in contrast to the majority of respondents was not impressed with the Council, three-bin system

GCI04 – This interviewee, a student living with six other students in Glasan Student accommodation, was selected for interview because of the interesting opinions she expressed about location of facilities and ideas about increasing student participation in waste management schemes.

GCI05 – This respondent from Knocknacarra spoke highly of the three-bin waste system and her surrounding environment and expressed interesting opinions on the theme of community life.

GCI06 – This householder from Renmore also praised the three-bin separation system and discussed her household's practice of sharing bins with the neighbour to reduce the cost of collection.

GCI07 – This interviewee, also from Renmore, raised interesting opinions on community life and the poor waste management practices of others.

GCI08 – While participating in the questionnaire this young professional, living in an apartment in Salthill, expressed her opinions on communal recycling and pollution.

GCI09 – This retired male from Renmore was selected because of his involvement in Tidy Towns and other clean-ups in the Renmore area, his opinions about the City Council and Renmore as a pilot for the three-bin system.

GCI10 – This student was selected because she lives with five other students and is not involved or interested in improving her waste management practices.

GCOI01 – This interviewee from Ballinasloe was chosen because he is a local farmer in the area and during the questionnaire he expressed strong opinions about the location of the landfill in Ballinasloe.

GCOI02 – This householder rated herself as an excellent manager of household waste and discussed her child's participation in waste management through the Green Schools programme. During the questionnaire she had opinions about the availability of waste facilities in the town of Ballinasloe.

GCOI03 – Details from the questionnaire indicated that this respondent was not in favour of the landfill in his town of Ballinasloe and was involved in protests to close it. He also expressed opinions on the role of politics and agricultural waste.

GCOI04 – This interviewee, living in an apartment without a garden and without private transport had no onsite recycling facilities. She expressed interesting opinions on the influence her daughter has on her waste management behaviour. During the questionnaire she rated herself as a very poor manager of waste but expressed a willingness to improve.

GCOI05 – This respondent from Ballinasloe used to work at the landfill site and currently lives in a social housing estate in the town. During the questionnaire he expressed srong opinions about his neighbours negative waste management behaviour.

GCOI06 – This respondent, living in a new house in the centre of Gort, works to reduce waste in her workplace. Having lived abroad she made some interesting comparsons between waste practices in Ireland and the rest of Europe.

GCOI07 – From the questionnaire it was apparent that this householder from the Aran Islands was very pro-active with regard to waste management. She undertakes recycling and composting with her young son.

GCOI08 – This householder living on a farm several miles outside Kinvara vilage, personally disposes of waste and during the questionnaire she remarked on the cost of waste services, the location of recycling facilities and backyard burning.

GCOI09 – During the questionnaire this respondent, a retired householder living outside Gort village, expressed interesting opinions on illegal dumping and backyard burning in his local area.

GCOI10 - This female householder from Gort expressed many interesting views on the politics of waste during the interview and discussed waste facilities in the Gort area.

Appendix III – Tabular biography of interviewees

Code	Place	Type of Data	Waste Management Self Rating	Satisfaction with Waste services	Household Charge	Gender	Age	Size of Household	Housing Tenure
GCI01	Galway City – Melody's Court,Renmore	Interview	Good	Very Satisfied	Yes	Female	70+	1	Social Housing
GCI02	Galway City – Dun na Corribe	Interview	Poor	Satisfied	Yes	Female	18-29	2	Privately Rented
GCI03	Galway City – Ballybaan	Interview	Poor	Dissatisfied	No	Female	40-49	3	Social Housing
GCI04	Galway City – Glasan Ballybaan	Interview	Very Poor	Satisfied	No	Female	18-29	7	Privately Rented
GCI05	Galway City-Knocknacarra	Interview	Excellent	Very Satisfied	Yes	Female	50-59	2	Privately Owned
GCI06	Galway City – Renmore	Interview	Excellent	Very Satisfied	Yes	Female	60-69	2	Privately Owned
GCI07	Galway City – Remore	Interview	Excellent	Satisfied	Yes	Female	50-59	3	Privately Owned
GCI08	Galway City – Salthill	Interview	Excellent	Very Satisfied	Yes	Female	18-29	3	Privately Rented
GCI09	Galway City – Renmore	Interview	Good	Very Satisfied	Yes	Male	70+	2	Privately Owned
GCI10	Galway City – Glasan, Ballybaan	Interview	Poor	Satisfied	No	Female	18-29	6	Privately Rented

GCOI01	Galway County - Ballinasloe	Interview	Good	Dissatisfied	No	Male	60-69	4	Privately Owned
GCOI02	Galway County - Ballinasloe	Interview	Excellent	Satisfied	Yes	Female	30-39	3	Privately Owned
GCOI03	Galway County - Ballinasloe	Interview	Excellent	Satisfied	Yes	Male	50-59	2	Privately Owned
GCOI04	Galway County - Ballinasloe	Interview	Very Poor	Dissatisfied	Yes	Female	30-39	3	Social Housing
GCOI05	Galway County - Ballinasloe	Interview	Good	Dissatisfied	No	Male	60-69	2	Social Housing
GCOI06	Galway County - Gort	Interview	Good	Dissatisfied	Yes	Female	30-39	3	Privately Owned
GCOI07	Galway County – Aran Islands	Interview	Excellent	Satisfied	Yes	Female	30-39	3	Privately Owned
GCOI08	Galway County - Kinvara	Interview	Good	Satisfied	No	Female	50-59	4	Privately Owned
GCOI09	Galway County-Gort	Interview	Good	Very Satisfied	Yes	Male	70+	2	Privately Owned
GCOI10	Galway County –Gort	Interview	Excellent	Very Satisfied	Yes	Female	40-49	5	Privately Owned

Appendix IV – Interview schedule

A. Home

How do you manage your waste in your own home?
How do you rate yourself as a manger of household waste?
What is it that made you manage (not manage) your household waste?
Are there any ways in which you could improve? *(opportunities)*
What would discourage you from doing more? *(barriers)*
Do you ever think about minimising or preventing waste i.e. buy products with less packaging?

B. Local Area

Are there any waste issues in your area?
What are your opinions on them?
Are you involved in any of these issues?
How /why did you get involved?

C. Waste Management in Ireland

How do you feel about incineration as a form of waste management in Ireland?
What is your opinion on waste charges?
Landfill
Prevention and minimisation of waste?
Backyard burning?
Illegal dumping?
Recycling?
What do you think of the information provided on waste?

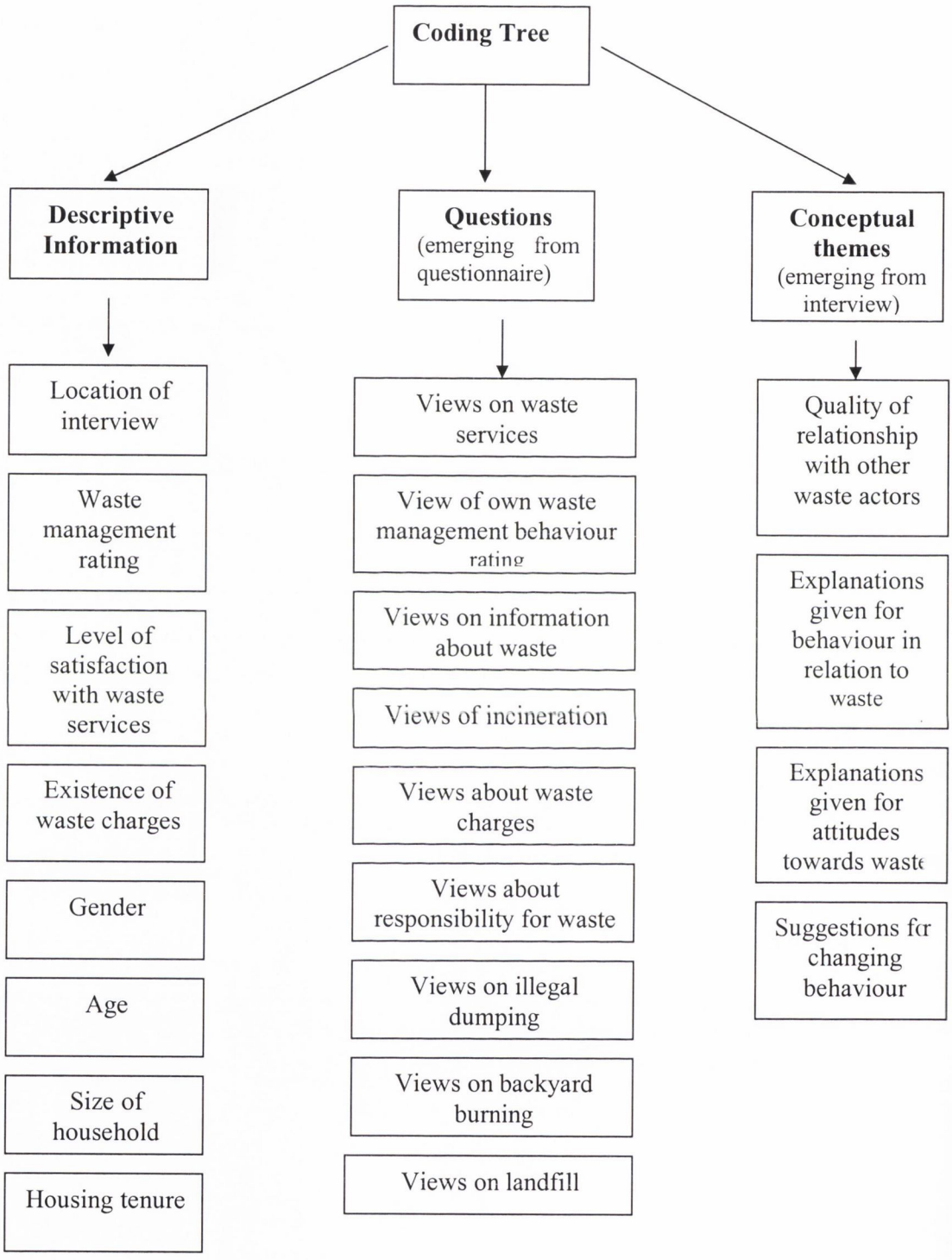
D. Responsibility

Who do you feel is responsible for waste?
What role do you think state bodies/ local authorities play in relation to waste?
What do you think of the relationship between local authorities/govt and the public?

E. Public Participation

Do you feel that the public has a role to play with regard to waste issues/policy?
Are there are obstacles that could be overcome to improve participation?
Is there enough communication between local authorities and the public?

Appendix V – Coding Tree



Appendix VI – Focus Group Question Schedule

Focus Group Schedule for 9/10 year old students

What is waste?

Where does it come from?
(Activity – pass the parcel assess amount of wrapping)
Where does it go?

Do you think waste is a problem?

Why is it important to keep our area clean?

What do you do with waste in your home?

What would encourage you to pick up litter off the street?

What do you think of people who throw litter on the street?

Why would someone ask you to pick up litter?

Who tells you about waste?

Focus Group Question Schedule for 13/14 and 16/17 years old students

What do you consider waste to be?

Do you think that waste is a problem for the environment in this country?

Who should be responsible for waste?

Do you have a role to play?

Do you feel that there is enough information directed at your age group?

Do you do much with waste at home?

What would encourage you to do more with waste?

What would you be willing to do to improve waste management in your area?

Any particular spots that you know people litter in?

Why do you think people litter?
Who litters?
What do you think would stop people from dropping litter?

Do you think people have a right to ask you to pick up litter?

What do you think of this advertisement? (Litter poster)

Questions about poster including: What does littering bring out in people?

Are there any waste issues in this area at the moment?

What's your opinion on Landfill?
Incineration?
Plastic bag levy?
Backyard burning?
Bonfires at Halloween?

Appendix VII – Parental permission for student participation in focus group discussion

Dear Parent

I am a PhD research student in Trinity College Dublin researching waste issues in Ireland. The project which is funded by the Environmental Protection Agency, is examining the attitudes and behaviour of the Irish public with regard to waste. In particular I am interested in student's opinions on waste e.g. attitudes to recycling and litter.

I hope to carry out a focus group discussion (a discussion about waste with a group of 5/6 students) in your child's school. The group discussion will be taped and will only be used for research purposes.

The principal of the school has given permission for these focus groups to go ahead. Parental permission is necessary before a student can participate in these focus groups. If your child would like to take part please complete the section below and return it to the teacher by Friday 21st November. If you have any queries and you wish to contact me, my number is (01) 1234567or 087 98765432.

Yours sincerely,

_____
Frances Fahy

I _____(parent's name) allow my child _____(child's name) to take part in a group discussion in _____school. I understand that this discussion will be taped recorded and used for research purposes. I understand that my child will only participate if they choose to do so.

Signed:_____ (parents name)

Date:_____

Appendix VIII – Student Consent Form (to be completed by child)

I _____ agree to meet with Frances the researcher to talk about my opinions on waste.

I also agree to allow Frances to tape what I say.

I know that I don't have to talk about anything I don't want to and I can change my mind about talking at any time.

Frances will write a report on children's opinions on waste but if she uses things I say in the report, she will change my name.

.....(Child's signature)

.....(Date)

Appendix IX – Outline of Households Involved in Household Waste Minimisation Exercise

For the purposes of the waste minimisation exercise a variety of households from different areas in Galway were selected to participate. In the area administered by Galway County Council two households were chosen: the first a family with a new house in a rural location outside Roscahill, and the second a working mother with a young daughter, who did not have access to private transport, and lived in an apartment in the centre of Ballinasloe town. Two households were also selected in the area administered by Galway City Council: one incorporating six students sharing, and the other comprised of a young professional couple sharing a new apartment – neither household was serviced by Galway City Council's three-bin system.

Household 1

The first household comprised a working couple in their mid-twenties renting a ground floor apartment in Dun Na Corribe, Galway City. Their apartment block did not have facilities for separating waste and the couple placed all their rubbish into a communal rubbish area. The closest bottle banks were located across a main road at Dunnes Stores, Headford Road (approximately 250 metres away). During the questionnaire survey the participant[1] described herself as '*poor*' at managing household waste and claimed that she '*just never thought about it*'. Prior to the commencement of the household waste minimisation exercise the couple threw out approximately three black bin bags per week and the biggest source of waste was plastic bottles, especially bottled water. Before the exercise began they did not compost and felt that they had '*no opportunity to compost*' given that they lived in an apartment without a garden. At the start of the project they occasionally reused paper and clothes at home, and always reused plastic bags. However, they often overbought food and had to throw some away. They occasionally bought refills (e.g. detergents) and recyclable goods. They never took a reusable bag with them when shopping and never consciously bought goods with less packaging.

Household 2

The second household comprised a family of three including a four-year old boy. They moved into their new home outside Roscahill two months prior to the start of the exercise. The participants were keen environmentalists in their last home and the female householder described herself as an '*excellent*' manager of household waste. Every four weeks in their current home they avail of a collection for recyclable plastics, paper and cardboard. They also recycle glass. However the closest bottle banks are several miles away in Oughterard. Prior to the commencement of the exercise the participants felt that they had enough information about recycling and composting but did not have a composter in their new home. This household had difficulty disposing of aerosols and they collected them. At the start of the exercise they identified plastic containers as the '*greatest source of waste*' (H2W1)[2], and felt that their largest source of landfill waste was '*toiletries, sanitary*

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[1] Note on participants: one member of each household had previously completed a questionnaire and/or interview, undertook to participate in the exercise and meet with the researcher each week. However, in all cases, other members of the household participated in the exercise, but were not always present at the weekly progress meeting.

[2] H denotes household number, W denotes week

stuff and wet kitchen paper' (H2W1). They often reuse items at home and regularly think about minimising packaging when shopping.

Household 3

Six students attending the Galway Mayo Institute of Technology shared the third household in the project. This two-level townhouse is located in *Glasan* student village and is maintained by the Kenny Group. There are no recycling facilities in *Glasan* and all grass in the area is communal. The closest bottle banks are located at the shops in Ballybane, approximately one mile away. Prior to the exercise this household disposed of two full black bags of un-separated rubbish a week and their greatest source of waste was tin cans and plastic drink bottles.

Household 4

A mother and six year old daughter comprised the fourth household that participated in the exercise. This family lived in a first-floor apartment, in the centre of Ballinasloe town. They did not have access to grass for composting and did not have private transport. The daughter in the household attends a local national school with a green flag. Prior to the commencement of the exercise this household put out two full black bags of rubbish per week. All of the apartments in the estate have access to two large bins at the entrance to the estate, which the participant felt were often '*full and overflowing*' (H4W1). This household did not partake in any recycling activities even though the bottle banks for recycling glass were '*located within walking distance from my house*' (H4W1). Ballinasloe civic amenity site, with its comprehensive recycling facilities, is located less than two miles from their apartment. Before starting the project the household's main sources of waste were plastic bottles and cartons. The participant stated that she sometimes reused items at work but never at home. As a household they rarely bought refills, always overbought food and had to throw some away, occasionally purchased goods with less packaging, and often gave bags of clothes to charity.

Appendix X – Outline of Household Waste Management Exercise and Information Pack for Householders

Carrying Out A Waste Minimisation Exercise:

Week 1 (start)	1. Provide the householder with the information folder and equipment 2. Conduct a household waste audit 3. Highlight composting as a topic to focus on for the week ahead 4. Provide additional booklets/information sheets on the topic of composting
Week 1 (end)	1. Check that the composter is well located in the garden 2. Discuss any waste management problems that the householder encountered during the week and offer solutions/options to the householder if necessary 3. Complete the evaluation sheet for the week 4. Emphasise prevention/reuse of waste for the week ahead 5. Collect recyclables
Week 2(end)	1. Check if the participant read the tips provided 2. Discuss the effect, if any, the tips had on waste management behaviour 3. Discuss any waste management problems that the householder encountered during the week and offer solutions/ options to the householder if necessary 4. Fill in the evaluation sheet for the week 5. Emphasise shopping with reference to reducing the use of plastic, reusing items and buying durable products for the week ahead 6. Collect recyclables
Week 3 (end)	1. Question whether the participant's shopping habits have changed over the course of the project so far. For example, has the householder attempted to buy products with less packaging? 2. Discuss any waste management problems that the householder encountered during the week and offer solutions/ options to the householder if necessary 3. Fill in the evaluation sheet for the week 4. Highlight recycling centres and recommend that they visit them
Week 4 (end)	1. General overview and review of the exercise 2. Evaluate the importance of this exercise with the householder

Equipment and Products Supplied

Eco-friendly equipment:

Large separation bin
Kitchen caddy
Composter
A reusable bag for shopping
A reusable wine bag
A large jute reusable bag suitable for storing newspapers
Can crusher

Each householder should receive a separation bin, which contains at least two compartments. The purpose of providing compartmentalised bins is to encourage each household to segregate their waste at source, to estimate the amount of waste provided going into each compartment and to establish whether the bins provided are sufficiently large enough to meet the needs of the household. Where garden space is available householders should receive a composter, which provides the householder with an opportunity to compost biodegradable material.

Re-usable bags may be provided so that householders are encouraged to carry them when shopping. The provision of a reusable wine bag may prove useful for households without private transport, to enable those households to carry a small number of bottles to the nearest bottle bank comfortably. The jute bag is suitable for holding newspapers until sufficient numbers are collected to warrant a trip to a recycling centre.

Eco-friendly products:

Water filter
Reusable mugs
Eco-bin liners
Toilet paper (recycled)
Ecover toilet cleaner
Ecover washing-up liquid
Ecover floor cleaner
Ecover spray cleaner
Ecover cream cleaner
Ecover dishwasher tablets
Ecover dishwasher rinse aid
Ecover washing machine tablets
Ecover fabric softener
Ecover stain remover
Ecover bar soap
Ecover cleaner and degreaser

Explanatory Sheet

What is a waste minimisation exercise?
It is a method of developing means of understanding people's actions in relation to waste in their own homes.

Why are we carrying out this exercise?
We want to discover the most practical method of minimising waste in your household. Therefore the success of this project relies on you being as honest as possible e.g. if the bins are too awkward, tell us!

What you will receive?

- ✓ Information pack
- ✓ Separation bins
- ✓ Composter
- ✓ A number environmentally friendly household products e.g. washing-up liquid

How will it operate?
We will visit your home for a short meeting to evaluate the exercise over four weeks. For the first two weeks only we will collect your recyclables should it be necessary.

We want you to be honest and open with us during the evaluation period and state the advantages and disadvantages of the information and equipment provided, and also to identify items that are still difficult to recycle or dispose of.

How long is it going to take?
A short meeting will be held once a week for four consecutive weeks from the start date (at a time that is convenient to you).

What it involves?

Read the information pack
Meet with the researcher once a week to review progress
Use equipment e.g. separate your waste
Find and use local recycling facilities, if possible
Fill in the weekly evaluation sheet with the researcher.

What you should get out of it

- ✓ Equipment
- ✓ Information booklet
- ✓ The knowledge that you're doing your bit for the environment!
- ✓ Opportunity to influence local waste policy

What should we get out of it
As sustainable development policies have emphasised the need for local participation in policy- making, your feedback is vital. By understanding the way householders practically use waste management equipment and information and the problems they encountered with same, we hope to inform and improve local waste policy.

Some Useful Household Tips

- ✓ Always carry a reusable shopping bag with you
- ✓ Try to only buy as much as you need - buy more & you might have to throw it out!
- ✓ Drink tap water instead of bottled water - keep a water filter in the fridge.
- ✓ Buy loose fruit & vegetables not pre-packaged - weigh vegetables separately but put them all in the one bag
- ✓ Compost organic waste from your kitchen & garden
- ✓ Choose products that are minimally packaged or with packaging which can be recycled
- ✓ Buy glass instead of plastic where possible
- ✓ Purchase refills where possible
- ✓ Choose reusable napkins not disposable ones.
- ✓ Leave newspaper supplements you are not going to read in the shop.
- ✓ Bring a lunchbox to school/work instead of using foil or cling film
- ✓ When using paper - use both sides of the page
- ✓ Send emails instead of paper memos whenever possible
- ✓ Share magazines with friends & see if your GP can use unwanted magazines in the waiting room
- ✓ Return all junk mail to sender
- ✓ Bring all your household batteries to the collection points in local libraries & Council offices
- ✓ Recycle ink jet/toner cartridges & mobile phones through your supplier
- ✓ Buy a vacuum cleaner with reusable/washable bags
- ✓ Donate books, old clothes & toys to charity shops and jumble sales
- ✓ Choose reusable nappies/eco-nappies
- ✓ Use Styrofoam or broken crockery as drainage in plant pots
- ✓ Buy items that will last and are durable

Adapted from Limerick County Council website (**www.limerickcoco.ie**) & 'A shopping and investment guide for sustainable living', ENFO, (2003)

Hazardous Waste

Household hazardous waste covers a range of materials that householders tend to store in garages, garden sheds and under the sink.

Hazardous items include:

- Paint – enamel or oil based paint, water based paints, rust paint
- Furniture or paint strippers, thinners & turpentine
- Wood preservatives, floor and furniture polish
- Drain cleaners, detergents & cleaning agents (such as oven cleaner)
- Inks, adhesives & resins
- Batteries
- Fluorescent tubes
- Garden pesticides, weed killers, fertilisers & poisons
- Waste oils such as brake fluid, car oil and car wax
- Old medicines

Hints for Hazardous Waste

- Buy the least hazardous product possible
- Substitute less hazardous alternatives for example, use baking soda as a general household cleaner
- Avoid aerosol products
- Try to buy only as much as you need
- Be wary of products that fail to list their ingredients
- Look for the EU Eco-label on paints when purchasing

Household Audit

Household No: _____ Location:_____

How many bins/bags do you put out per week? _____

In your opinion what is your greatest source of waste?

_____

What waste do you have difficulty disposing of?

_____

Do you currently burn any rubbish? Yes ☐ No ☐
In the household fire? ☐
In the garden? ☐
What do you burn? _____
How much waste would you burn in a week? _____

Recycling

Do you feel you have enough information on recycling: Yes ☐ No ☐

Where are the nearest recycling centres?	
Collection from my house	
Within walking distance	
In my local supermarket	
Other access: Specify	
No access	
Don't know	

What is recycled...	**Bulky items**	**Hazardous waste**	**Paper**	**Cardboard**	**Plastic**	**Glass**	**Tin cans**	**Textiles**
from your house?								
at a bring centre?								
at another depot?								

Reuse:

In your household do you ever reuse…

	Yes, always	Yes, occasionally	Seldom	Never
paper?				
envelopes?				
clothes?				
glass containers for example: jam jars?				
plastic bags?				
cardboard?				
plastic containers?				

Minimisation:

Do you ever…

	Yes, always	Yes, occasionally	Seldom	Never
buy and use refills?				
buy goods with less packaging?				
overbuy food and have to throw some away?				
take a recyclable/green bag shopping?				
buy recyclable goods?				

Composting

Do you produce compost?	Yes	No
Do you feel you have enough information on composting?	Yes	No
What is collected from/what do you put into your…		
composting service i.e. collection from your door?		
composter?		
informal compost heap?		

Evaluation Sheet

Week _____

Household No:_____ **Location:**_____

Has there been a reduction in the amount of waste produced in your household?

If there is a reduction, comment on what has been reduced.

If no reduction occurred, comment on why this happened?

Recycling:

Do you find the separation bins easy to use?

Are they helpful when segregating your waste?

What is recycled...	**Bulky items**	**Hazardous waste**	**Paper**	**Cardboard**	**Plastic**	**Glass**	**Tin cans**	**Textiles**
from your house?								
at a bring centre?								
at another depot?								

Composting:

Have you any comments on the composter?

Was it easy to use?

What did you put into the composter this week?

Reuse:

	Yes	No
Paper		
Envelopes		
Clothes		
Glass containers		
Plastic bags		
Cardboard		
Plastic containers		

How have the other members of the household found the:

Information?

Equipment?

What problems if any did you encounter this week with the exercise?

What were the positive aspects of the exercise this week?