
Contents

Declaration	i
Acknowledgements	ii
Abstract	iii
Contents	iv
List of tables	ix
List of figures	x
List of abbreviations	xii
Refereed papers	xiv

Chapter one: Introduction

1.1	Introduction	1-2
1.2	Rationale for the research	1-2
1.3	Research aim, objectives and questions	1-5
1.4	Boundaries of the research	1-7
1.5	The importance of the research	1-13
1.6	The research approach	1-14
1.7	The structure of the thesis	1-15

Chapter two: Small hotels and solid waste management

2.1	Introduction	2-2
2.2	The hospitality industry and the environment	2-3
	2.2.1 What is a small hotel?	2-3
	2.2.2 Hospitality in the UK	2-5
	2.2.3 The extent of the environmental responsibility in the hospitality sector	2-8
	2.2.4 Environmental management standards	2-9
	2.2.5 Green Dragon Environmental Standard (GDES)	2-11
2.3	Small hotels and environmental practices	2-14
	2.3.1 Strategic approaches to environmental performance	2-14
	2.3.2 Environmental attitudes of small tourism businesses	2-16
	2.3.2.1 Theory of Reasoned Action (TRA)	2-18
	2.3.2.2 Theory of Planned Behaviour (TPB)	2-20
	2.3.2.3 Ipsative Theory of Behaviour (ITB)	2-23
	2.3.3 Motivators to implement environmental practices	2-25
	2.3.4 Barriers of environmental performance improvement	2-29
2.4	Solid Waste Management (SWM)	2-31
	2.4.1 What is waste?	2-31
	2.4.2 Waste management hierarchy	2-32
	2.4.3 Solid Waste Management (SWM) in Wales	2-35
	2.4.4 Solid Waste Management (SWM) in hotel operations	2-38
2.5	Waste minimisation and/or prevention	2-46
	2.5.1 Definitions	2-46
	2.5.2 Green purchasing	2-46
	2.5.3 The UK waste minimisation initiatives targeting SMEs	2-49
2.6	Waste recovery	2-51
	2.6.1 Reuse	2-51
	2.6.2 Recycling	2-52
	2.6.2.1 Main factors hampering recycling decisions	2-53

	2.6.2.2	Means for encouraging recycling behaviour	2-55
2.6.3		Composting	2-58
2.6.4		Producer responsibility	2-60
	2.6.4.1	Product Take-Back (PTB)	2-61
	2.6.4.2	German packaging take-back system	2-62
	2.6.4.3	UK packaging take-back system	2-64
	2.6.4.4	Swiss WEEE take-back system	2-65
	2.6.4.5	UK WEEE system	2-66
2.7		Waste disposal	2-68
	2.7.1	Incineration	2-68
	2.7.2	Landfill and landfill tax	2-70
2.8		The key players in the UK waste management industry	2-73
	2.8.1	Local authority	2-73
	2.8.2	Private waste sector	2-77
2.9		A theoretical model of best practice for SWM in small hotels	2-80
2.10		Summary	2-86

Chapter three: Research approach

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

Chapter four: Case study of non-GDES small hotels in a Welsh local authority

4.1	Introduction	4-2
4.2	SWM practices in non-GDES small hotels	4-2
4.2.1	Prevention	4-2
4.2.2	Minimisation	4-5
4.2.3	Reuse	4-8
4.2.4	Recycling	4-9
4.2.4.1	Operators' attitudes towards recycling	4-9
4.2.4.2	Obstacles to recycling	4-13
4.2.5	Composting	4-18
4.2.6	Landfill	4-21
4.3	Main players in the hotel's SWM programme	4-23
4.3.1	Staff participation	4-23
4.3.2	Customer involvement	4-25
4.4	Non-GDES small hotels and product take-back (PTB) system	4-28
4.5	Complying with the legal requirements for disposing the hotel waste	4-30
4.6	Future motivation for implementing better SWM practices	4-32
4.6.1	Potential role of the local authority regarding SWM	4-32
4.6.2	Potential pressures to adopt sustainable SWM practices	4-39
4.6.3	Networking small hotels	4-44
4.7	Initial model for SWM in non-GDES small hotels	4-46
4.8	Summary	4-53

Chapter five: Case study of small hotels committed to GDES in Wales

5.1	Introduction	5-2
5.2	Development of GDES	5-2
5.3	Small hotels' commitment to environmental responsibility	5-5
5.3.1	Developing an environmental policy	5-5
5.3.2	Appointing an environmental officer	5-8
5.3.3	Undertaking an environmental audit	5-8
5.3.4	Setting an improvement plan	5-10
5.4	Environmental performance in small hotels committed to GDES	5-11
5.4.1	Environmental measures undertaken for achieving GDES	5-11
5.4.2	Measuring the effectiveness of the hotel's environmental performance	5-12
5.4.3	Support provided by Arena Network	5-14
5.5	Hoteliers' intentions to progress further to achieve higher levels of GDES	5-17
5.6	SWM practices in small hotels committed to GDES	5-19
5.6.1	Prevention	5-19
5.6.2	Minimisation	5-24
5.6.3	Reuse	5-26
5.6.4	Recycling	5-27
5.6.4.1	Obstacles to recycling	5-31
5.6.5	Composting	5-33
5.6.6	Landfill	5-35
5.7	Main players in the hotel's SWM programme	5-37

5.7.1	Staff participation	5-37
5.7.2	Customer involvement	5-41
5.8	GDES small hotels and product take-back (PTB) system	5-45
5.9	Complying with the legal requirements for disposing the hotel waste	5-46
5.10	Future motivation for implementing better SWM practices	5-49
5.10.1	Hoteliers' motivation for achieving GDES	5-49
5.10.2	Potential motivation to adopt sustainable SWM practices	5-58
5.10.3	Networking small hotels	5-61
5.11	Modified model for SWM in GDES small hotels	5-63
5.12	Summary	5-69

Chapter six: Public and private sectors' SWM operations in a Welsh local authority

6.1	Introduction	6-2
6.2	Public waste sector	6-2
6.2.1	Council plans in regards to prevention/minimisation of commercial waste	6-2
6.2.2	The local authority's recycling system for commercial businesses	6-5
6.2.2.1	Mixed recycling bag scheme	6-10
6.2.2.2	Constitution of networks between small hotels	6-11
6.2.2.3	Establishing Commercial Waste Recycling Centres (CWRC)	6-12
6.2.3	Constraints upon the local authority to recycle small businesses' waste	6-13
6.2.4	Composting facility	6-17
6.2.5	Major elements to influence SWM practices in commercial businesses	6-18
6.2.5.1	Cost	6-19
6.2.5.2	Legislation	6-21
6.2.6	Liaison with the private waste sector	6-24
6.2.7	Duties of the council to control illegal dumping	6-27
6.3	Private waste sector	6-30
6.3.1	Working with businesses in terms of prevention and/or minimisation of the waste	6-30
6.3.2	Handling commercial waste	6-34
6.3.2.1	Recycling	6-34
6.3.2.2	Composting	6-41
6.3.2.3	Landfill	6-41
6.3.3	Main barriers for recycling waste	6-42
6.3.4	Motives to consider sustainable SWM practices	6-45
6.3.4.1	The effectiveness of the landfill tax in diverting the waste away from landfill	6-49
6.3.5	Working with the public sector	6-52
6.4	Input/output process model for the government to encourage the public and private waste sectors to implement sustainable SWM practices	6-54
6.5	Summary	6-60

Chapter seven: An evaluation and discussion of SWM practices across all cases studied

7.1	Introduction	7-2
7.2	An evaluation of SWM practices in non-GDES small hotels 18 months after the initial interviews with them	7-2
7.3	Revised model for SWM in non-GDES small hotels after 18 months	7-8
7.4	Cross-case analysis and discussion	7-12
7.4.1	Motivations for small hotels to consider SWM	7-12
7.4.2	Best practice for SWM in small hotels	7-23
7.4.2.1	Commitment to the environmental responsibility	7-25
7.4.2.2	Undertake a waste audit	7-26
7.4.2.3	Work with the contracted waste carrier	7-28
7.4.2.4	Implement SWM programme considering the waste hierarchy	7-29
7.4.2.4.1	Prevention	7-29
7.4.2.4.2	Minimisation	7-32
7.4.2.4.3	Reuse	7-34
7.4.2.4.4	Recycling	7-35
7.4.2.4.5	Composting	7-37
7.4.2.4.6	Landfill	7-38
7.4.2.5	Government support take-back schemes	7-39
7.4.2.6	Comply with the legislative requirements	7-40
7.4.2.7	Overcome the challenges	7-41
7.4.2.8	Encourage staff participation in the hotel's SWM programme	7-42
7.4.2.9	Involve customers in the hotel's SWM programme	7-44
7.5	Best practice model for the public sector to encourage better SWM practices in small hotels	7-46
7.6	An evaluation of the findings in respect of TPB	7-52
7.7	Conclusion	7-57

Chapter eight: Conclusions

8.1	Introduction	8-2
8.2	Review of objectives and major findings	8-2
8.2.1	Objective 1	8-2
8.2.2	Objective 2	8-4
8.2.3	Objective 3	8-9
8.2.4	Objective 4	8-12
8.3	Contributions	8-18
8.3.1	Contributions to theory	8-18
8.3.2	Contributions to practice	8-20
8.4	Limitation of the research	8-22
8.5	Opportunities for further research	8-24
8.6	Personal reflections	8-26

References

Appendices

List of Tables

Table 2.1	Barriers to implementing environmental performance	2-31
Table 3.1	Comparison of quantitative and qualitative research approaches	3-4
Table 3.2	Summary of the major features of positivism and phenomenology research	3-14
Table 3.3	Research methodology stages	3-16
Table 3.4	No. of respondents and sampling techniques used in case study1	3-24
Table 4.1	Obstacles to recycling	4-14
Table 7.1	Summary of the cross-case analysis, involving: non-GDES small hotels, GDES small hotels, public and private sectors' waste carriers	7-59

List of Figures

Figure 1.1	Boundaries of the research	1-7
Figure 1.2	Municipal waste management in the European Union	1-10
Figure 2.1	The five levels of the GDES	2-12
Figure 2.2	Key principles and elements of the GDES	2-14
Figure 2.3	Stages of the environmental activity	2-16
Figure 2.4	Factors determining a person's behaviour	2-19
Figure 2.5	The theory of planned behaviour	2-21
Figure 2.6:	Waste management hierarchy	2-33
Figure 2.7	Municipal waste management in Wales: 2003-04	2-36
Figure 2.8	Process inputs and outputs	2-40
Figure 2.9	Model of hospitality solid waste minimisation hierarchy	2-41
Figure 2.10	SWM concept and strategy	2-76
Figure 2.11	New paradigm for disposal contracts	2-79
Figure 2.12	A theoretical model of best practice for SWM in small hotels	2-82
Figure 3.1	Thesis' epistemology, theoretical perspective, methodology and methods	3-8
Figure 3.2	Research methodology and sources of evidences used in the study	3-17
Figure 3.3	Basic design for case studies undertaken in this research	3-20
Figure 3.4	Sources of evidences used for the case studies	3-29
Figure 4.1	In-house composting in small hotels	4-20
Figure 4.2	Potential pressure to adopt sustainable SWM practices	4-44
Figure: 4.3	Initial model for SWM in non-GDES small hotels	4-47
Figure 5.1	Promoting the environmental policy on the hotel's website	5-6
Figure 5.2	Eco tips for guests on the hotel's website	5-43
Figure 5.3	Marketing the hotel as an eco-friendly business	5-52
Figure 5.4	Modified model for SWM in GDES small hotels	5-64
Figure 6.1	The new extended MRF of the local authority	6-7
Figure 6.2	Waste segregation and recycling activities undertaken by a private waste company	6-36
Figure 6.3	Facility to slice and fragment wood	6-37
Figure 6.4	Facility to process and grind wood	6-38
Figure 6.5	Facility to process and break down tyres	6-38

Figure 6.6	Facility to process and cut down hard plastic	6-39
Figure 6.7	Input/output process model for the Government to encourage the public and private waste sectors to implement sustainable SWM practices	6-55
Figure 7.1	Revised model for SWM in non-GDES small hotels after 18 months	7-9
Figure 7.2	Motivations for small hotels to consider SWM	7-14
Figure 7.3	Best practice for SWM in small hotels	7-24
Figure 7.4	Best practice model for the public sector to encourage better SWM practices in small hotels	7-48
Figure 7.5	The Theory of Planned Behaviour	7-55
Figure 7.6	The behavioural motivation variable and TPB	7-57

List of abbreviations

ARF	Advanced Recycling Fee
B&B	Bed and Breakfast
BERR	Department for Business Enterprises & Regulatory Reform
BPEO	Best Practice Environmental Option
BRASS	Centre for Business Relationships, Accountability, Sustainability and Society
CEC	Commission of the European Communities
CIPS	The Chartered Institute of Purchasing and Supply
CRN	Community Recycling Network
CWRC	Commercial Waste Recycling Centres
DEFRA	Department of the Environment, Food and Rural Areas
DETR	Department of the Environment, Transport and the Regions
DSD	Duales System Deutschland
EEE	Electrical and Electronic Equipment
EfW	Energy from waste
EMAS	Eco Management and Audit Scheme
EMS	Environmental Management System
EPA	Environmental Protection Act
EPR	Extended Producer Responsibility
ETB	English Tourist Board
ETBPP	Environmental Technology Best Practise Programme
ETI	The Ethical Training Initiative
EU	European Union
GDES	Green Dragon Environmental Standard
GDP	Gross Domestic Product
GTBS	Green Tourism Business Scheme
HCIMA	Hotel Catering and Institutional Management Association
HWRC	Household Waste Recycling Centres
ICI	Industrial-Commercial-Institutional
IHEI	International Hotel Environment Initiative
ISO	International Organisation for Standardisation
ITB	Ipsative Theory of Behaviour
LCA	Life Cycle Assessment
LTCS	Landfill Tax Credit Scheme
MRF	Material Recycling Facility
MSW	Municipal Solid Waste
OECD	Organisation for Economic Cooperation and Development
PCS	Producer Compliance Scheme
PBC	Perceived Behavioural Control
PRO	Producer Responsibility Organisation
PTB	Product Take Back
RM	Resource Management
SENS	Stiftung Entsorgung Schweiz
SMEs	Small and Medium Sized Enterprises
SWICO	Swiss Association for Information, Communication

SWM	Solid Waste Management
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
UK	United Kingdom
UNCC	University of North Carolina in Charlotte
US	United States
VAT	Value Added Tax
WAG	Welsh Assembly Government
WCED	World Commission on Environment and Development
WEEE	Waste Electrical and Electronic Equipments
WOS	Welsh Organic Scheme
WRAP	Waste & Resources Action Programme
WTB	Wales Tourist Board
WTN	Waste Transfer Note