

CRANFIELD UNIVERSITY

N HALPERN

MARKET ORIENTATION AND THE PERFORMANCE OF AIRPORTS IN
EUROPE'S PERIPHERAL AREAS

SCHOOL OF ENGINEERING
HUMAN FACTORS AND AIR TRANSPORT
AIR TRANSPORT GROUP

PhD THESIS

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Market orientation and the performance of airports in Europe's peripheral
areas

Supervisor: R Pagliari

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I. ABSTRACT

As a consequence of deregulation in the airline industry, market forces rather than public service considerations increasingly dictate services to and from airports in Europe's peripheral areas. The new market advocates market-driven management practices as a means of satisfying airline customers and implies that airports that adopt a more market-orientated approach than their rivals will perform better. This study investigates the theoretical foundations of a market orientation, which can be defined as the organisation-wide generation, dissemination and response to market intelligence. The main aim of this study is to examine the relationship between market orientation and the performance of airports in Europe's peripheral areas.

The research methodology was implemented using a questionnaire-based survey that was administered to the managers of 217 airports in 17 different countries. Usable responses from 86 airports were received and analysed.

The findings of this study suggest that airports wishing to outperform competitors can do so by adopting a market orientation and should seek to continually monitor and improve the way in which they gather, disseminate and respond to market intelligence. This will be particularly effective when market turbulence is high and/or when the focus of the airport is on developing leisure services. In addition, market orientation was found to have a positive effect on performance because it means that airports are more likely to be innovative in their approach to marketing. This means that airport managers should try to develop a market-orientated culture with innovative marketing practices in mind, and visa versa. The fact that independently-owned airports have significantly higher levels of market orientation than regionally-owned or nationally-owned airports suggests that independent ownership is more conducive to the development of a market orientation.

The findings of this study do have a number of limitations, the most notable being that they are restricted to airports in Europe's peripheral areas. It is recommended that future

research should be conducted on airports worldwide in order to investigate differences between a wider range of airport types and geographical regions. In addition, the findings of this study suggest that a stakeholder orientation is important for airports seeking to improve their performance, especially smaller airports that are publicly-owned. It is recommended that future studies should investigate antecedents to and consequences of a stakeholder orientation. Future studies should also investigate whether a stakeholder orientation has a greater effect on performance than a market orientation does, and whether the two types of orientation complement each other.

Key terms: Europe's peripheral areas; deregulation of European air transport markets; market orientation; airport marketing performance

II. DEDICATION

“This thesis is dedicated to my wife and my parents”

III. ACKNOWLEDGEMENTS

Conducting a study of this nature is not possible without the help and support of a range of individuals and organisations. Firstly, I would like to thank my supervisor at Cranfield University (Dr Romano Pagliari). Dr Pagliari has kept me on track for the duration of my studies and has always shown an interest and understanding in my chosen subject. Staff at the Centre for Air Transport in Remoter Regions at Cranfield University have provided an additional network of support and have provided an outlet for my research by way of their bi-annual Forum on Air Transport in Remoter Regions.

I would also like to thank my former line manager at London Metropolitan University (Dr Curtis Swanson). Dr Swanson is currently Chair of Faculty at the College of Aviation at Western Michigan University. He played a key role in facilitating my entry into academia and stimulated my initial interest in studying for the degree of Doctor of Philosophy. London Metropolitan University supported that interest by providing an academic setting and financial assistance for the duration of my studies.

The early stages of my studies involved the definition and measurement of Europe's peripheral areas and I am grateful to Dr Carsten Schürmann from the Institute of Spatial Planning at the University of Dortmund for sharing his knowledge and understanding of peripherality with me. Dr Schürmann also provided raw data that enabled me to define and measure Europe's peripheral areas.

Academic institutions that are located in Europe's peripheral areas provided me with opportunities to present my research and to discuss related issues with students, staff and local stakeholders. This includes Stavanger University (where I have delivered guest lecturers and staff seminars on my research) and Mid-Sweden University and The European Tourism Research Institute (where I have delivered staff seminars on my research and contributed to an airport development forum with the manager and stakeholders of

III. Acknowledgements

Östersund airport). The 2005 Nordic Symposium on Tourism and Hospitality Research provided further opportunities for me to present and discuss my research.

Other academics and members of industry that I would like to thank are listed in table 4.8, 4.9 and 4.10 of this thesis. All of them provided expert advice and comments on the research strategy for this study. I would also like to thank all of the airports that took part in this study and are listed in Appendix H of this thesis. I am particularly grateful to the respondents that took the time to complete the survey and make this study possible.

Family and friends deserve a special mention. My parents have shown me the value of education and have always supported me and shown an interest in my studies whilst my brothers have encouraged me to balance my academic pursuits with a social life! Family and friends on my wife's side are from Norway; a country that is fairly peripheral in the context of Europe. The many trips to Norway have stimulated my initial and ongoing interest in the needs and challenges of air transport in such areas.

Finally, I would like to thank my wife, Anne-Merete. I have combined my studies with a full-time job so almost all of my spare time away from work has been spent on the computer in our small flat in London. The computer is located in the living room and Anne-Merete has not been able to escape my constant tapping on the keyboard and groaning at the screen. Anne-Merete also became a sounding board for my ideas and anguish. Despite its intrusion into our personal life, Anne-Merete has always supported my studies and never complained.

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VIII. LIST OF ABBREVIATIONS

Abbreviation	Description
ACI	Airports Council International
AENA	Aeropuertos Españoles y Navegación Aérea
ANA	Aeroportos de Portugal
CAA	Civil Aviation Authority
EC	European Commission
EEA	European Economic Area
EFTA	European Free Trade Association
EPA's	Europe's Peripheral Areas
EU	European Union
GDP	Gross Domestic Product
HIAL	Highlands and Islands Airports Limited
IATA	International Air Transport Association
IATL	Inverness Airport Terminal Limited
LFV	Luftfartsverket
MO	Market Orientation
NUTS	Nomenclature of Territorial Units for Statistics
PFI	Private Finance Initiative
PPP	Public Private Partnership
PSO	Public Service Obligation
SEAG	Société d'Exploitation de l'Aéroport de Grenoble
SPSS	Statistics Package for the Social Sciences
TEN	Trans-European Networks
TEN-T	Trans-European Transport Networks
UK	United Kingdom
USA	United States of America

1. INTRODUCTION

The main objective of this chapter is to introduce the study and the structure of this thesis. The chapter consists of six main sections. The first section will provide the background and rationale to the study. The second section will state the nature of the problem. The third section will highlight the aim and objectives of the study. The fourth section will outline the proposed method of study. The fifth section will highlight a number of constraints and limitations of the study and the sixth section will illustrate the structure of this thesis.

1.1 Background and rationale

The deregulation of European air transport markets was not complete until April 1997. Before this time, Europe's airports operated in what is often referred to as the regulated era (e.g. Burghouwt and Huys, 2003) whereby air transport networks were determined by national governments and political (as opposed to commercial) objectives.

Monopolistic conditions in the airline industry meant that there was minimal competition between airports and there was a lack of incentive to reduce costs and improve efficiency. As a result, airports were mainly operations focused and airport marketing was something of an oxymoron that was limited to passive approaches such as the publication of an airport timetable (Graham, 2003a). This was especially the case in Europe's peripheral areas (EPA's) where, before deregulation, the focus of airports was on providing a public service to the many small and isolated communities by linking them to the main transportation networks (Reynolds-Feighan, 1995).

Before deregulation, air services to and from EPA's were somewhat protected because, in exchange for monopoly rights on dense and profitable routes, national airlines (or their subsidiaries) would serve lightly-populated and unprofitable routes such as lifeline domestic services to EPA's (Williams, 2002). Although many of these services would have

been infrequent and operated by small aircraft with high fares, their existence was fairly well protected. However, “one of the consequences of deregulation has been the elimination of cross-subsidy from loss-making domestic services and its replacement with direct subvention” (Williams, 2002; p135), which is implemented through the Public Service Obligation (PSO) programme.

The PSO programme was a proviso of the European Union (EU) liberalisation package of July 1992 and was set up to compensate for the performance of the obligation to operate lifeline domestic services to EPA’s. However, as Reynolds-Feighan (1995) concludes in her paper, the benefits of liberalisation, despite the use of PSO’s, are not being spread to the small communities. In addition, it has been suggested by Williams and Pagliari (2004) that major inconsistencies exist in the approach and commitment to PSO’s across Europe.

The consequences of deregulation mean that future air services to and from airports in EPA’s may be increasingly dictated by unpredictable and rapidly changing market forces rather than public service considerations (Reynolds-Feighan, 1995). Such consequences offer both threats and opportunities to airports because, despite being threatened by the loss or reduction of air services that are not commercially viable, airports also face opportunities to attract new routes and grow and expand existing routes that were previously constrained by regulatory barriers.

1.2 Statement of the problem

Deregulated air transport markets advocate market-driven management practices as a means of satisfying airline customers, which in marketing terminology implies that airports must have a market orientation (MO). MO can be defined as: “the organisation-wide generation of market intelligence pertaining to current and future customer needs, dissemination of the intelligence across departments, and organisation-wide responsiveness to it” (Kohli and Jaworski, 1990; p6). Deregulated air transport markets also imply that airports that adopt a more market-orientated approach than their rivals will perform better.

The extent to which airports in EPA's have adopted a MO is fairly unclear and has never been investigated by an empirical study, which is why this particular study has been developed. When considering anecdotal evidence (e.g. Lang, 1999; Langedahl, 1999; Eady, 2003; Carrara, 2005), it is clear to see that some airports have developed market-orientated management practices as a means of satisfying airline customers. However, anecdotal evidence also demonstrates a wide variation in the practices that have been adopted and the extent to which such practices impact upon airport performance.

Despite growing anecdotal evidence, little has been done to develop a consistent measure of airport MO or to develop a better understanding of the antecedents to and consequences of airport MO. Indeed, empirical evidence is limited to a study by Advani (1998) and a paper by Advani and Borins (2001) that were both based on the data produced by Advani (1998). Data was collected through a survey of 201 airports worldwide and was used to examine the application of the MO concept to airports and the factors that influence airport MO (i.e. antecedents to airport MO). The study used MO as an indicator of service quality and found that the MO concept can be successfully applied to airports. The study also found that privatisation, top management emphasis, reward-based systems, and organisational size have a significant positive effect on airport MO. However, the study was conducted in 1997 (before the consequences of deregulation took effect in Europe) and was based on a worldwide sample of airports, which meant that many of the airports would still have operated in a heavily regulated environment.

Since the study by Advani (1998), a large body of literature on MO has been published and this has helped to develop a better understanding of the MO concept. In particular, literature has increasingly focused on the relationship between MO and company performance and the factors that moderate or mediate the relationship between MO and company performance (e.g. see Langerak, 2003). The relationship between MO and airport performance and the factors that moderate or mediate the relationship between MO and airport performance was not investigated by Advani (1998) and despite the growing body of literature on MO, no further research has been conducted on airports.

1.3 Aim and objectives

In light of the gap in literature, the study aims to examine the relationship between MO and the performance of airports in EPA's. The following four specific study objectives form the basis of the research:

1. To investigate and analyse the application of the MO concept to airports in EPA's.
2. To investigate and analyse antecedents to MO at airports in EPA's.
3. To investigate and analyse the impact of MO on the performance of airports in EPA's.
4. To investigate and analyse factors that moderate or mediate the relationship between MO and the performance of airports in EPA's.

The outcomes of the study are expected to contribute to theoretical aspects of the MO concept as well as providing implications for managers of airports in EPA's.

1.4 Method of study

Upon completion of a formal critique of current and relevant literature, an empirical analysis of airport MO will be implemented using a questionnaire-based survey that will be administered to airport managers. Previous empirical studies on MO will inform the choice of methodological constructs and analysis. This includes a classic paper on MO by Kohli and Jaworski (1990) and the previous study on airport MO by Advani (1998).

Secondary sources of information will also be used in the study in order to define EPA's, identify their airports, and collate key airport data. Primary data that is derived from the

survey will be entered, along with the secondary data, into SPSS¹, and will be analysed using a range of descriptive and statistical techniques.

1.5 Constraints and limitations

Generalisation of the study is restricted to airports in EPA's. These airports are often neglected in academic and professional literature. However, the importance of these airports to their local communities means that they warrant particular attention. In addition, as is clear from discussions in section 1.1, these airports are particularly affected by consequences of deregulation such as increasingly unpredictable and rapidly changing market forces.

The outcomes of the study aim to inform airport management of the practicalities involved in adopting a MO and the antecedents to and consequences of MO. In particular, the study aims to inform airport management of the relationship between MO and airport performance and the factors that moderate or mediate the relationship. To this extent the study aims to consider the managerial implications of MO as opposed to public policy implications.

1.6 Thesis structure

This thesis will provide a written account of the study and has been structured in order to take account of academic best practice for constructing a thesis (e.g. Dunleavy, 2003).

Chapter 1 has provided an introduction to the study and the structure of this thesis. Chapter 2 will provide a theoretical perspective to the study, reviewing relevant literature that is

¹ SPSS is an abbreviation for the term 'Statistical Package for the Social Sciences'. This is a software package for social scientists that was originally developed in the 1960's (Bryman and Cramer, 1997). The package is widely used by researchers to collate research data and can be used to conduct a range of statistical analyses. SPSS will be used to collate and analyse data in this study.

already in existence and indicating where the study fits into debates around the subject. Chapter 2 will also define some of the key terminology that is used throughout the study. Chapter 3 will describe the research questions that emerge from the review of literature and the hypotheses that will be tested by the study. Chapter 4 will describe and justify the methodology used to address the research questions and test the hypotheses. Chapter 5 will provide an analysis of the findings in relation to the research questions and hypotheses. Chapter 6 will provide a discussion of the main findings within the context of relevant literature. Chapter 6 will also discuss implications for airport managers, limitations of the study, and recommendations for future research. The final chapter, Chapter 7, will conclude the study, summarising the main points and providing final comments. The structure of this thesis, including chapter headings and headings for the main sections of each chapter, is illustrated in figure 1.1.

Figure 1.1 Thesis structure

CHAPTER 1. INTRODUCTION Study context and thesis structure					
1.1 Background and rationale	1.2 Statement of the problem	1.3 Aim and objectives	1.4 Method of study	1.5 Constraints and limitations	1.6 Thesis structure

CHAPTER 2. LITERATURE REVIEW Theoretical perspective			
2.1 Peripherality	2.2 Deregulation	2.3 The marketing concept	2.4 Chapter summary

CHAPTER 3. QUESTIONS & HYPOTHESES Research questions and hypotheses	
3.1 Research questions and hypotheses	3.2 Chapter summary

CHAPTER 4. METHODOLOGY Research strategy, design and delivery				
4.1 Research strategy	4.2 Defining the population	4.3 Survey design and delivery	4.4 Data analysis	4.5 Chapter summary

CHAPTER 5. FINDINGS Results				
5.1 Sample characteristics	5.2 Descriptive statistics	5.3 Reliability and validity testing	5.4 Hypothesis testing	5.5 Chapter summary

CHAPTER 6. DISCUSSION Main findings			
6.1 Main findings	6.2 Managerial implications	6.3 Limitations and recommendations	6.4 Chapter summary

CHAPTER 7. CONCLUSION Summary and final comments	
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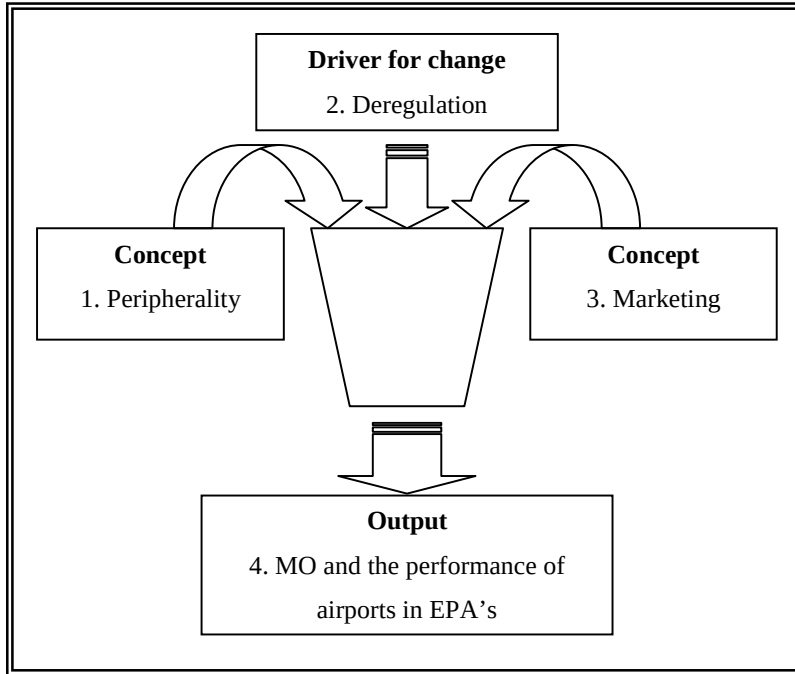
2. LITERATURE REVIEW

The main objectives of this chapter are to review relevant literature that is already in existence and to indicate where this study fits into debates around the subject. This chapter will also define key concepts and terminology.

The chapter consists of four main sections. The first section will review literature on the concept of peripherality including definitions and measurements of peripherality; disparities between central and peripheral areas; and, the role of airports in peripheral areas. The second section will review literature on deregulation, the driver for change that forms the context to this study. In particular, the second section will consider the evolution of the airline industry from one of regulation to deregulation, the impact that deregulation has had on the provision of air services in EPA's, and subsequent implications for the management of airports in EPA's. The third section will review literature on the marketing concept including the definition and measurement of MO, applications of the MO construct, antecedents to and consequences of MO, and the framework for examining the relationship between MO and the performance of airports in EPA's. The fourth section will bring together the individual strands of the literature review and will provide a summary of the chapter.

Figure 2.1 illustrates the conceptual framework of the literature review within the context of the four main sections of the chapter.

Figure 2.1 Conceptual framework of the literature review



2.1 Peripherality

This section will review literature on peripherality, thus establishing the model for defining peripherality in this study. It will also review literature on the disparities between central and peripheral areas, and the role of airports in peripheral areas.

2.1.1 Defining and measuring peripherality

Peripherality is a vague and widely used concept that refers to the relationship between the centre and the periphery of a given area. The vague and widely used nature of the concept is emphasised by Naustdalslid (1983) who states that: “there is no such thing as a single centre-periphery theory or concept....it is difficult, if not impossible, to extract any common element from the wide variety of usages of the centre-periphery metaphor” (Naustdalslid, 1983; p17). This statement is derived from the fact that peripherality can be measured by any number of indicators including spatial (e.g. relative distance costs),

economic (e.g. relative economic vitality), sociological (e.g. relative perceptions), political (e.g. relative political power), and organisational (e.g. relative infrastructure).

The conceptual nature of the terminology means that it can be applied to different contexts and situations in different ways, often depending upon political objectives and/or local viewpoints. For instance, peripherality is often viewed as being a handicap to the development of a region and a handicap that sets peripheral regions apart from other less peripheral regions (Cross and Nutley, 1998; European Commission, 2000; European Commission, 2003). However, the peripherality of a region may also be viewed as a facilitator of opportunities such as structural funding, residential desirability, low wage costs, or the attraction of tourists seeking a remote experience (Ball, 1995).

This study has a European perspective and at the European level, peripherality is usually defined by spatial indicators (also known as gravity models) that compare levels of accessibility and/or accessibility to potential markets or economic activity (e.g. see Spiekermann et al., 2002; Gren, 2003). In this context, peripherality implies that central areas with better access to markets will be more productive, competitive and successful than remoter and more isolated peripheral areas (Linneker, 1997). Table 2.1 highlights the three main types of peripherality indicator that have been used in previous European studies.

The travel time/cost indicator specifies a set of destinations (e.g. all cities over a specific size or level of attraction) and is applied to studies where not all destinations are deemed relevant (e.g. Lutter et al., 1992; Chatelus and Ulied, 1995). One of the disadvantages of this type of indicator is that it does not distinguish between destinations of different sizes, so cities at the lower end of the scale exert the same amount of influence as cities on the higher end of the scale (Copus, 1997). The main advantage of the travel time/cost indicator is that the expression of units (e.g. average time or cost) is familiar and easy to interpret (Schürmann and Talaat, 2000).

Table 2.1 Peripherality indicators used in previous studies

Indicator	Basic description	European studies
Travel time/cost	Travel time or cost to a specific set of activities (e.g. all cities over a specific size or level of attraction)	Lutter et al. (1992); Chatelus and Ulied (1995)
Daily accessibility	Activities reached (e.g. population, GDP or employment) within a certain time	Chatelus and Ulied (1995); Spiekermann and Wegener (1996)
Potential accessibility	Activities reached (e.g. population, GDP or employment) weighted by a function of travel cost (e.g. travel time by car, lorry, rail, air or multi-modal means of transport)	Keeble et al. (1981); Owen and Coombes (1983); Keeble et al. (1988); Linneker and Spence (1992); Gutierrez and Urbano (1996); Copus (1997)

The daily accessibility indicator specifies a set amount of time for travel, which as the name of the indicator suggests, is usually expressed in terms of a day (e.g. three to five hours, one-way). This type of indicator is applied to studies where only destinations that can be reached within a set time are of interest (e.g. Chatelus and Ulied, 1995; Spiekermann and Wegener, 1996). The application of this indicator to business travel is particularly common as it can be used to compare how long it takes a business traveller from different destinations to travel to a certain city, conduct their business there and return home (Chatelus and Ulied, 1995). Similarly to the travel time/cost indicator, the daily accessibility indicator excludes irrelevant destinations (i.e. those that cannot be reached within the set time of travel) but is easy to interpret (Schürmann and Talaat, 2000).

Potential accessibility indicators take account of both the size and distance of destinations and are based on the assumption that: “the attraction of a destination increases with size and declines with distance or travel time or cost” (Schürmann and Talaat, 2000; p9). This type of indicator is considered superior to travel time/cost and daily accessibility indicators as it is founded on sound behavioural principles. However, the units are difficult to interpret and must usually be presented as a percentage of average accessibility of all regions (Schürmann and Talaat, 2000).

Travel time/cost and daily accessibility indicators have been widely used in aviation-related studies in order to illustrate the peripherality of a certain study area. For instance, Greaves (2003) uses a travel time/cost indicator to illustrate the peripherality of Cornwall in relation to other parts of England. Similarly Pagliari (2003) uses a travel time/cost indicator to illustrate the peripherality of the Highlands and Islands region of Scotland in relation to other parts of Scotland and MacLeod (2003) uses a daily accessibility indicator to illustrate the peripherality of the same region. Gloersen (2005) illustrates how each of the three types of peripherality indicators (i.e. travel time/cost indicator, daily accessibility indicator and potential accessibility indicator) can be used in an aviation context. Examples of the three peripherality indicators in practice are provided in figure 2.2.

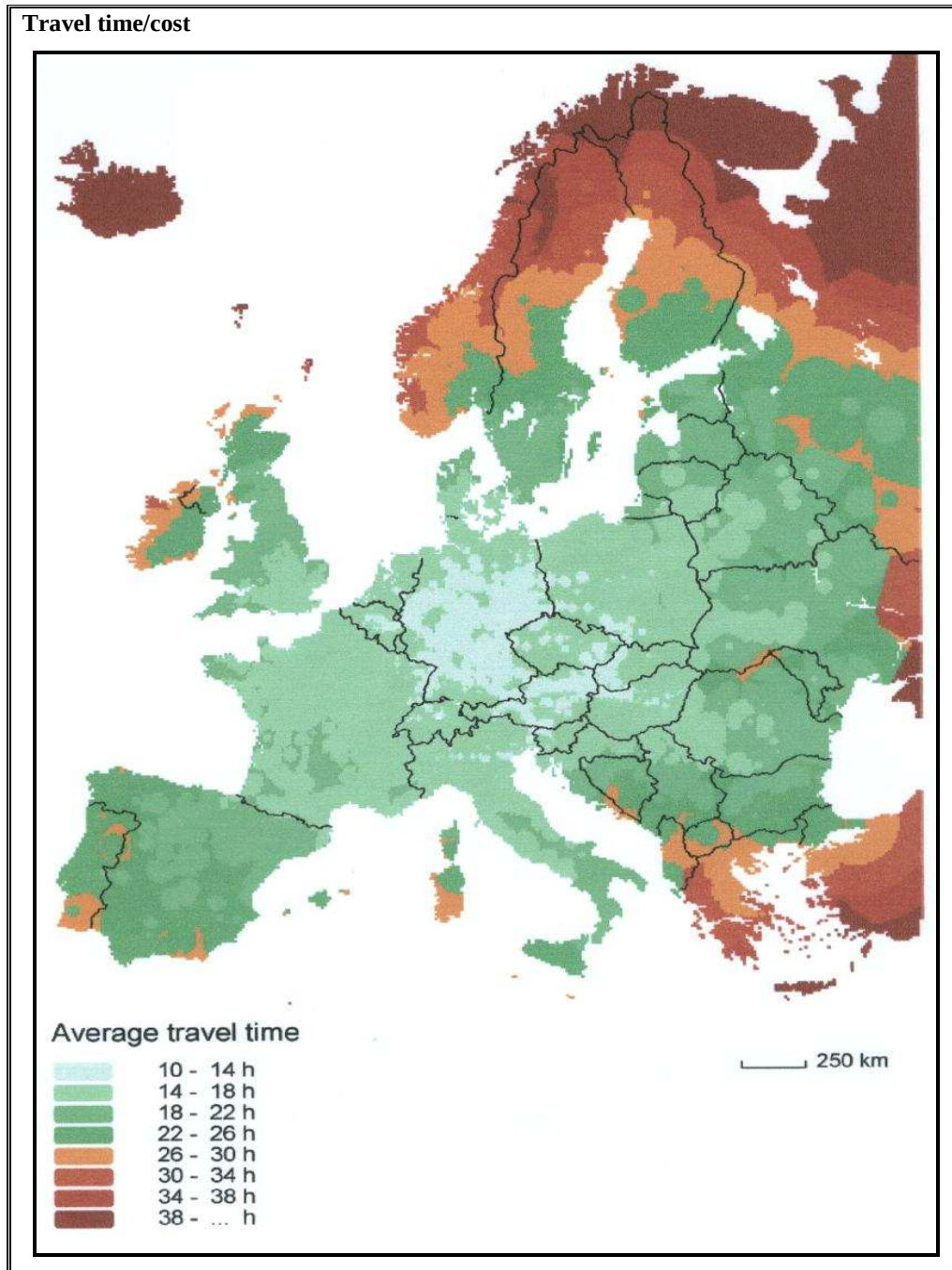
The travel time/cost indicator in figure 2.2 is based upon rail travel times for 10x10 kilometre raster cells to large cities in 2010 (192 cities with a population of more than 250,000). The European average is 22 hours. Any area shaded orange, red or brown is above average and can be considered as being peripheral². The daily accessibility indicator in figure 2.2 is based upon the population in 2010 that can be reached by a return trip by rail in a single working day (in five hours of travel, one-way, door-to-door). On this map, the darker coloured areas are considered to be more central than the lighter coloured areas and for people travelling from the most peripheral areas (expressed on the map by the lightest shade of green³), less than one million inhabitants can be reached by a return trip by rail in a single working day. The potential accessibility (gravity) indicator in figure 2.2 is based upon the potential population in 2010 that can be reached by rail. Areas with the highest level of potential accessibility are expressed on the map by the darkest shade of red whilst the areas that have the lowest level of potential accessibility are expressed on the map by the lightest shade of green⁴.

² If the reader is viewing this document in black and white, areas with an above average travel time/cost are expressed by the three darkest shades on the map.

³ If the reader is viewing this document in black and white, the most peripheral areas are expressed in the lightest shade on the map.

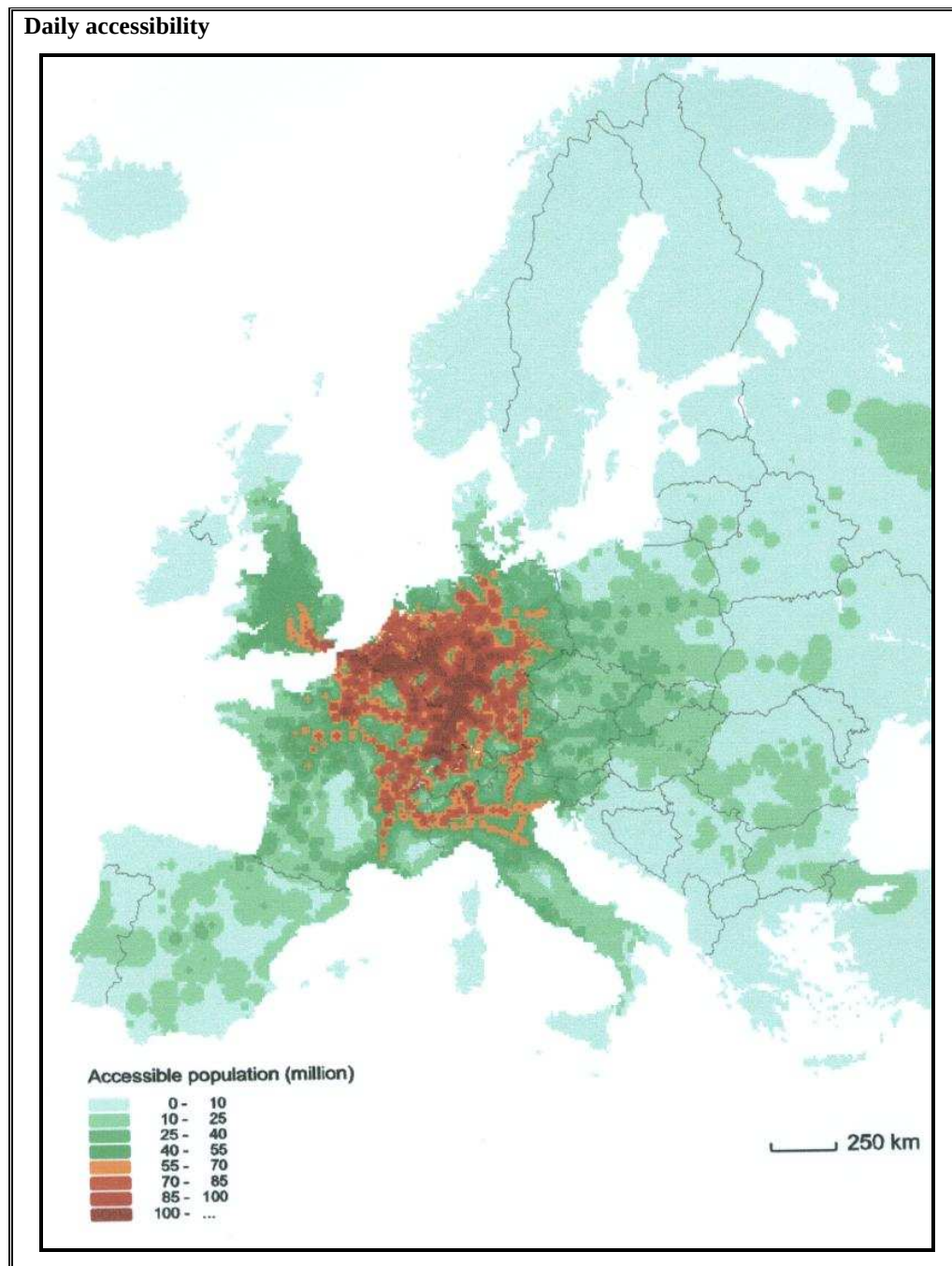
⁴ If the reader is viewing this document in black and white, the areas with the highest level of potential accessibility are expressed on the map by the darkest shade whilst the areas that have the lowest level of potential accessibility are expressed on the map by the lightest shade.

Figure 2.2 Peripherality indicators



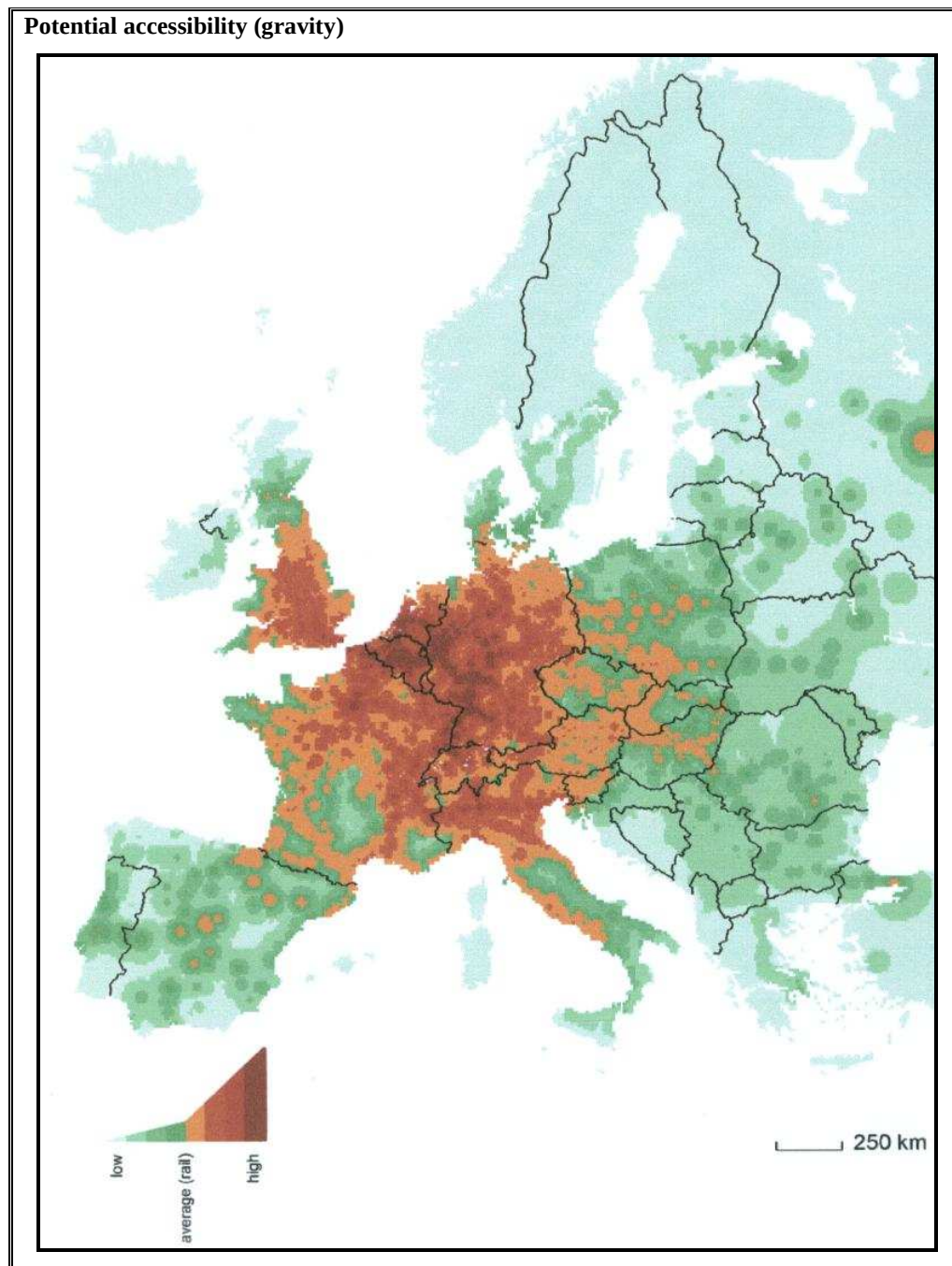
Source: Schürmann et al. (1997)

Figure 2.2 Peripherality indicators (continued)



Source: Schürmann et al. (1997)

Figure 2.2 Peripherality indicators (continued)



Source: Schürmann et al. (1997)

A variety of indicators can be developed with different measurements of activity and modes of travel, and the measurements used for each indicator should always reflect the nature of the study. For example, if using a potential accessibility model, travel time by passenger car tends to represent the perspective of service companies and consumers (i.e. the markets that can be reached from a particular region) whilst travel time by freight lorry tends to represent the perspective of producers on potential markets such as industry, jobs and business opportunities (Schürmann and Talaat, 2000).

Whilst the three examples in figure 2.2 demonstrate that the indicator used will determine the distribution of accessibility, they also demonstrate similarities between indicators and a common centre-periphery pattern can be seen that is reflective of the concept of the ‘golden triangle’ or ‘blue banana’ (referred to in literature such as Kilby, 1980; Hanlon, 1999). Europe’s most accessible regions are those that are closest to Europe’s core areas of economic activity (e.g. within a triangle or banana shaped distribution that includes London, Paris, Geneva, Prague, Berlin, Amsterdam and Brussels). Europe’s least accessible (i.e. peripheral) areas include the northernmost areas of Scotland, parts of Ireland, the Nordic countries, the Baltic States, parts of Eastern Europe, parts of Southern Europe and the Mediterranean islands.

One aspect that the peripherality indicators reviewed so far do not measure is the ‘perceived degree of remoteness’, which is determined by three types of permanent structural handicap: sparse population island regions; and, mountain areas (Gloersen, 2005). As a result, alternative and/or additional measures to the peripherality indicators can be used to define peripherality. Studies of interest include Schürmann and Talaat (2000) for population density, European Commission (2003) for island regions, and European Commission (2004) for mountain areas. Figure 2.3 illustrates the population density of Europe’s NUTS II⁵ regions (i.e. regions with a population density of 100 inhabitants per

⁵ In order to collect and compare data on different states and their regions, Eurostat have defined a Nomenclature of Territorial Units for Statistics (NUTS) (Eurostat, 2003), which is based primarily on the institutional divisions of states at different levels. The present NUTS system divides the countries of Europe into five levels (three regional and two local), known as NUTS I through to NUTS V.

square kilometre or less, which are expressed on the map by the yellow shading and by the lighter shade of orange⁶) and Europe's mountain areas (expressed on the map in dark brown⁷).

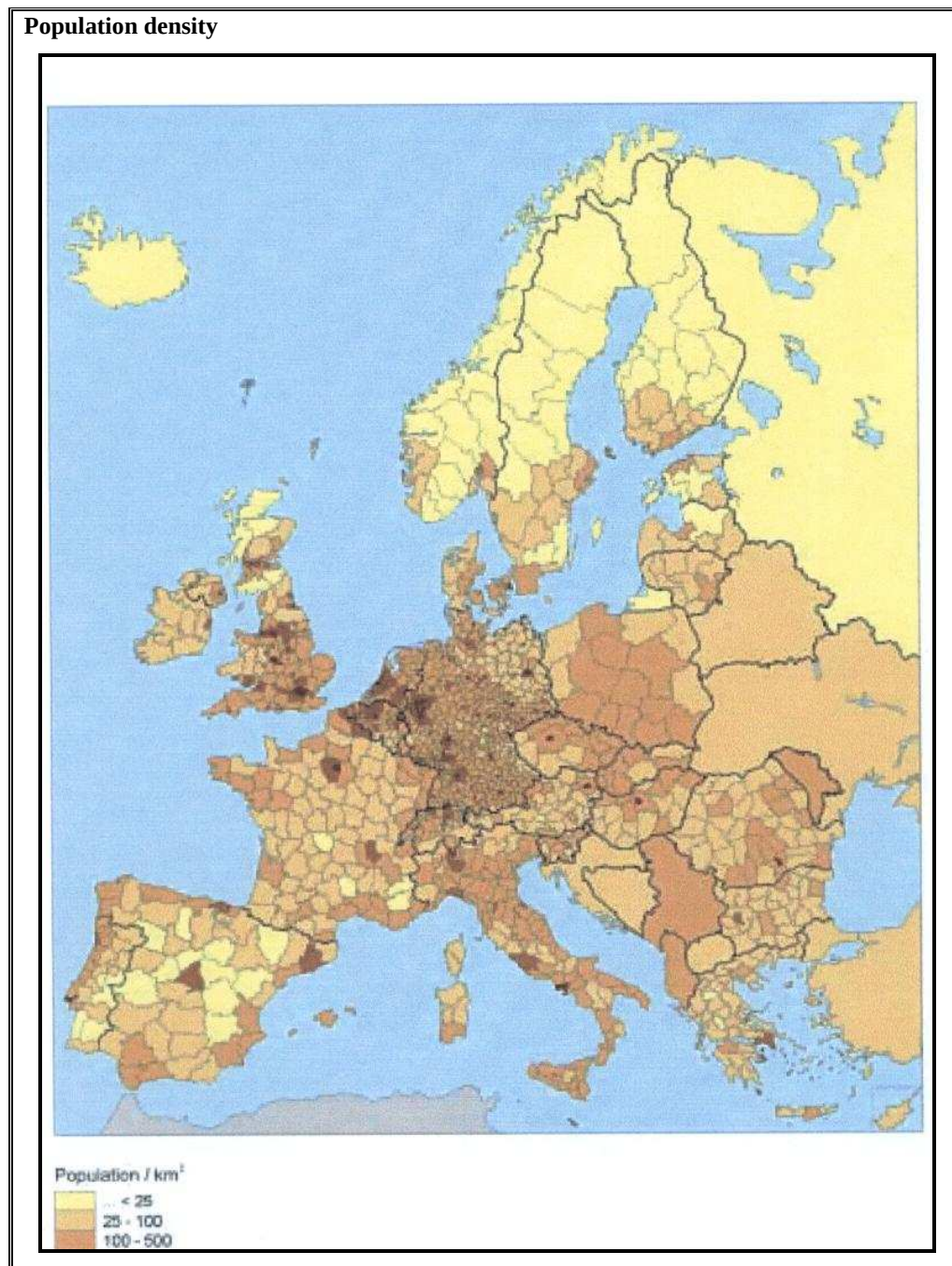
Despite subtle differences between indicators in figure 2.2 and figure 2.3, the general centre-periphery pattern is maintained.

Table 2.2 lists Europe's island regions according to both NUTS II and NUTS III classifications. Most of the island regions listed in table 2.2, at both NUTS II and NUTS III are located in Southern/Mediterranean Europe (e.g. France, Spain, Italy and Greece) but a number of island regions are located in Northern Europe (e.g. Scotland, Sweden and Denmark). The location of the islands tends to conform to the centre-periphery pattern that has been illustrated so far. For instance, the island regions tend to be located in peripheral areas (according to the peripherality indicators in figure 2.2) and many of the island regions are mountainous (according to the mountain areas map in figure 2.3). The only exception to the centre-periphery pattern comes when population density is considered (e.g. in figure 2.3) as many of the island regions in table 2.2 are not sparsely populated. This is because the islands tend to have a relatively small surface area so the population is more densely concentrated. However, the high population density does not compensate for their inaccessible location.

⁶ If the reader is viewing this document in black and white, regions with a population density of 100 inhabitants per square kilometre or less are expressed on the map by the two lightest shades.

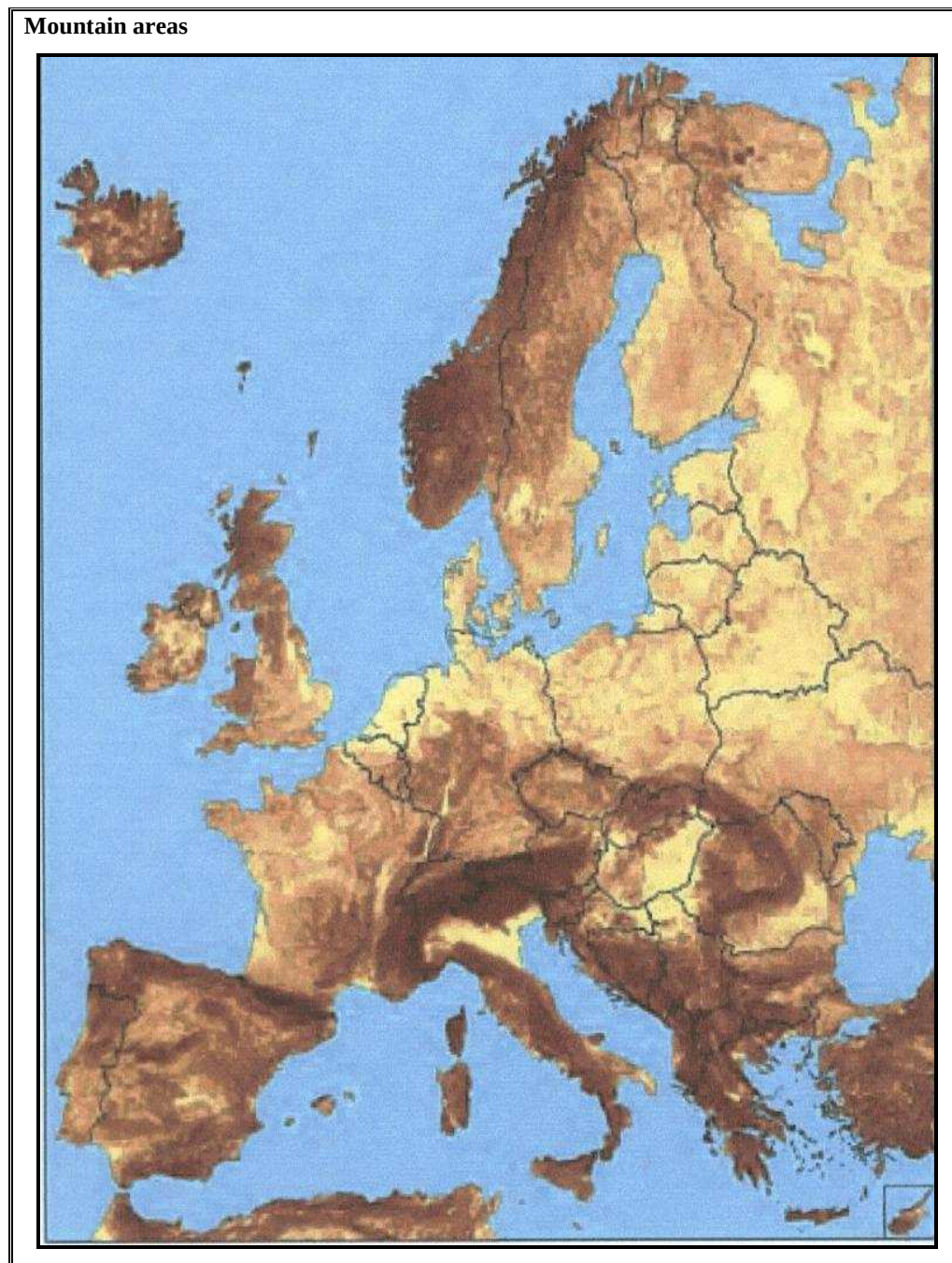
⁷ If the reader is viewing this document in black and white, Europe's mountain areas are expressed by the darkest shade on the map.

Figure 2.3 Measures of the perception of remoteness



Source: Schürmann and Talaat (2000)

Figure 2.3 Measures of the perception of remoteness (continued)



Source: Schürmann and Talaat (2000)

Table 2.2 Europe's island regions

NUTS II Code and region	No. of islands	NUTS III Code and region	No. of islands
FR83 Corsica	1	ES631 Ceuta	1
ES53 Balearic Islands	4	ES632 Melilla	1
FI20 Åland	11	DK007 Bornholm	1
ITA Sicily	15	SE034 Gotland	1
ITB Sardina	5	UKJ34 Isle of Wight	1
ES63 Ceuta & Melilla	2	UKM44 Hebrides	3
GR22 Ionian Islands	12	UKM45 Orkneys	12
GR41 Voreio Aigaio	10	UKM46 Shetland	9
GR42 Notio Aigaio	42	GR421 Dodecanese	18
GR43 Crete	2	GR422 Cyclades	24
		GR411 Lesbos	3
		GR412 Samos	4
		GR413 Chios	3
		GR221 Zakynthos	6
		GR222 Corfu	2
		GR223 Keffalinia	3

Source: Adapted from Plainstat Europe and Bradley Dunbar Associates (2003)

A number of island regions are missing from the list in table 2.2. The most obvious ones include the Isle of Man, the Channel Islands and the Faroe Islands. This is because these regions are not included in the NUTS classification of regions. In addition, the list in table 2.2 does not include island regions from the 10 states that joined the EU in May 2004 (e.g. Cyprus and Malta), islands from the countries of the European Free Trade Association (EFTA)⁸ (e.g. Svalbard and the Lofoten Islands in Norway), or islands belonging to Europe's outermost regions such as Guadeloupe, Martinique, Réunion, the Canary Islands, the Azores, and Madeira.

⁸ The current members of the EFTA are Iceland, Norway, Switzerland and Liechtenstein.

2.1.2 Disparities between central and peripheral areas

The locational disadvantages of peripheral areas are often associated with ‘disparities’; negative factors that are comparable with central areas and are a consequence of high distance costs and/or a perceived degree of remoteness. A number of disparities are listed in table 2.3.

Table 2.3 Disparities between central and peripheral areas

Central areas	Peripheral areas
High levels of economic vitality and a diverse economic base	Low levels of economic vitality and dependent on traditional industries
Metropolitan in character. Rising population through in-migration with a relatively young age structure	More rural and remote – often with high scenic values. Population falling through out-migration, with an ageing structure
Innovative, pioneering and enjoys good information flows	Reliant on imported technologies and ideas, and suffers from poor information flows
Focus on major political, economic and social decisions	Remote from decision-making leading to a sense of alienation and lack of power
Good infrastructure and amenities	Poor infrastructure and amenities

Source: Adapted from Botterill et al. (2000)

Obviously, some exceptions to the disparities will always exist. For example, devolution in the United Kingdom (UK) means that Scotland, once far from the decision-making processes of Whitehall in London now has a strong regional office of its own. In addition, despite being fairly peripheral, many Scandinavian regions are strong economic performers that display innovation and entrepreneurship, especially in the hi-tech industries such as telecommunications. However, in general, the locational disadvantages are a reality for EPA's.

The European Commission (EC) recognises the disadvantages that are faced by peripheral areas and uses a combination of quantifiable and perceived measures of remoteness in its

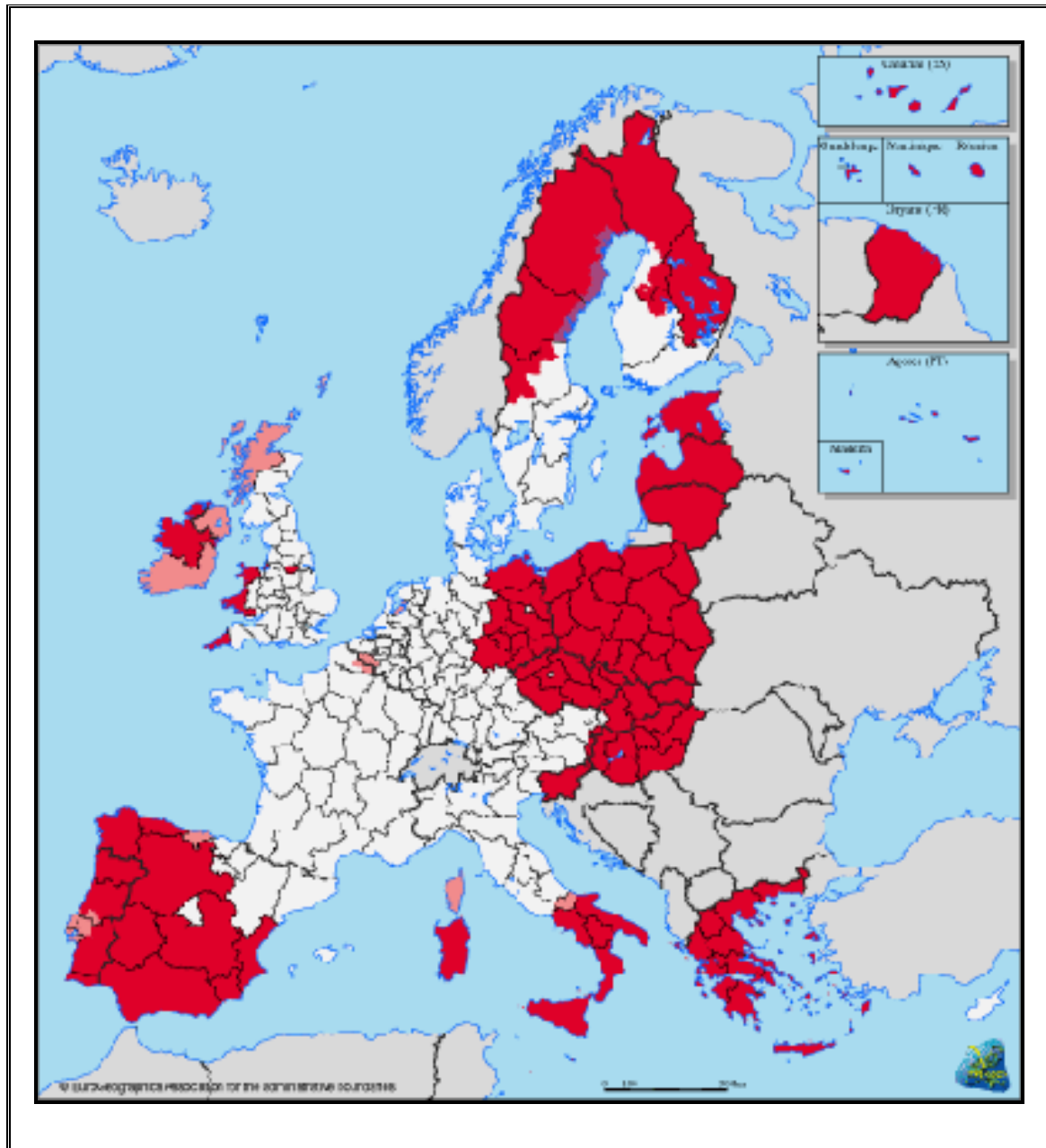
criteria for structural funding. For example, Objective 1 is a structural fund that promotes the development and structural adjustment of ‘remote regions’ and the fund applies to Europe’s outermost regions (the four French overseas departments of Guadeloupe, Martinique, French Guiana and Réunion; the Canary Islands, which form part of Spain; and, the Portuguese islands of the Azores and Madeira) and regions with a very low population density. Objective 1 also applies to regions whose development is lagging behind. This is determined by an average Gross Domestic Product (GDP) of less than 75% of the European average (European Commission, 2005a).

Figure 2.4 illustrates the regions (of EU member states) that are eligible for Objective 1 funding (those regions that are highlighted in red on the map⁹) or are receiving transitional support (those regions that are highlighted in pink on the map¹⁰). Obviously, Objective 1 only applies to members of the EU and therefore excludes countries such as Norway and Iceland. However, yet again, the common centre-periphery pattern emerges whereby the regions that are most eligible for funding are those that are located in Europe’s more peripheral areas including northernmost areas of Scotland, parts of Ireland, the Nordic countries, the Baltic States, parts of Eastern Europe, parts of Southern Europe and the Mediterranean islands.

⁹ If the reader is viewing this document in black and white, regions that are eligible for Objective 1 funding are highlighted in black on the map.

¹⁰ If the reader is viewing this document in black and white, regions that are receiving transitional support are highlighted in grey on the map.

Figure 2.4 Objective 1: eligible regions or regions receiving transitional support



Source: European Commission (2005a)

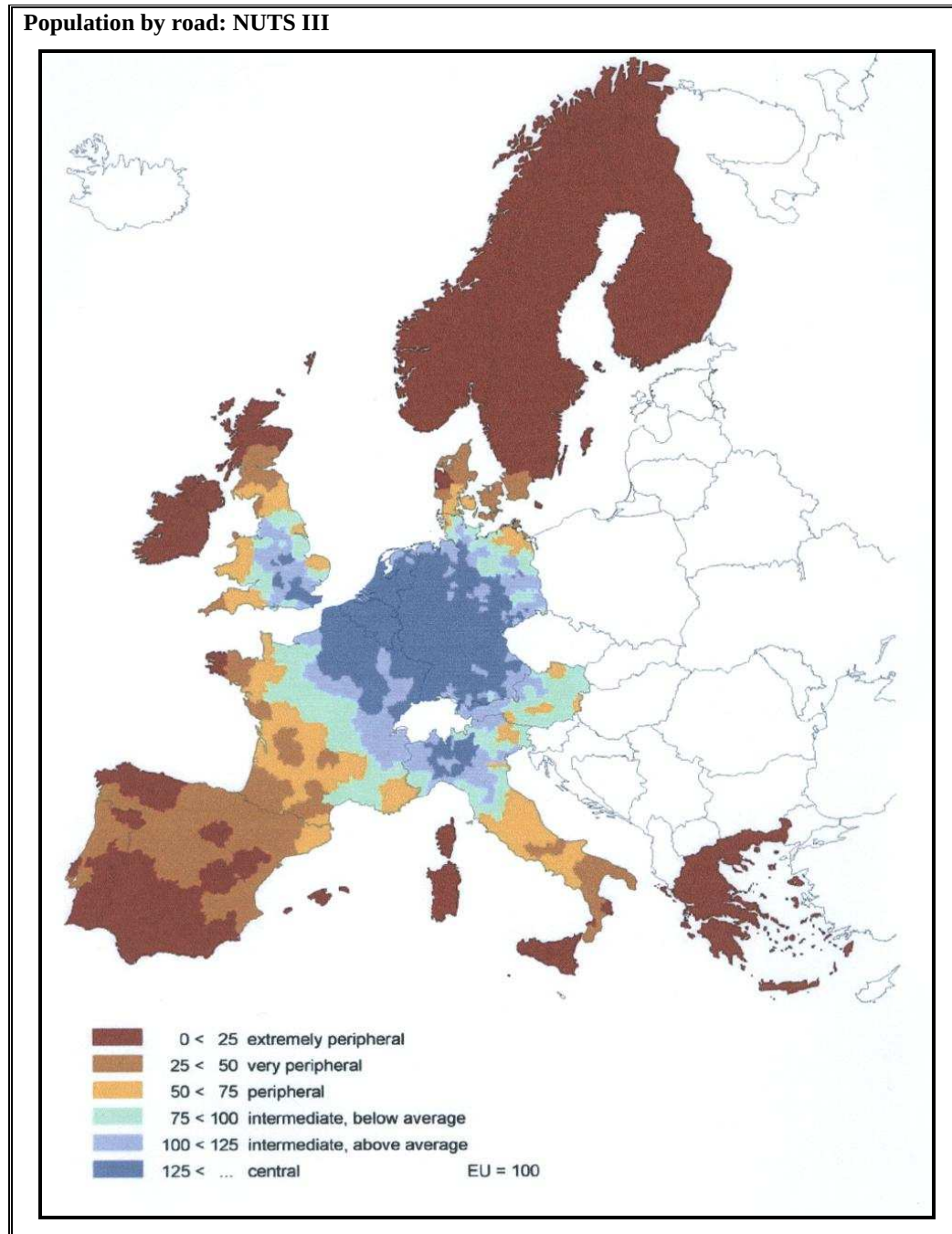
2.1.3 The role of airports

If the disadvantages of peripheral regions are linked to their relative inaccessibility, it can be assumed that fast, efficient and affordable access to the main transportation networks will help to reduce the negative consequences (i.e. the disparities) of inaccessibility. Of all available transport modes, air transport is particularly important for the development of peripheral areas because it is by far the most efficient mode of transport for areas that are said to be disadvantaged by the effects of inaccessibility (Rodrigue, 2004).

The importance of air transport to peripheral areas is emphasised by Reynolds-Feighan (1995). She states that: “air services to small communities and to isolated communities play a vital role in linking these centres to the main transportation networks and thus improve accessibility of these communities” (Reynolds-Feighan, 1995; p467). Airports (as providers of infrastructure for air services) facilitate accessibility and therefore promote the social and economic integration of their region, and this has been acknowledged in a number of academic and professional studies (e.g. Robertson, 1995; Graham, 2003b; ACI-Europe, 2004; Barrett, 2004). Gloersen (2005) even goes so far as to suggest that the presence of an airport may be a determining factor for differentiating between viable and non-viable peripheral communities.

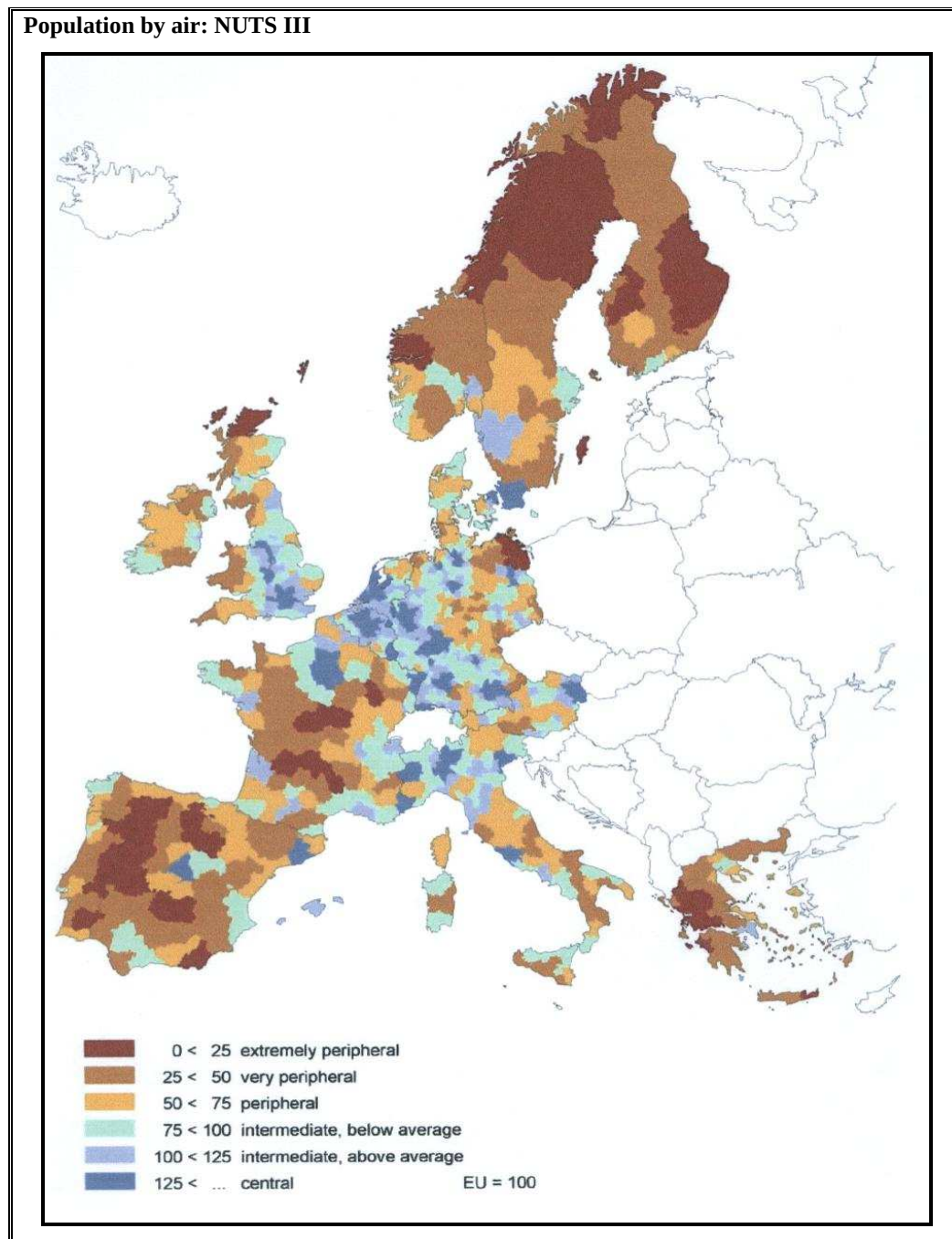
The impact of airports on the accessibility of peripheral areas is illustrated by figure 2.5, which compares population accessed by road with population accessed by air for NUTS III regions.

Figure 2.5 Population accessed by mode of travel for NUTS III regions



Source: Schürmann and Talaat (2000)

Figure 2.5 Population accessed by mode of travel for NUTS III regions (continued)



Source: Spiekermann and Neubauer (2002)

When accessibility by air (using population as the destination activity) is compared to accessibility by road, the patterns are very different. Regions that have major international airports such as Copenhagen and Malmö in Northern Europe or Mallorca in Southern Europe suddenly become relatively central. Even remoter parts of Northern Norway and Finland become less peripheral when air access is considered because of the provision of fairly large airports in areas such as Tromsø in Norway and Rovaniemi in Finland.

Smaller airports in peripheral areas do not appear to influence the accessibility of their region on a European scale (according to figure 2.5), primarily because of the limited number of connections or lack of access to hub airports. However, these airports play a significant role in regional development that is often greater than their size would indicate (York Aviation, 2002). This includes providing a lifeline to isolated communities and access to essential services. For instance, airports are particularly important in mountain areas or on islands because they facilitate access to essential services such as health (e.g. hospitals), communications (e.g. post and news), education (e.g. schools, colleges and universities), freight (e.g. supplies of food and clothing) and relatives. Examples are especially prevalent in peripheral parts of Northern Scandinavia and the Scottish Highlands and Islands where the lack of access is often compounded by small populations spread over large distances therefore people have to travel far to gain access to such services (European Commission, 2003; European Commission, 2004).

The importance of airports reaches much further than providing a lifeline to small and isolated communities. According to a number of sources (e.g. Mason, 2003; ACI-Europe, 2004; Congdon, 2004; Mason, 2004), airports have the potential to:

- support jobs in the local area;
- attract inward investment;
- influence company location and retention;
- enhance the competitiveness of regions and their companies;
- promote exports;

- support social opportunities for travel; and,
- facilitate the development of inbound tourism.

The potential for airports to facilitate the development of inbound tourism in EPA's has been evident throughout the last half-century with the development of mass tourism in southern/Mediterranean destinations, many of which are island regions. In more recent years, the evolution of skiing holidays has provided opportunities for mountain areas in Scandinavia and in Central and Southern Europe. As the tourism industry continues to grow and diversify, the demand for new types of tourism such as nature-based tourism (as an alternative to the traditional sun, sea and sand package) is offering increased opportunities for non-traditional destinations (Poon, 1993), many of which are located in EPA's. However, the marketplace for tourism is highly dynamic and competitive and peripheral areas are at a disadvantage from more central areas due to their relative isolation and lack of affordable access (Mykletun et al., 2001). For this reason, the provision of appropriate and affordable transport infrastructure is of paramount importance to the development of inbound tourism. The fact that trends in tourism are moving towards a shortening of the longer main holiday in favour of shorter, fragmented holidays (European Travel Commission, 2005) further lends itself to air transport due to the time cost savings that it can generate compared to other transport modes.

The importance of transport to peripheral areas is recognised by the EC and it is for this reason that transportation networks are high on the policy agenda for the EC's objectives for social and economic cohesion. For instance, the European Commission states that:

“in contributing to the implementation and development of the Internal Market, as well as re-enforcing economic and social cohesion, the construction of the trans-European transport network is a major element in economic competitiveness and a balanced and sustainable development of the European Union. This development requires the interconnection and interoperability of national networks as well as the access to them” (European Commission, 2005b).

To achieve their objectives, the EC has established Trans-European Transport Networks (TEN-T), guidelines covering the objectives, priorities, the definition of projects of common interest, and the main themes of the envisaged measures (European Commission, 2005b). However, what is surprising about the TEN-T is their lack of focus on air transport. For instance, out of twenty-two priority projects or project extensions adopted or proposed between 1996 and 2001, only one was air transport-related (Milan Malpensa Airport) (European Commission, 2005c). Of the remaining twenty-one projects, fourteen were rail-related, three were multi-modal (rail and road), two were road-related, one was river-related, and one was related to the global navigation and satellite positioning system, Galileo.

The Assembly of European Regions recognises the lack of focus on air transport by the TEN-T and suggests that:

“regional aviation must be included in the TEN (Trans-European Networks), which currently fails to mention regional aviation. The importance of the regional aviation sector needs to be appreciated in its function of promoting inter-modality in Europe” (AER, 2004; p3).

Reasons for a lack of focus on air transport may be due to the increasing environmental pressure on aviation, congested skies over Europe and at Europe’s main airports, and the fact that intra-European routes are relatively short and can be served by surface transport. However, it may also be due to the fact that air transport markets in Europe are now deregulated and that an increasing amount of investment therefore comes from the private sector. Deregulation has had major consequences for airports in EPA’s, especially on the way in which they are managed and their ability to attract new routes and grow and maintain existing routes. The process of deregulation and the consequences for airports in EPA’s is the focus of section 2.2.

2.2 Deregulation

The deregulation of air transport markets has had a dramatic impact on the air transport industry and a wealth of literature has been produced on the subject including a number of key text books (e.g. Meyer and Oster, 1984a; Meyer and Oster, 1984b; Button, 1990; Dempsey and Goetz, 1992; Williams, 1993; Button and Stough, 2000; Sinha, 2001; Williams, 2002). Most of the literature tends to focus on the implications of deregulation for the airline industry. However, the implications for airports, including those that are located in EPA's, are receiving increased attention. Before considering literature relating to the implications of deregulation on airports in EPA's, literature relating to the process of deregulation, primarily of European air transport markets will be reviewed.

2.2.1 Bilateral regulation of Europe's international markets

Burghouwt and Huys (2003) summarise the evolution of the European air transport industry from a period of bilateral regulation to one of limited competition. They explain how from the Second World War onwards, the European air transport industry was characterised by bilateral regulation and the trinity of the national government, the national carrier and the national airport. Under this trinity, individual nations that wished to develop international air transport links would negotiate agreements on a bilateral basis. These agreements were known as bilateral Air Service Agreements and were negotiated by governments within the framework of the five 'freedoms of the air' defined by the Chicago Convention in 1944 (Hanlon, 1999). The five freedoms allowed governments to negotiate the following rights:

1. To fly over one country en-route to another (1st freedom).
2. To make a technical stop in another country (e.g. for fuel) (2nd freedom).
3. To carry passengers from home to another country (3rd freedom).
4. To carry passengers from another to home country (4th freedom).

5. To carry passengers between two countries by an airline of a third, on a route that originates or terminates at home (5th freedom).

The first two freedoms would usually have taken place as a matter of course. However, governments would bargain with one another for the exchange of the third, fourth and fifth freedom rights and would try to lever the agreements to their own advantage. Governments would agree the number of gateways (airports), the designated carriers, and the division of seat capacity whilst tariffs were derived from decisions by the International Air Transport Association (IATA)¹¹. More specific details pertaining to the features of traditional Air Service Agreements can be found in Doganis (2001).

The period of bilateral regulation meant that individual nations were able to protect the interests of their own airlines and airports and were able to determine the nature and geographic distribution of air transport networks and infrastructure. This meant that each nation would have its own dominant airline and airport, each of which would be primarily state-owned and heavily subsidised. They would also be considered to be status symbols for their respective nations. The monopolistic situation meant that there was minimal competition, high prices, and a lack of incentive for airlines or airports to reduce costs and improve efficiency (Burghouwt and Huys, 2003).

Most nations were able to develop a national airline and a national hub airport (e.g. British Airways and London Heathrow Airport in the UK, both of which were owned by the UK government). The only major competition on international routes came from charter carriers that fell outside of the scope of bilateral regulation (Doganis, 1991; Papatheodorou, 2002). These carriers helped shape international networks and infrastructure to and from larger regional centres such as Birmingham and Manchester in the UK, primarily serving the inclusive tour package markets from northern to southern European destinations.

¹¹ IATA is an association of international airlines that was founded in 1945. More information about IATA can be found at www.iata.org.

2.2.2 *Ad hoc* regulation of Europe's domestic markets

Domestic air transport markets in Europe have also been characterised by a period of regulation. However, regulatory controls were determined by individual nations, as opposed to the bilateral system of Air Service Agreements that was used to govern scheduled international services within and outside the EU. In most instances, governments awarded contracts to flag carriers or their subsidiaries to operate under monopolistic conditions on domestic routes. For instance, according to Williams (2002):

- the French Government authorised Air Inter to operate the domestic route network in France;
- the national airline of Spain (Iberia) and its subsidiary (Aviaco) had a monopoly over the provision of domestic routes in Spain; and,
- the Norwegian Government granted Norway's busiest route (Oslo to Bergen), routes in the north, and routes between the north and south to SAS (the multinational airline). Braatens SAFE operated southern routes and Widerøe operated routes connecting Norway's remoter coastline communities.

This *ad hoc* approach to domestic regulation was also observed by Button and Stough (2000) who describe how each nation within the EU had its own philosophy and approach to economic regulation. For countries where domestic aviation is relatively important such as France, Spain and Greece, regulations on market entry and fares were traditionally heavily regulated (Button and Stough, 2000) whilst for other countries such as the UK, a more liberal approach to domestic air transport policy, especially in terms of the allocation of licenses and acceptance of fare flexibility was adopted (UK CAA, 1988). The more liberal approach adopted by the UK suggested that competition on domestic routes was beneficial. However, the benefits were not advocated by other countries such as France, Spain, Italy, and Germany who were less inclined to adopt a liberal domestic policy (Button and Stough, 2000).

2.2.3 Justifications for regulating European air transport markets

The justifications for regulating European air transport markets were wide-ranging. According to Williams (2002), “the perceived need to provide essential air links between communities provided the justification for regulating the supply of air transport services [in this way]” (Williams, 2002; p15). Other justifications have been highlighted by Button and Stough (2000) and include:

- the need to protect national interests by protecting national carriers that serve wider economic and military roles;
- the need to ensure market stability, safety standards and the provision of an institutional framework for a rapidly expanding industry;
- the need to protect the public from monopoly exploitation; and,
- the need for nations to protect their ability to export aviation services and promote earnings from foreign trade.

From an airline perspective, regulation meant that airlines were able to cross-subsidise less profitable routes with the profits made on more profitable routes, whilst governments prevented the abuse of monopoly power by regulating fare levels (Williams, 2002).

During the regulated era, some countries benefited from the ability to use their bargaining position or historical factors to develop strong international and domestic networks. However, the *ad hoc* regime didn’t encourage an efficient air transport system, it worked against the unification process of the EU, and it faced growing opposition from airlines and consumer groups.

2.2.4 Deregulation in Europe

Reforms in Europe were gradually accompanied by private sector involvement. For instance, in 1987, the UK government privatised the national airline, British Airways and

the main airports. Other countries pursued a gradual selling off of stock as in the case of Germany with Lufthansa and Holland with KLM. However, airports in other countries tended to remain in the public sector.

The next stage on the road to reform was the deregulation of a number of domestic markets around the world. Table 2.4 highlights a number of domestic European markets and the year in which their deregulation process was complete.

Table 2.4 Deregulation of Europe's domestic markets

Country	Year of deregulation
Sweden	1992
Germany	1993
Ireland	1993
Italy	1993
Norway	1993
Portugal	1993
United Kingdom	1993
France	1994
Spain	1994

Source: Adapted from Williams (2002)

The economic controls over many international airline markets have been reduced in recent years. However, Europe is the only international market to have achieved a full deregulation of its air transport services and this was achieved through the progressive introduction of three packages of liberalisation¹² (Doganis, 2001).

¹² Liberalisation is a gradual and phased form of deregulation. An instant form of deregulation was used to deregulate air transport markets in the United States of America (USA) in 1978 but European air transport markets were liberalised using a gradual three-phase approach, which was seen as being able to minimise short-term market fluctuations, allow time to adapt to change, and provide a framework within which policy errors can be detected (Button and Stough, 2000). The remainder of this thesis will use the term deregulation when discussing the liberalisation of European air transport markets, except when the term liberalisation is used in a quote, in which case the quoted terminology will be used.

The first package of European deregulation was introduced in 1987, the second package was introduced in 1990 and the third package was implemented between 1993 and 1997. Each package reduced restrictions on setting air fares, choosing frequency and capacity, and choosing entry and exit routes (Button et al., 1998). European deregulation resulted in the creation of the European Aviation Market, which currently consists of the EU member states and three member states of the EFTA; Switzerland, Norway and Iceland (European Commission, 2005d)¹³. Liechtenstein belongs to the EFTA but does not have an airport that provides commercial air services.

It is important to note that an extended system of bilateral Air Service Agreements still determine agreements between nations outside of the European Economic Area (EEA)¹⁴ and between EEA nations and non-EEA nations (Doganis, 2001). In addition, the EU can intervene when the market is structurally out of balance (i.e. if the industry experiences a sustained downward trend in fares or if nations feel the need to support necessary, but unavailable routes to peripheral areas through PSO's) (European Commission, 2005e). The current situation in Europe is therefore sometimes referred to as a period of limited competition (Burghouwt and Huys, 2003).

2.2.5 Impact of deregulation in Europe

According to Baumol (1982), deregulation is partly justified on the presumption of competition working in thick markets and the significance of contestability on thin routes. However, literature on the impact of deregulation in Europe appears to report mixed findings.

Studies (e.g. UK CAA, 1995; European Commission, 1997) have considered the impact of the deregulation of European air transport markets. In general, the impact is considered to

¹³ Readers should note that membership to the European Aviation Market changes over time and that the countries stated as belonging to the European Aviation Market were correct at the time of this study.

¹⁴ The current members of the EEA are three of the four EFTA states (Iceland, Norway and Liechtenstein but not Switzerland) and the 25 EU member states.

be very positive for airports as it has widened opportunities and intensified competition amongst airlines. It has also spawned the evolution of low-cost carriers, a new source of traffic potential for airports. For instance, the European Commission (2005f) states that:

- the number of scheduled airlines established in the EEA has risen from 77 in 1992 to 139 in 2000; and,
- the number of air routes between different member states of the EU has increased by 30% since 1993.

Despite suggestions that deregulation has widened opportunities and intensified competition, the scope appears to be restricted to a small number of dense routes (European Commission, 1997). This has been observed by Pagliari (2003) who asks: “to what extent has EU liberalisation benefited Europe’s peripheral regions where traffic levels are significantly lower and air transport provision much more essential to the social and economic development?” (Pagliari, 2003; p5).

EPA’s have a good distribution of airports that were developed for military or regional development purposes (Barrett, 2004). The situation before deregulation meant that in exchange for monopoly rights on dense and profitable routes, flag carriers (or their subsidiaries) would serve lightly populated and unprofitable routes such as those providing essential air services to peripheral areas (Williams, 2002). Although many of these services would have been infrequent and operated by small aircraft with high fares, their existence was fairly well protected (Barrett, 2004). However, “one of the consequences of deregulation has been the elimination of cross subsidy from loss-making domestic services and its replacement with direct subvention” (Williams, 2002; p135).

The PSO programme was a proviso of the 1992 package of EU deregulation and was set up to compensate for the performance of the obligation to operate lifeline domestic services to peripheral areas. However, as Reynolds-Feighan (1995) concludes in her paper, the benefits of deregulation, despite the use of PSO’s, are not being spread to the small

communities. In addition, it has been suggested by Williams and Pagliari (2004) that major inconsistencies exist in the approach and commitment to PSO's across Europe. This is demonstrated in table 2.5 where it can be seen that PSO's are widely used in some countries such as Norway and France but not in others such as Iceland, Germany and the Irish Republic.

Table 2.5 Number of domestic market PSO's by country (September 2001)

Country	Number of PSO's
France	46
Germany	5
Iceland	1
Irish Republic	5
Italy	6
Norway	61
Portugal	10
Scotland	12
Spain	10
Sweden*	1

Key:

* = Ten more PSO's were introduced in 2002.

Source: adapted from Williams and Pagliari (2004)

The elimination of cross-subsidies from loss-making domestic services and the inconsistent use of the PSO programme across Europe mean that the role of air transport as a public service has been diminished in some areas and has made way to unpredictable and rapidly changing market forces. This explains why the effect on air services to peripheral areas is often presented as an adverse outcome of deregulation. For example, in her case study on the effects of deregulation on Irish regional airports, Reynolds-Feighan (1995) found that deregulation created market turbulence, characterised by cyclical and permanent reductions in air service provision. Hanlon (1992) provides the following quote from Dempsey (1990), which supports the findings of Reynolds-Feighan (1995) and states that:

“while deregulation has a class of beneficiaries, consumers in small towns and rural communities are not amongst them. With the elimination of entry and exit regulation, airlines have been free to reduce their level of service to less lucrative communities and focus their energies and equipment on more profitable market opportunities. The result of airline deregulation is that many small communities have experienced a drastic reduction in air service” (Dempsey, 1990; p183).

Pagliari (2005a) provides a similar synopsis to that of Dempsey (1990) providing examples from the UK. He recognises that whilst there are a number of beneficiaries of deregulation (i.e. UK regional airports) those situated on Europe’s northwestern periphery (i.e. Scotland) are not amongst them. His study looks at developments in the supply of direct international air services from airports in Scotland and suggests that:

“while deregulation has enabled direct services to flourish at many UK regional airports, Scottish airports have to some extent been disadvantaged because of their geographic location. Situated on Europe’s north-western periphery, carriers such as British Airways, bmi and Flybe have found it more commercially expedient to serve the Scottish international market by offering connecting flights between Scotland and Continental Europe via Birmingham, Manchester or London Heathrow” (Pagliari, 2005a; p254).

Although the focus of this study is on Europe, Hanlon (1992) draws similar conclusions from the impact of deregulation in the USA but with one major difference. In the case of the transfer of direct services to hubs (e.g. Pagliari, 2005a), he considers this to have a net benefit. He suggests that (in the case of the USA) some communities have lost services all together, and some have experienced a reduction in the number of destinations (or frequency) served by direct flights. However, he points out that many of the losses in the USA were on services to non-hubs and that communities experiencing increases in their number of services to hubs would gain more opportunities for interlining and it is argued,

would have a higher net gain in services. Butler and Huston (1990) have also suggested this.

Lundvall (2005) provides a Swedish perspective based on passenger numbers as opposed to service provision. In his analysis of the structural changes affecting the Swedish airport system, Lundvall (2005) finds that domestic passenger numbers at Swedish airports have declined by 23.0% between 1990 and 2004. The impact at smaller airports that are primarily located in more peripheral parts of Sweden is alarming, with an 89.5% reduction in domestic passengers and a decline in market share of 5.7% between 1990 and 2004. These changes are shown in table 2.6.

Table 2.6 Domestic passenger volumes per airport category in Sweden, 1990-2004

Category	1990	2000	2004	% change 1990/2004	Market share change 1990/2004
Stockholm	8,202,279	7,743,291	6,697,026	-18.4	2.9
Big	5,158,972	5,483,824	4,934,331	-4.4	7.3
Middle	2,560,662	1,999,912	1,384,036	-46.0	-4.5
Small	1,131,552	645,488	118,491	-89.5	-5.7
Total	17,053,465	15,872,515	13,133,884	-23.0	0.0

Source: adapted from Lundvall (2005)

Lundvall (2005) suggests that reductions in domestic passenger numbers are a consequence of deregulation as airlines network strategies have switched from a focus on system profitability to one of route profitability. Indeed, non-profitable domestic services in Sweden appear to have been hardest hit by this new airline strategy and only PSO routes have been added during the last 15 years. Lundvall (2005) also states that deregulation has led to fewer transfer possibilities, which contradicts the findings of studies on markets in the USA (e.g. Butler and Huston, 1990; Hanlon, 1992). It is worth noting that the reductions in domestic passenger numbers in Sweden may also be a consequence of improved domestic road and rail infrastructure.

Lundvall (2005) finds the situation for international passenger volumes to be very different to that of domestic passenger volumes and this is shown in table 2.7.

Table 2.7 International passenger volumes per airport category in Sweden, 1994-2004

Category	1994	2004	% change 1990/2004	Market share change 1990/2004
Main	8,936,688	16,110,433	80.3	1.0
Other large	310,761	343,571	10.6	-1.3
Other small	117,388	163,468	39.3	-0.3
Remote regions	839	86,221	10,176.6	0.5
Total	9,365,676	16,703,693	78.4	0.0

Source: adapted from Lundvall (2005)

International passenger numbers at Swedish airports have increased by 78.4% between 1994 and 2004. Growth at airports in remote regions (i.e. those that are primarily located in more peripheral parts of Sweden) is particularly strong with an increase in international passengers of over 10,000% between 1994 and 2004 (albeit from a small base figure of 839 passengers) and an increase in market share of 0.5% between 1994 and 2004. Although the main airports are increasing their market share, so are airports in remote regions and growing leisure markets is driving this.

The growth in leisure markets is taking place at a number of airports in EPA's and in some cases is acting as a replacement to the loss of traditional scheduled services. This trend is known as 'leisure replacement' and has been referred to by Kealey (2004) who suggests that mainline, full-service carriers, especially at airports in Northern Europe are often lost or replaced by leisure carriers (e.g. charter, low-cost or niche regional carriers).

Leisure replacement has been demonstrated at Inverness Airport (the hub airport for the Highlands and Islands region of Scotland) where the growth in easyJet passengers has replaced and exceeded the loss of British Airways passengers between 1995 and 2001 (SQW, 2002). A similar trend has been demonstrated at airports in Lapland in Finland

although in this instance, it is charter carriers that have replaced the loss in scheduled passengers, and facilitated an overall growth in airport passengers between 2000 and 2003 (Lapin Liitto, 2004).

Whilst many mainline full-service carriers appear to be withdrawing services to peripheral areas or transferring direct services to hubs, there appears to be a market in some areas for airports to compete in destination markets by attracting leisure carriers. Growth in charter traffic is being driven by the continued, long-term growth in demand for international tourism, which in Europe has demonstrated an average annual growth rate of 3.4% between 1990 and 2003 (WTO, 2004). The continued, long-term growth in international tourism is also facilitating or facilitated by the growth in low-cost traffic, which has evolved since deregulation and has contributed to the growth in short-break and visiting friends and relatives markets and has provided business travellers with an alternative, low-cost option. Leisure replacement is also taking place in domestic markets, where domestic tourism, especially business and visiting friends and relatives markets, is increasingly catered for by low-cost or niche regional carriers.

Increased market turbulence (i.e. the fact that airlines are now free to enter and exit markets within Europe) and the increased ability to compete for leisure markets has major implications for airports in EPA's as they have traditionally been managed in a highly regulated and non-competitive environment, and with a public service (as opposed to commercial) focus. Such changes have important implications for airport management.

2.2.6 Implications for airport management

Before deregulation, airports the world over were considered to be public utilities with public service obligations (Doganis, 1992). This was especially the case at airports in EPA's, where the focus was on providing a public service to the many small and isolated communities by linking them to the main transportation networks (Reynolds-Feighan, 1995). As a result of their public service orientation, most airports were publicly-owned

and managed, and were largely empty, loss-making and heavily subsidised (Barrett, 2004). As a result, management was largely operations-focused with a public service background and commercial and financial management practices were not given top priority (Graham, 2003a).

On the one hand, air services to and from airports in EPA's were protected but on the other hand monopolistic conditions in the airline industry meant that there was minimal competition between airports and there was a lack of incentive to reduce costs and improve efficiency (Barrett, 2004). As a result, airport marketing was something of an oxymoron (Tretheway, 1998) and was limited to passive approaches such as the publication of an airport timetable and facility literature, the publication of non-negotiable airport charges, and responsiveness to customer enquiries (Graham, 2003a).

Deregulation has radically altered the business environment within which many airports in EPA's operate. Whilst, the PSO programme attempts to compensate for the performance of the obligation to operate a particular route at some airports in EPA's, other airports are entirely exposed to market forces. This new environment means that future air services to and from airports in EPA's may be increasingly dictated by unpredictable and rapidly changing market forces rather than public service considerations (Reynolds-Feighan, 1995).

The new market advocates market-driven management practices as a means of satisfying customers and implies that airports in EPA's must adopt an increasingly market-orientated approach to airport management. It also implies that airports that adopt a more market-orientated approach than their rivals will perform better. However, what is MO? Why are some organisations more market-orientated than others? Can MO influence performance? And which factors moderate or mediate the relationship between MO and performance? Each of these questions will be considered in section 2.3 by reviewing theoretical aspects of the marketing concept.

2.3 The marketing concept

Businesses traditionally functioned under what is often referred to as the production era; a time when products were produced on the basis of production efficiencies as opposed to what customers actually wanted. The production era was eventually surpassed by what is often referred to as the sales era; a time when products were developed and then extensively promoted to potential customers on the basis that they should purchase them. However, as with the production era, consideration was not always given to what customers actually wanted.

The marketing era emerged in the early 1950's as companies began to realise that efficient production and extensive promotion of products did not guarantee that customers would buy them (Dibb et al., 2001). Instead, businesses found that they had to determine what customers wanted before producing it. This led to the evolution of the marketing concept, which is the cornerstone of marketing thought (Jaworski and Kohli, 1993). The following definition of the marketing concept is provided by Felton (1959) who states that the marketing concept is:

“a corporate state of mind that insists on the integration and co-ordination of all the marketing functions which, in turn, are melded with all other corporate functions, for the basic purpose of producing maximum long-range corporate profits” (Felton, 1959; p55).

Similarly to Felton's 'corporate state of mind', MacNamara (1972) defines the marketing concept as a 'philosophy of business management' that encompasses aspects of profitability and coordination. However, MacNamara's definition also includes a customer focus. For instance, MacNamara states that the marketing concept is:

“a philosophy of business management, based upon a company-wide acceptance of the need for customer orientation, profit orientation, and recognition of the

important role of marketing in communicating the needs of the market to all major corporate departments” (MacNamara, 1972; p51).

MacNamara’s definition implies three core themes that underpin the marketing concept: (1) customer focus; (2) a coordinated approach to marketing; and, (3) a focus on profitability. This is supported by later literature (e.g. Kotler, 2005). However, Levitt (1969) argues that profitability is more a consequence of marketing as opposed to being part of it and states that it is like saying that: “the goal of human life is eating” (Levitt, 1969; p236).

The main constraint of the marketing concept is that it is based on idealistic corporate policy and has limited practical or operational value (Barksdale and Darden, 1971) and this is where the MO concept becomes important as it contrasts the philosophical value of the marketing concept with its implementation (MacCarthy and Perreault, 1984).

2.3.1 Defining and measuring MO

Conceptualisations of MO have been derived from two complementary perspectives; behavioural and cultural (Homburg and Pflesser, 2000). According to Kirca et al. (2005), the behavioural perspective concentrates on organisational activities related to the generation, dissemination and response to market intelligence (e.g. Kohli and Jaworski, 1990) whilst the cultural perspective concentrates on organisational values that encourage behaviours that are consistent with MO (e.g. Narver and Slater, 1990; Deshpandé et al., 1993). Key studies from the two complementary perspectives of MO will now be considered individually.

2.3.1.1 Behavioural perspective of MO

Kohli and Jaworski (1990) was one of the first attempts to develop a MO construct based on the implementation of the marketing concept. The construct proposed by Kohli and Jaworski (1990) was based upon the results of 62 field interviews with managers in diverse

functions and organisations who were asked to comment on the importance of the three core themes that underpin the marketing concept (i.e. customer focus, coordinated marketing, and a focus on profitability).

Respondents confirmed that customer focus was central to MO but that it is more than just a philosophical commitment. They suggested that it requires information about customers and their needs and preferences (i.e. market intelligence). In addition, they suggested that it should also extend to the anticipation of future needs and preferences, and an analysis of the impact of market factors on customer needs and preferences.

In terms of coordinated marketing, respondents emphasised the importance of interdepartmental involvement in terms of being aware of and responsive to customer needs and preferences. They also suggested that all departments should be guided by the customer.

In terms of managing for profitability, respondents considered profit to be the result of MO as opposed to being part of it and that profit is a reward for satisfying customer needs and preferences. This supports the argument by Levitt (1969) that profitability is more a consequence of marketing as opposed to being part of it.

In light of the findings of their field interviews, Kohli and Jaworski (1990) were able to develop a MO construct that is essentially a more precise and operational view of the first two core themes of the marketing concept; customer focus and a coordinated approach to marketing but with an emphasis on gathering, disseminating and responding to market intelligence. The findings of their study enabled them to define MO as: “the organisation-wide generation of market intelligence pertaining to current and future customer needs, dissemination of the intelligence across departments, and organisation-wide responsiveness to it” (Kohli and Jaworski, 1990; p6).

Three main elements of MO emerge from the Kohli and Jaworski (1990) definition: (1) the organisation-wide generation of market intelligence; (2) the dissemination of that intelligence across departments; and, (3) an organisation-wide responsiveness to that intelligence. Explanations of the three main elements are outlined in more detail in figure 2.6.

Figure 2.6 Kohli and Jaworski (1990) MO construct

1. Organisation-wide generation of market intelligence One or more departments engaging in activities geared toward developing an understanding of customers' current and future needs and the factors affecting them
2. Dissemination of market intelligence Sharing the understanding across departments
3. Responsiveness to market intelligence The various departments engaging in activities designed to meet select customers needs

Source: adapted from Kohli and Jaworski (1990)

The findings of the field interviews enabled Kohli and Jaworski (1990) to develop a set of 32 propositions that can be used to test the MO of an organisation. These propositions are scored by a 5-point Likert scale, ranging from 'strongly disagree' to 'strongly agree'. Later refinements to the construct (e.g. Jaworski and Kohli, 1993; Kohli et al., 1993) led to the withdrawal of a number of propositions. The remaining 20 propositions recommended by Kohli et al. (1993) for the measurement of MO can be seen in Appendix A1.

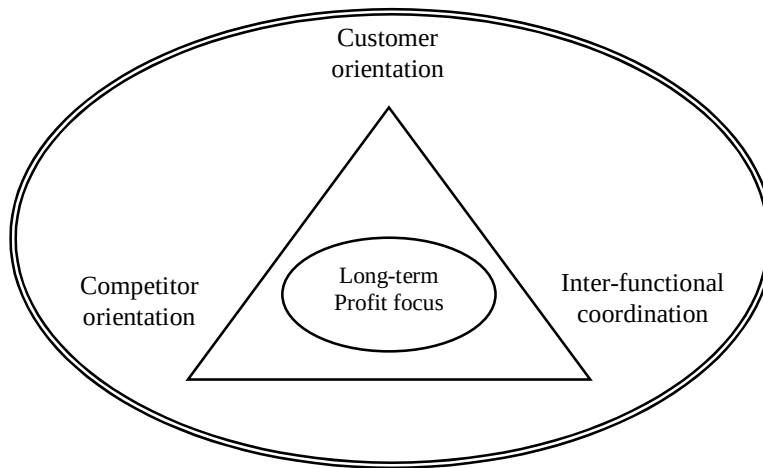
2.3.1.2 Cultural perspective of MO

The construct proposed by Kohli and Jaworski (1990) is essentially an organisational process that places an emphasis on gathering and dealing with information pertaining to customers and the company's business environment (Matsuno et al., 2005). This is similar to the process of market information research (e.g. see Deshpandé and Zaltman, 1982). Narver and Slater (1990) offer a different MO construct that is defined by organisational culture (i.e. a company's orientation towards its competitors, the company and its

customers). They define MO as: “the organisation culture that most effectively and efficiently creates the necessary behaviours for the creation of superior value for buyers and, thus, continuous superior performance for the business” (Narver and Slater, 1990; p21).

Based upon a review of literature, Narver and Slater (1990) proposed five elements of MO: (1) customer orientation; (2) competitor orientation; (3) inter-functional coordination; (4) a long-term horizon; and, (5) a profit focus. The construct is illustrated in figure 2.7.

Figure 2.7 Narver and Slater (1990) MO construct



Source: Narver and Slater (1990)

Narver and Slater (1990) conducted a survey that was completed by over 400 managers from more than 100 business units. Their survey consisted of 21 propositions relating to the five elements of their MO construct (customer orientation, competitor orientation, inter-functional coordination, long-term horizon, and profit emphasis) and the propositions were scored by a 7-point Likert scale ranging from ‘not at all’ to ‘to an extreme extent’.

On testing for reliability (by computing the coefficient alpha of each proposition¹⁵), Narver and Slater (1990) found the most reliable measurements of MO were those relating to the elements that imply specific management behaviours or activities (i.e. customer orientation, competitor orientation and inter-functional orientation). Propositions relating to long-term horizon and profit emphasis were below the minimum acceptable level of reliability and were therefore rejected. A summarised version of the 15 propositions recommended by Narver and Slater (1990) for the measurement of MO is provided in Appendix A2.

A third construct for measuring MO that belongs to the cultural school of thought has been developed by Deshpandé et al. (1993). Their construct and definition of MO is based on a customer orientation, which they see as being: “a combination of market intelligence, a focus on customer service and operational measures of service levels, responsiveness to the customer, and acceptance of the proposition that the customer comes first” (Webster, 2002; p233). In their view, customer orientation can be defined as: “the set of beliefs that puts the customer’s interests first, while not excluding those of all other stakeholders such as owners, managers, and employees, in order to develop a long-term profitability enterprise” (Deshpandé et al., 1993; p27).

Deshpandé et al. (1993) originally developed a set of 30 propositions to test for customer orientation. However, after testing for reliability (by computing the coefficient alpha of each proposition), they produced nine propositions that are statistically most reliable measures of customer orientation. The propositions are scored by a 5-point Likert scale ranging from ‘strongly disagree’ to ‘strongly agree’ and can be seen in Appendix A3.

¹⁵ The coefficient alpha is a statistic that represents reliability or internal consistency. It is commonly used by researchers to determine whether propositions used on a survey measure the same characteristic (i.e. whether different propositions that are used to measure MO, are measuring the same thing). Many studies on MO use a test called Cronbach’s Coefficient Alpha in order to calculate the coefficient alpha of a set of propositions. This study uses Cronbach’s Coefficient Alpha when testing for reliability in sub-section 5.3.1.

2.3.1.3 Reconciling the MO constructs

Apart from the obvious observation that the Kohli and Jaworski (1990) construct is behavioural and the Narver and Slater (1990) and Deshpandé et al. (1993) constructs are cultural, other observations can be made about the three constructs.

All three constructs (Kohli and Jaworski, 1990; Narver and Slater, 1990; Deshpandé et al., 1993) place a heavy emphasis on the customer and on the market intelligence dimension. All three constructs utilise an element of responsiveness to intelligence, although the emphasis is much clearer in the Kohli and Jaworski (1990) construct. In addition, both Kohli and Jaworski (1990) and Narver and Slater (1990) utilise an element of interdepartmental or inter-functional coordination although the emphasis of this is much clearer in the Narver and Slater (1990) construct. Deshpandé et al. (1993) do not place any emphasis on interdepartmental or inter-functional coordination.

The main difference between the three constructs is in the use of competitors. Narver and Slater (1990) treat this as a main element whilst Kohli and Jaworski (1990) and Deshpandé et al. (1993) utilise competition to a lesser extent and in the context of the company's business environment.

Deshpandé and Farley (1998) investigated the correlation between the three MO constructs and conducted a factor analysis of the 44 different propositions used by the three constructs. They took 10 propositions that had particularly high loadings and named the new construct 'MORTN' (Deshpandé and Farley, 1998). The 10 propositions can be seen in Appendix A4.

In concluding their study, Deshpandé and Farley (1998) suggest that: "market orientation is not a 'culture' but rather a set of 'activities' (i.e. a set of behaviours and processes related to continuous assessment of servicing customer needs)" (Deshpandé and Farley, 1998; p226) thus supporting the behavioural perspective of MO.

The conclusions of Deshpandé and Farley (1998) created much debate on the subject and were opposed by Narver and Slater (1998) in a paper aptly entitled, 'Additional thoughts on the measurement of market orientation: a comment on Deshpandé, R. and Farley'. In their paper, Narver and Slater (1998) argue that customer-related activities are the expression of organisational culture and that it is this culture that should be defined and measured as MO. For example, they argue that: "if a market orientation were simply a set of activities completely disassociated from the underlying belief system of an organisation, then whatever an organisation's culture, a market orientation could easily be implanted by the organisation any time. But such is not what one observes" (Narver and Slater, 1998; p235).

Matsuno et al. (2005) provide a summary of the debate between Deshpandé and Farley (1998) and Narver and Slater (1998) and suggest that in addition to debating the definition and measurement of MO, we should look towards the notion of implementation as it is the difficulty of implementing the marketing concept that led to the evolution of MO in the first place. For instance, Matsuno et al. (2005) state that: "although organisational culture is a sociopsychological construct that is difficult to operationalise and measure, the persisting challenge for business is that, even if a promoting environment exists, corresponding behaviour does not necessarily take place" (Matsuno et al., 2005; p2). Matsuno et al. (2005) also point out that if MO is culture-based and the antecedents to MO are culture-based, then a circular logic exists that questions the validity of that type of measurement. Other studies that have been critical of the Narver and Slater (1990) construct include Siguaw and Diamantopoulos (1995) and Oczkowski and Farrell (1998). As a result of their research, Matsuno et al. (2005) recommend an extended MO construct based upon the principles of Kohli and Jaworski (1990).

Some of the criticisms directed at the Narver and Slater (1990) construct may be somewhat unjust because as has been noted by Homburg and Pflessor (2000), the construct may be born out of a cultural definition of MO but it measures MO in terms of organisational behaviours (i.e. customer orientation, competitor orientation and inter-functional coordination).

The implications for this study are that although a number of constructs have been validated by statistically proven tests, academics are still not in agreement over which construct is a most appropriate measure of MO. A review of applications of the MO construct demonstrates the depth and breadth of use of the different MO constructs and therefore provides some indication as to how MO can be measured in an airport context.

2.3.2 Applications of the MO construct

MO has received a great deal of attention from academics and a wealth of studies has been developed since the 1990's. Table 2.8 identifies some of the studies that have been reviewed by the author.

Table 2.8 MO studies reviewed

Study	Industry/scope
Kohli and Jaworski (1990)	Interviews with 62 American companies (industrial, service and consumer)
Narver and Slater (1990)	Survey of 140 Western corporations (commodity and non-commodity)
Deshpandé et al. (1993)	Interviews with 50 Japanese companies (various)
Jaworski and Kohli (1993)	Interviews with 222 American companies (various)
Advani (1998)	Survey of 201 airports worldwide
Han et al. (1998)	Survey of 134 American banks
Morgan and Strong (1998)	Survey of 149 UK companies (various)
Van Egeren and O'Connor (1998)	Survey of 289 managers from 67 American service companies
Deshpandé et al. (2000)	Interviews with 148 Japanese, American and European companies (various)
Matsuno and Mentzer (2000)	Survey of 364 American manufacturing companies
Cervera et al. (2001)	Survey of Spanish local governments (responses from 222 Chief Secretaries and 177 Mayors)
Harris (2001)	Survey of 107 UK retail companies
Harris and Ogbonna (2001)	Survey of 342 UK companies (various)

Table 2.8 MO studies reviewed (continued)

Study	Industry/scope
Gray et al. (2002)	Survey of 329 New Zealand companies (goods and service companies)
Perry and Shao (2002)	Survey of 148 foreign subsidiaries of American-based advertising agencies
Agarwal et al. (2003)	Survey of 201 hotels worldwide
Hooley et al. (2003)	Survey of 346 Hungarian, Polish & Slovakian service companies
Kim (2003)	Survey of 61 Korean subsidiaries entering into North American markets (various)
Pulendran et al. (2003)	Survey of 89 Australian companies (various)
Kaynak and Kara (2004)	Survey of 179 Chinese companies (mainly banking, component and computer hardware manufacturing, consumer product manufacturing)
Kyriakopoulos and Moorman (2004)	Survey of 96 Dutch companies (food processing industry)
Tse et al. (2004)	Survey of 210 Chinese companies (various)
Tuominen et al. (2004)	Survey of 140 Finnish companies (metal, engineering and electrotechnical)
Wu (2004)	Survey of 115 Taiwanese companies (travel industry)
Ellis (2005)	Interviews with 57 Chinese export companies
Gainer and Padanyi (2005)	Survey of 453 Canadian companies (social service, community support or arts organisations)
Green et al. (2005)	Survey of 173 American manufacturing companies
Lai and Cheng (2005)	Survey of 342 companies in Hong Kong (construction, service, manufacturing, and public utility)
Lee and Tsai (2005)	Survey of 100 Taiwanese companies (60 manufacturing, 40 service)
Mason et al. (2005)	Interviews with 20 UK companies (motor industry)
Qu et al. (2005)	Survey of 215 Chinese companies (hotels and travel services)
Sin et al. (2005)	Survey of 63 companies in Hong Kong (hotels)

From the sample of studies provided in table 2.8, it can be seen that most of the early focus was on industrial or consumer industries, which is somewhat ironic considering that MO is concerned with customer needs and is therefore more relevant to service industries. This

has also been observed by Eld (2003). However, more recently, there has been a growing interest in applying MO to public or service sector industries. Most studies use surveys as the research methodology, although some studies use interviews. Multi-industry studies appear to be as common as single industry studies. Most studies tend to be carried out in one particular country.

As of yet, only one study has been conducted on the airport industry and this is the study by Advani (1998), which was preceded by a paper based on the same data by Advani and Borins (2001). The study by Advani (1998) was based on the findings of a survey conducted in 1997 on a worldwide sample of 201 airports. The study provides important context to this study but the findings are somewhat outdated, they predicate the deregulation of European air transport markets and the worldwide scope of the study is not appropriate to this study on airports in EPA's.

Despite the emergence of new or expanded MO constructs (e.g. Deshpandé and Farley, 1998; Matsuno et al., 2005), most studies of MO tend to be based on the Kohli and Jaworski (1990) or Narver and Slater (1990) construct with exact or refined versions of their propositions. Table 2.9 highlights which of the studies identified in table 2.8 use which type of construct.

In his study on airport MO, Advani (1998) used an adapted version of the Kohli and Jaworski (1990) construct and justified the use of the 'behavioural' instead of 'cultural' construct on the basis of the use of competition. Advani (1998) argues that the emphasis on competitor orientation (in Narver and Slater, 1990) as a main element of the MO construct has limited application to the airport industry because the extent to which airports are exposed to competition varies (e.g. airport competition varies for different types of traffic such as origin, destination and transfer). Advani (1998) also argues that competition is limited by ownership and the existence of multi-airport groups, and that the public service orientation of airports means that the focus should be on customers as opposed to competition. As will be discussed in sub-section 2.3.4.2, competitive intensity should be

tested for its effect on the relationship between MO and performance. However, MO should not be based on a measurement of competitor orientation. Therefore, an adaptation of the Kohli and Jaworski (1990) construct is preferred to that of Narver and Slater (1990), Deshpandé et al. (1993) or Deshpandé and Farley (1998).

Table 2.9 MO constructs used in past studies

MO construct	Studies
Kohli and Jaworski (1990); Jaworski and Kohli (1993); Kohli et al. (1993)	Kohli and Jaworski (1990); Jaworski and Kohli (1993); Kohli et al. (1993); Advani (1998); Matsuno and Mentzer (2000); Advani and Borins (2001); Cervera et al. (2001); Harris (2001); Perry and Shao (2002); Kim (2003); Pulendran et al. (2003); Kaynak and Kara (2004); Kyriakopoulos and Moorman (2004); Tuominen et al. (2004); Wu (2004); Lai and Cheng (2005); Lee and Tsai (2005); Qu et al. (2005)
Narver and Slater (1990); Narver and Slater (1991)	Narver and Slater (1990); Narver and Slater (1991); Han et al. (1998); Morgan and Strong (1998); Van Egeren and O'Connor (1998); Harris and Ogbonna (2001); Gray et al. (2002); Agarwal et al. (2003); Hooley et al. (2003); Tse et al. (2004); Ellis (2005); Gainer and Padanyi (2005); Mason et al. (2005); Sin et al. (2005)
Deshpandé et al. (1993); Deshpandé et al. (2000)	Deshpandé et al. (1993); Deshpandé et al. (2000)
Deshpandé and Farley (1998)	Deshpandé and Farley (1998); Green et al. (2005)

From an academic perspective, Harris (2001) justifies the superiority of the Kohli and Jaworski (1990) construct (which he refers to as the Kohli et al., 1993 version of the construct). His main argument is that, despite its merits, the Narver and Slater (1990) construct has been subject to detailed academic criticism (e.g. from Siguaw and Diamantopoulos, 1995; Oczkowski and Farrell, 1998; Matsuno et al., 2005) and has not been widely applied, unlike the Kohli et al. (1993) construct that has been applied in a number of different contexts. Despite his support for the Kohli et al. (1993) construct, Harris (2001) expresses caution in applying the construct directly to different contexts. Although Pitt et al. (1996) claim that the 20 propositions of the Kohli et al. (1993) construct can be used across a variety of companies, cultures and industries, Harris (2001)

recommends that adaptations are needed for different contexts. For example, in his study of the UK retail industry, Harris (2001) changed the terms ‘end users’, ‘product or service needs’, ‘this business unit’, and ‘services and product development efforts’ to ‘customers’, ‘needs’, ‘we/this company/organisation’, and ‘service efforts’. He also replaced any ‘Americanisms’ with terminology that is more appropriate to a UK audience.

Advani (1998) adapted his MO construct to reflect the nature of the airport industry and individual measurements were developed for airline MO and passenger MO, a reflection of the main customers of an airport. This is supported by Graham (2003a) who recognises that although demand for the airport product can come from a variety of markets that each has their own requirements, airport customers can be split into two main groups; trade who pay the airport directly for its use of the facilities (e.g. airlines, tour operators, travel trade, freight forwarders and general aviation) or passengers who merely consume or utilise the airport product. Graham (2003a) recognises a third group of airport customers that she calls ‘others’ and this group consists of tenants and concessionaires, visitors, employees, local residents and local businesses whose needs must also be met. Table 2.10 provides a summary of the three groups of airport customers that are identified by Graham (2003a).

Table 2.10 Airport customers

Trade	Passengers	Others
Airlines	Scheduled (traditional and low-cost)	Tenants and concessionaires
Tour operators	Charter	Visitors
Travel agents	Business	Employees
Freight forwarders	Leisure	Local residents
General aviation	Transfer	Local businesses

Source: Graham (2003a)

Despite the use of different constructs by Advani (1998) to measure airline MO and passenger MO, this study only uses a single measure of MO that is based on airlines. The reason for this is that the context to this study is based on the deregulation of European air transport markets and the recognition that airports in EPA’s must adopt a MO in order to

satisfy airline customers that are now freed from the constraints of regulation. This also implies that this study should focus on passenger airlines (as opposed to freight or general aviation) as this is the type of service that has been most affected by deregulation.

The exclusion of a passenger MO construct can also be justified upon the basis that the nature of air services on offer at an airport are the main basis for passenger choice (Graham, 2003a). In addition, ‘other’ customers such as tenants and concessionaires, visitors, employees, and so on, are also likely to base their decisions upon the range or type of air services on offer. As is stated by Francis et al. (2004): “airports depend on airlines making the decision to operate services from their airport. Without the airlines, airports have no market” (Francis et al., 2004; p508).

The construct proposed and validated by Kohli et al. (1993) is used for this study for a number of reasons. The construct (or earlier versions of it) has been more widely used in previous studies (e.g. see table 2.9) and is considered to be superior to other constructs (Harris, 2001). However, more importantly, the construct has already been used and validated in the previous study on airport MO by Advani (1998) so its use in this study would provide comparative findings. Following advice from Harris (2001), the Kohli et al. (1993) construct was adapted to the needs and context of this study and this is discussed in more detail in sub-section 4.3.1.1.

Providing a measurement of MO does little else than enable studies to draw comparisons between the levels of MO at different companies. What companies really need to know is what factors enhance or impede MO and what the consequences of MO are, thus providing implications for managers. In this context, studies nearly always consider what Kohli and Jaworski (1990) refer to as ‘antecedents to MO’ and ‘consequences of MO’. Sub-section 2.3.3 and 2.3.4 will consider relevant literature on antecedents to and consequences of MO respectively.

2.3.3 Antecedents to MO

Having established a means for measuring MO, Kohli and Jaworski (1990) then looked to increase an understanding of the antecedents to MO, which they define as: “the organisational factors that enhance or impede the implementation of the business philosophy represented by the marketing concept” (Kohli and Jaworski, 1990; p6). Based upon a literature review and insights from field interviews, they revealed three categories of antecedents: individual; inter-group; and, organisation-wide. The three categories became labelled as senior management factors, interdepartmental dynamics and organisational systems. In addition, 19 research propositions, including hypotheses were developed that expanded upon the three categories.

Jaworski and Kohli (1993) refined the three categories and the 19 research propositions and hypotheses that were initially presented in Kohli and Jaworski (1990) and subsequently came up with eight research propositions and hypotheses relating to the eight factors (from the three categories) that they suggest can enhance or impede MO. Propositions such as ‘top managers in this business unit believe that higher financial risks are worth taking for higher rewards’ were then presented on a 5-point or 7-point Likert scale to test hypotheses such as ‘the greater the risk aversion of top managers, the lower the market orientation of the organisation’ (Kohli and Jaworski, 1990; p9).

The eight factors were tested during interviews with 222 companies from various industries in the USA. The eight factors, the direction of their predicted relationship with MO, and the result of the prediction can be seen in table 2.11.

The Jaworski and Kohli (1993) study, as indicated in table 2.11, provides strong evidence to suggest that MO is enhanced in organisations that have greater top management emphasis on MO, interdepartmental connectedness, and use market-based factors for evaluating and rewarding managers. In addition, the Jaworski and Kohli (1993) study

provides strong evidence to suggest that MO is impeded in organisations that have greater interdepartmental conflict and centralised decision-making processes.

Table 2.11 Factors that enhance or impede MO

Factor	Direction	Result
Senior management factors		
1. Top management emphasis	Enhance MO	Accept
2. Risk aversion	Impede MO	Reject
Interdepartmental dynamics		
3. Conflict	Impede MO	Accept
4. Connectedness	Enhance MO	Accept
Organisational systems		
5. Formalisation	Impede MO	Reject
6. Centralisation	Impede MO	Accept
7. Departmentalisation	Impede MO	Reject
8. Reward systems	Enhance MO	Accept

Source: Jaworski and Kohli (1993)

Other studies have identified and tested the same and/or different antecedents. For example, Harris (2001) tested connectedness, formalisation and centralisation whilst Van Egeren and O'Connor (1998) tested connectedness. Qu et al. (2005) tested the same factors as Jaworski and Kohli (1993) but omitted departmentalisation, as they didn't feel it applied to their study on hotels and travel services. In addition, Qu et al. (2005) tested the influence of a strong presence of marketing staff (human resources) and a strong financial support for marketing (financial resources), both of which were expected to have a significantly positive relationship with MO.

Advani (1998) demonstrates how the factors tested should reflect the industry and the needs of the study. His study was concerned with the test of new public management at airports so his focus was very much on organisational systems (e.g. the influence of private ownership, expected privatisation, the use of management contracts, form of payment

collection (i.e. the use of passenger user fees), organisational size, departmentalisation, and reward-based systems). In line with Jaworski and Kohli (1993), he also studied the cultural antecedent of senior management factors (e.g. top management emphasis). Each of the internal factors tested by Advani (1998) was expected to have a significantly positive relationship with MO, except for departmentalisation, which was expected to have a negative relationship.

Table 2.12 provides a summary of the findings from Advani (1998) and a number of other studies that have been cited in this literature review.

Of particular concern is the fact that results vary between different studies and different contexts. In order to consolidate the findings of previous studies, Kirca et al. (2005) conduct a meta-analytic review and assessment of antecedents to MO. The study by Kirca et al. (2005) tests antecedents that have been most commonly used in previous studies including top management emphasis, connectedness, conflict, centralisation, formalisation, and reward-based systems. The findings are presented in table 2.12 and suggest that the only factors that have a significant relationship with MO are top management emphasis, connectedness and reward-based systems, each of which has a positive relationship.

It is worth noting that cultural perspectives of MO (e.g. Narver and Slater, 1990; Deshpandé et al., 1993) tend not to investigate the influence of internal factors as antecedents to MO. Their assumption is that culture is the driver of behaviour and that market-orientated behaviours are not existent in an organisation if the culture lacks a commitment to superior value for customers. This study recognises that assumption and although this study uses the Kohli et al. (1993) version of the Kohli and Jaworski (1990) behavioural construct, it agrees that cultural antecedents such as top management emphasis, risk aversion, conflict and connectedness should be inherent in a market-orientated organisation. However, this study does consider the influence of organisational systems but not by using numerous propositions to investigate internal factors such as formalisation,

centralisation and departmentalisation. Instead, it considers the impact of ownership on airport MO.

Table 2.12 Antecedents to MO

Internal factor (expected relationship with MO)	Jaworski and Kohli (1993)	Advani (1998)	Van Egeren and O'Connor (1998)	Harris (2001)	Kirca et al. (2005)*	Qu et al. (2005) - travel	Qu et al. (2005) - hotel
Top management emphasis (+)	✓	✓	n/a	n/a	✓	✓	x
Risk aversion (-)	x	n/a	n/a	n/a	n/a	x	✓
Conflict (-)	✓	n/a	n/a	n/a	x	x	✓
Connectedness (+)	✓	n/a	✓	✓	✓	x	✓
Formalisation (-)	x	n/a	n/a	✓	x	x	x
Centralisation (-)	✓	n/a	n/a	✓	x	x	x
Departmentalisation (-)	x	x	n/a	n/a	n/a	n/a	n/a
Reward-based systems (+)	✓	✓	n/a	n/a	✓	x	✓
Human resources (+)	n/a	n/a	n/a	n/a	n/a	✓	✓
Financial resources (+)	n/a	n/a	n/a	n/a	n/a	x	x
Private ownership (+)	n/a	✓	n/a	n/a	n/a	x	x
Expected privatisation (+)	n/a	✓	n/a	n/a	n/a	n/a	n/a
Management contract (+)	n/a	x	n/a	n/a	n/a	n/a	n/a
Form of payment (+)	n/a	x	n/a	n/a	n/a	n/a	n/a
Organisational size (+)	n/a	✓	n/a	n/a	n/a	n/a	n/a

Key:

+ = positive relationship expected.

- = negative relationship expected.

✓ = relationship accepted.

x = relationship rejected.

n/a = not tested.

* = findings are from a meta-analytic review of previous studies.

Qu et al. (2005) investigated the difference in levels of MO at state-owned and non-state-owned companies in the tourism industry in China and found no significant difference in the mean levels of MO. However, Advani (1998) investigated the difference in levels of

MO at privately-owned airports, those expecting privatisation and those that are not privately-owned. His study found that privatised airports or airports expecting privatisation had significantly higher levels of MO than airports that are not privately-owned.

The study by Advani (1998) suggests that ownership does affect the MO of an airport. However, the low level of privately-owned airports in EPA's renders his type of trichotomy (i.e. privately-owned airports, those expecting privatisation and those that are not privately-owned) as inappropriate to this study¹⁶. One way in which airport ownership in EPA's can be grouped is by levels of national, regional, and independent ownership (Pagliari, 2005b). The latter grouping includes airports that are privately-owned and locally-owned (i.e. by local authorities or chambers of commerce).

As an example of the different types of airport ownership, Pagliari (2005b) lists the ownership structure of airports by region. According to his analysis, nationally-owned airports are concentrated in:

- Iceland, where 11 airports are operated by the Icelandic Civil Aviation Authority (CAA);
- Norway, where 46 airports are operated by a state-owned company called Avinor;
- Sweden, where 19 airports are operated by a state-owned company called Luftfartsverket (LFV);
- Spain, where 44 airports are operated by a state-owned company called Aeropuertos Españoles y Navegación Aérea (AENA);
- Portugal, where 3 airports are operated by a state-owned company called Aeroportos de Portugal (ANA); and,
- Greece, where 38 airports are operated by the Greek CAA.

¹⁶ The collection of data on airport ownership is referred to in sub-section 4.2.2 and data is provided in Appendix D. Of the independently-owned airports listed in Appendix D, only five airports are fully owned by private interests (Aberdeen Airport, Belfast International Airport, Belfast City Airport, Linköping Airport and Malta International Airport).

Finland should also be included in the above list, where 25 airports are operated by a state-owned company called Finavia.

Regionally-owned airports are concentrated in the Highlands and Islands of Scotland where the region's 10 airports are operated by a state-owned company called Highlands and Islands Airports Limited (HIAL). Locally-owned airports are common in Sweden, where 27 airports are owned by local authorities. Privately-owned airports are common in Northern Ireland with Belfast International Airport (which is owned by TBI¹⁷) and Belfast City Airport (which is owned by Ferrovial¹⁸).

From the trichotomy of national, regional and independent ownership, general assumptions can be made. For instance, airports that are independently-owned may have more decentralised and faster decision-making processes than those that are regionally-owned or nationally-owned. In addition, the objectives for managers of independently-owned airports are likely to be extremely focused (i.e. on the needs of their local community or the maximisation of profit) and the performance of managers of such airports is likely to be highly scrutinised (i.e. by local stakeholders or shareholders). For regionally-owned and to a larger extent nationally-owned airports, objectives for managers are likely to be vaguely defined and susceptible to changes in political agendas, and the relative strengths of different interest groups are likely to change as political agendas change. Although these assumptions do not directly address issues relating to MO (i.e. the generation, dissemination and response to market intelligence), they do suggest that independently-owned airports are likely to be more orientated towards the needs and expectations of airline customers (i.e. more market-orientated) than regionally-owned or nationally-owned airports whose MO is likely to be negatively affected by vaguely defined objectives and political agendas.

¹⁷ TBI is a UK-based airport operator that operates eight international airports (London Luton Airport, Cardiff International Airport, Belfast International Airport, Stockholm Skavsta Airport, Orlando Sanford Airport, La Paz Airport, Santa Cruz Airport and Cochabamba Airport) as owner or under concession agreements. TBI is currently managed by Abertis, a Spanish transport and communications infrastructure management company.

¹⁸ The Ferrovial Group is a Spanish company that is involved in construction, infrastructure, real estate and related services.

Pagliari (2005b) alludes to the assumption that independently-owned airports are likely to be more market-orientated than regionally-owned and nationally-owned airports (although the reference is not made directly to MO). In his analysis, Pagliari (2005b) suggests that independently-owned airports have a greater focus on developing traffic that benefits the local area, are more proactive in the marketing and promotion of the airport, and benefit from locally-based decision makers that can liaise easily with other local stakeholders and deal with prospective airlines. Each of these factors are likely to be inherent in an airport that is market-orientated because they are concerned with having a good local knowledge (i.e. generating market intelligence), sharing that knowledge with other stakeholders (i.e. disseminating market intelligence) and responding to that knowledge by implementing proactive marketing campaigns and dealing directly with prospective airlines (i.e. responding to market intelligence).

Anecdotal evidence of the effect of airport ownership on the relationship between airports and their airlines is provided by industry commentators. For instance, Leask (2002) advocates the benefits of independent airport ownership and provides the example of Prestwick Airport¹⁹, which after being privatised in 1992, experienced greater competition and subsequent growth and development. However, it is not necessarily the nature of ownership that encourages competition and enhances performance. Instead, the nature of ownership is likely to create a more market-orientated approach to airport management, which subsequently encourages competition and enhances performance.

The impact of ownership on airport performance has been investigated by previous studies (e.g. Humphreys, 1999; Francis et al., 2000; Humphreys and Francis, 2002; Carney and Mew, 2003; Lyon and Francis, 2006; Oum et al., 2006). However, the focus of these studies is normally on state versus non-state ownership (as opposed to comparing national, regional and independent ownership). In particular, Oum et al. (2006) compared the productive efficiency and profitability of airports that are majority owned by a government

¹⁹ Prestwick Airport is now known as Glasgow Prestwick International Airport.

or government authority and airports that are majority owned by private interests. Their findings suggest that the latter is more efficient and profitable than the former and that the former should be avoided.

Considering ownership (as opposed to individual antecedents such as senior management factors, interdepartmental dynamics and organisational systems) is justified by the fact that airports in EPA's tend to be very small and will normally have very flat organisational structures (that may not even distinguish between management and senior management) meaning that senior management factors may not apply. Airports in EPA's may also have limited organisational systems and have very few departments, meaning that interdepartmental dynamics are not appropriate. It is felt that these factors can be more appropriately tested within the context of how the airport is owned.

This subjective (as opposed to objective) measure of antecedents to MO is also justified upon the basis of the focus of this study, and of other studies before it. For instance, despite the widespread use of the Kohli and Jaworski (1990) construct (or refined versions of it), very few studies investigate the role of antecedents. Instead, the main focus of MO studies from both schools of thought (behavioural and cultural) tends to be on the effect that MO has on company performance (otherwise known as a consequence of MO). The effect that MO has on performance is the main focus of this study and relevant literature on the consequences of MO will now be reviewed.

2.3.4 Consequences of MO

MO is said to have a number of consequences on performance. However, before reviewing literature on the relationship between MO and performance, it is important to have an understanding of performance. For instance, it is important to know how performance has been measured in previous studies on MO and how performance can be measured within the context of the airport industry.

2.3.4.1 Measuring performance

Performance in a MO context is broadly viewed from two perspectives; subjective (i.e. relative to competitors) or objective (i.e. absolute measures) (Sin et al., 2005). Objective measures tend to be less widely used and this is probably due to reasons of confidentiality and the fact that some companies do not like to release performance figures or may not even understand the performance figures that are being requested (i.e. because of cultural differences). It may also be as a result of the fact that some managers may not be aware of the absolute measures relating to their company. This may be the case at airports that are part of a national airport system.

Early works on the consequences of MO on performance (e.g. Jaworski and Kohli, 1993) hypothesised and tested three main groups of performance: consumers' response (e.g. satisfaction and loyalty); employees' response (e.g. *esprit de corps*²⁰, employment satisfaction and organisation commitment); and, economic performance. The study by Jaworski and Kohli (1993) concluded that MO positively influences employees' level of commitment and *esprit de corps*.

Performance indicators have since become more diverse and widespread but can generally be classified by three main groups of measure: economic; operational; or, marketing. A number of examples from MO studies are provided in table 2.13.

²⁰ *Esprit de corps* can be defined as staff morale.

Table 2.13 Performance measures used in MO studies

MO study	Measure	Indicators
Gray et al. (2002)	Economic	Domestic market share Profitability Total sales income Domestic sales growth
Matsuno et al. (2005)	Economic	Market share growth Sales growth Percent of new product sales Return on sales Return on assets Return on investment
González-Benito and González-Benito (2005)	Operational	Pace of new product launching and range of products in catalogue Time needed for designing and/or manufacturing products Flexibility to adapt production to different volumes of demand Product quality (degree of conformity to specifications) Capacity to meet customers' requirements in time Operational costs (supply, production, distribution)
Gray et al. (2002)	Marketing	Customer satisfaction Loyalty and brand awareness Customer retention
González-Benito and González-Benito (2005)	Marketing	Company reputation and image Alignment between company's offer and market expectations Success of new product launches
Sin et al. (2005)	Marketing	Customer trust Customer satisfaction

Walker and Ruekert (1987) offer a different perspective based on three dimensions that can be measured in relation to a company's main competitor. The three dimensions are:

1. Effectiveness: success of procedures (e.g. changes of sales growth rate and market).
2. Efficiency: ratio of input to output (e.g. investment return and pre-tax profit).

3. Adaptability: responsiveness to opportunities afforded by changes in the business environment (e.g. number of new products that succeed during a particular time).

Although grouped as three different dimensions, they are still underpinned by the same standard indicators of performance such as those presented in table 2.13. This is because the first two dimensions are effectively economic performance measures and the third dimension is effectively a marketing performance measure.

A number of studies apply a more simple subjective measure of overall performance, often in addition to objective measures of overall performance. For example, in addition to asking managers to score their company performance in objective terms, Jaworski and Kohli (1993) asked managers to score their company performance in terms of two subjective measures. The subjective measures are:

1. Overall performance of the business unit last year.
2. Overall performance relative to major competitors last year.

The first measure is a concrete measure of performance whilst the second measure is relative to competitors. Measures of subjective performance are usually scored using a survey and by asking respondents to score statements such as those above on a 5-point Likert scale ranging from 'poor' to 'excellent' or from 'much better' to 'much worse'.

For this study, measures of adaptability, as recommended by Walker and Ruekert (1987) are especially relevant as the focus of this study is on how airports have been able to respond to opportunities (or threats) afforded by changes in the business environment (e.g. deregulation). In particular, this study is concerned with how MO enables airports to improve their provision of air services, which according to Ewald (2002) incorporates attracting new routes and growing and retaining existing routes. In terms of the main groups of performance measures in table 2.13, the attraction of new routes and the growth

and retention of existing routes can be grouped as being functions of marketing performance.

Although economic performance measures appear to be the most widely used measure of performance in previous MO studies, it can be argued that economic performance is not necessarily a consequence of MO but is a consequence of a consequence. For instance, Agarwal et al. state that: “the main goal of market-orientated companies should be the creation and retention of satisfied customers” (Agarwal et al., 2003; p69). This has also been emphasised in a number of other studies (e.g. Hooley et al., 1990; Day, 1994; Day and Wensley, 1998). The creation and retention of satisfied customers can then result in an improvement in the economic performance of a company.

The objective of MO should also be to improve the company’s effectiveness in the marketplace (Walker and Ruekert, 1987), which at airports can be measured according to their growth in market share. An element of effectiveness is tested in this study in terms of measuring the relative growth of existing routes at airports, and this is discussed in more detail in sub-section 4.3.1.3. This is an appropriate measure of performance at airports because airports are in a position to encourage their airline customers to add more frequency or seat capacity to existing routes, thus encouraging increases in passenger throughput.

The final dimension recommended by Walker and Ruekert (1987) is that of efficiency (e.g. the ratio of input to output) and whilst this is recognised as being an important measure of performance, it is not used in this study. The reason for omitting this particular measure of performance is that airport managers may be very distant from the financial aspects of the business and are not likely to have such data to hand (as will be discussed in sub-section 4.3.3, the research strategy for this study is implemented using a survey of airport managers). In addition, the cross-cultural and international nature of this study means that different ratios may be calculated and interpreted in different ways. Finally, most of the airports in this study are likely to be loss-making and heavily subsidised by their local,

regional or national government and this adds further complications to the measurement of efficiency.

Previous studies (e.g. Narver and Slater, 1990; Ruekert, 1992; Jaworski and Kohli, 1993; Slater and Narver, 1994; Greenley, 1995b; Slater and Narver, 1996; Gray et al., 2002; Agarwal et al., 2003) have used objective measures of performance, and often in addition to subjective measures. This study has a very specific focus and is only concerned with how MO affects the performance of airports in terms of the attraction of new routes and growth and retention of existing routes. Therefore, this study will use subjective measures (i.e. relative to competitors) that are in line with the measures of adaptability and effectiveness that have been recommended by Walker and Ruekert (1987). Subjective measures are not used for reasons given earlier in this sub-section. Besides, correlations between objective and subjective measurements tend to be high (Balakrishnan, 1996) and generalisations can therefore be made.

Having considered measures of performance, it is necessary to consider the relationship between MO and performance as that is the main focus of this study.

2.3.4.2 Relationship between MO and performance

When investigating the relationship between MO and performance, studies tend to investigate one or a number of the following effects (Langerak, 2003):

- direct effect (i.e. 'if' MO has a positive effect on performance);
- moderating effect (i.e. 'when' MO has a positive effect on performance); or,
- mediating effect (i.e. 'how' MO influences performance).

Direct effect

Most studies that have investigated the direct effect that MO has on performance have returned a positive outcome. The relationship is based on the assumption that: “MO provides a company with better understanding of its environment and customers, which ultimately leads to enhanced customer satisfaction” (Kaynac and Kara, 2004; p747). Table 2.14 shows a number of studies that have found that a positive relationship exists between MO and a range of performance measures.

Table 2.14 Studies finding a positive relationship between MO and performance

Performance measure	Study
Overall company performance	Jaworski and Kohli (1993); Pitt et al. (1996); Oczkowski and Farrell (1998); Van Egeren and O’Connor (1998); Baker and Sinkula (1999a); Hooley et al. (2003); Sin et al. (2005)
Economic performance	Narver and Slater (1990); Ruekert (1992); Slater and Narver (1994); Pelham and Wilson (1996); Slater and Narver (1996); Baker and Sinkula (1999a); Pelham (1999); Gray et al. (2000); Homburg and Pflessner (2000); Harris and Ogbonna (2001); Matsuno et al. (2002); Hooley et al. (2003); Kim (2003); Green et al. (2005); Sin et al. (2005)
Marketing performance	Slater and Narver (1994); Atuahene-Gima (1995); Atuahene-Gima (1996); Pelham and Wilson (1996); Baker and Sinkula (1999a); Pelham (1999); Gray et al. (2000); Hooley et al. (2003); Green et al. (2005); Sin et al. (2005)

Marketing literature suggests that environmental factors (i.e. market turbulence, competitive intensity and technological turbulence) and market-level factors (i.e. demand and supply) may affect company performance (e.g. Kotler et al., 1996; Dibb et al., 2001; Brassington and Pettitt, 2005; Kotler, 2005) and previous studies on MO (e.g. Narver and Slater, 1990) suggest that they must be controlled when analysing the effect of MO on company performance.

Narver and Slater (1990) conducted a study on 140 strategic business units of a major Western corporation that included commodity businesses (i.e. sellers of physical products) and non-commodity businesses (i.e. service providers). In their study, Narver and Slater (1990) investigated the effect of MO on performance controlling for market growth, different aspects of competitive intensity (which they call concentration, entry barriers, buyer power and seller power), and technological turbulence. They also investigated the effect of business-specific factors such as the relative size and cost of the company in relation to its largest competitor. The factors (and their expected effect on company performance), a brief description of each factor, and rationale for the relationship between each factor and company performance is provided in table 2.15.

When testing for the effect of MO on performance whilst controlling for the factors in table 2.15, Narver and Slater (1990) found (for their combined sample of commodity and non-commodity businesses) that MO has a significant and positive effect on performance whilst technological turbulence and market growth have a significant and negative effect on performance. The negative effect on performance was expected for technological turbulence (because of the need for companies to continually invest in new technologies). However, it was not expected for market growth (because one would expect companies to perform well in growing markets). The rationale provided for the negative effect of market growth is that some companies may not be prepared or able to respond if market growth is short-term or unexpected and in the case of commodity businesses, companies may be slow to adjust their production processes and may therefore, miss out on any short-term or unexpected market growth. Relative size and cost were also found to have a significant effect on performance, with positive and negative relationships respectively.

Table 2.15 Factors tested for their effect on company performance

Factor (expected effect)	Description	Rationale
Growth (+)	Average annual growth rate of total sales over the past three years	When demand is growing, it is easier to earn profits
Concentration (+)	Percentage of total sales accounted for by the four competitors with the largest sales	High concentration may encourage tacit or explicit joint-maximising monopoly behaviour
Entry barriers (-)	Likelihood of new competitors entering the market and making satisfactory profits within three years	The easier to enter, the greater the competitive pressure from current and potential competitors
Buyer power (-)	Extent to which customers are able to negotiate lower prices	Buyer power leads to the extrapolation of profits from the seller
Seller power (+)	Extent to which the company is able to negotiate lower prices from suppliers	Seller power leads to the extrapolation of profits from the buyer
Technological turbulence (-)	Extent to which product/service technology has changed in the last three years	Investment in research and development and the implementation of new technologies is costly
Relative size (+)	Sales revenue compared to the largest competitor	Advantages gained from relative size (e.g. economies of scale)
Relative cost (-)	Average total operating costs compared to the largest competitor	Disadvantages experienced from relatively high costs

Key:

+ = the greater the factor, the better the performance.

- = the greater the factor, the worse the performance.

As will be demonstrated in sub-section 5.4.2, this study investigates the direct effect of MO on performance, whilst controlling for environmental factors and market-level factors but not business-specific factors because of the complexities involved in collecting accurate and reflective data on airport revenue and operating costs. This is made especially difficult by the fact that most airports in EPA's are owned by the government (at a national, regional or local level) and that the accounting procedures may differ between countries and may not separate airport-specific activities out from other public services.

Environmental factors investigated by this study include market turbulence and competitive intensity whilst market-level factors include market growth (i.e. demand) and airport constraints (i.e. supply). The effect of technological turbulence is not investigated because the rate of technological turbulence at airports in EPA's is typically slow and their response to change is likely to be constrained by financial limitations. In addition, technological turbulence is more commonly associated with product-intensive industries where manufacturing processes are vulnerable to rapid and high impact changes in technology. Airports primarily offer a service to their airline customers so the impact of changes in technology is less significant.

As was mentioned in sub-section 2.2.5, market turbulence (e.g. Reynolds-Feighan, 1995) and competitive intensity (e.g. Baumol, 1982) are the main consequences of deregulation for airports so investigating the effect of these two factors on airport marketing performance is appropriate. As literature has suggested (e.g. Dempsey, 1990; Reynolds-Feighan, 1995; Lundvall, 2005; Pagliari, 2005a), both of these factors would be expected to have a negative effect on the marketing performance of airports in EPA's because the pressures of increased turbulence and competition in a market that was previously regulated is likely to have a negative impact on an airports ability to attract new routes and grow and retain existing routes.

Whilst deregulation has encouraged market turbulence and competitive intensity, it has also created market opportunities and examples of this have been provided in sub-section 2.2.5 (e.g. SQW, 2002; Kealey, 2004; Lapin Liitto, 2004; Lundvall, 2005). Therefore, in line with initial propositions by Narver and Slater (1990), the effect of market growth on airport marketing performance is expected to be positive as airports are expected to perform better when market growth and potential is high. However, as a consequence of their peripheral location, airports in EPA's may have supply constraints such as limited infrastructure (e.g. inadequate runway, lighting or terminal capacity) or harsh operating conditions (e.g. operating limits, obstacles or frequent adverse weather). Airports that suffer from such

constraints may not be in a position to benefit from market growth because their marketing performance is likely to be impeded by constraints in infrastructure or operating conditions.

Having considered if MO has an effect on performance and the need to control for other factors, it is important to consider when MO has an effect on performance. This involves investigating the moderating effect of MO on performance.

Moderating effect

Kohli and Jaworski (1990) investigated both direct and moderating effects of MO on performance. They proposed that: “the greater the market orientation of an organisation, the higher its business performance” (Kohli and Jaworski, 1990; p13), which suggests that MO has a direct and positive effect on performance. They also proposed that a number of factors are able to moderate the relationship between MO and performance. They identified three environmental factors (market turbulence, technological turbulence and competitive intensity) and two market-level factors (supply and demand), each of which has moderating capabilities on the relationship between MO and performance.

In their study, Kohli and Jaworski (1990) proposed that a stronger relationship exists between MO and performance when market turbulence and competition is greater and when the general economy is weaker. They also proposed that a weaker relationship exists between MO and performance when technological turbulence is greater. When they tested the relationship between MO and performance and the moderating role of the three environmental factors (in Jaworski and Kohli, 1993); they found that whilst MO has a strong positive relationship with performance, none of the three environmental factors play a moderating role. They concluded that: “the market orientation of a business is an important determinant of its performance, regardless of the market turbulence, competitive intensity, or the technological turbulence of the environment in which it operates” (Jaworski and Kohli, 1993; p64). This assumption has since been supported by Gray et al. (1999).

The non-significant moderating effect of competitive intensity and technological turbulence has also been found in other studies. For instance some studies (e.g. Slater and Narver, 1994; Perry and Shao, 2002; Cadogan et al., 2003) found that competitive intensity has a non-significant moderating effect and other studies (e.g. Greenley, 1995a; Harris, 2001; Cadogan et al., 2003; Kim, 2003) found that technological turbulence has a non-significant moderating effect.

Despite the number of studies returning non-significant effects, some studies have found that environmental moderators do have a significant effect on the relationship between MO and performance and the majority of these studies are supportive of the expected relationship. A summary of these studies (and the studies that have returned unexpected or non-significant findings) is provided in table 2.16. The table shows the factors tested for their moderating effect (and the expected effect) and the findings of each study (i.e. whether they support the expected effect, provide opposite findings or find the effect to be non-significant).

The main moderators investigated by this study are market turbulence and competitive intensity as these are the main consequences of deregulation for airports (as was discussed in sub-section 2.2.5) and in recent discussions about controlling factors on the relationship between MO and performance. In line with the findings of previous studies (e.g. Diamantopoulos and Hart, 1993; Kumar et al., 1998; Harris, 2001; Kim, 2003) both factors are expected to strengthen the relationship between MO and performance. This is because the relationship between MO and performance is likely to be stronger at airports that operate in markets that are highly turbulent (i.e. where airline decisions are volatile or unpredictable) and at airports where competition is intense (i.e. where airports will lose out to competitors if they fail to satisfy the needs and preferences of their airline customers).

Technological turbulence is cited in Slater and Narver (1994) as having a moderating effect on performance and although airports are influenced by changes in technology such as developments in radar and lighting systems, it is felt that this effect is not likely to

moderate the relationship between MO and performance (rationale for omitting this factor was provided previously in this sub-section, when controlling factors on the relationship between MO and performance were considered).

Table 2.16 Moderators of the MO-performance relationship

Moderating factor (expected effect)	Supportive	Opposite	Not significant
Market turbulence (+)	Diamantopoulos and Hart (1993); Kumar et al. (1998); Harris (2001); Kim (2003)	Slater and Narver (1994); Greenley (1995a)	Jaworski and Kohli (1993); Gray et al. (1999)
Competitive intensity (+)	Diamantopoulos and Hart (1993); Kumar et al. (1998); Harris (2001); Kim (2003)		Jaworski and Kohli (1993); Slater and Narver (1994); Gray et al. (1999); Perry and Shao (2002); Cadogan et al. (2003)
Technological turbulence (-)	Slater and Narver (1994)		Jaworski and Kohli (1993); Greenley (1995a); Gray et al. (1999); Harris (2001); Cadogan et al. (2003); Kim (2003)

Key:

+ = the greater the factor, the stronger the relationship between MO and performance.

- = the greater the factor, the weaker the relationship between MO and performance.

Although not listed in table 2.16, Kim (2003) tested the moderating effect of market growth (i.e. demand) and this is also investigated by this study. The relationship between MO and performance is likely to be stronger at airports where there is a growing market for demand. However, the relationship between MO and performance is likely to be weaker at airports that are limited by capacity and/or operational constraints so the moderating effect of airport constraints (i.e. supply) is also investigated. Matsuno et al. (2005) suggest that

demand and supply factors should be taken into account when considering the factors that moderate the relationship between MO and performance. However, such factors are rarely considered by studies on MO.

The ability for strategy type to moderate the relationship between MO and performance has been recognised in previous studies (e.g. Pelham, 1997a; Matsuno and Mentzer, 2000; Kim, 2003; Wu, 2004; Matsuno et al., 2005) and this study investigates the moderating effect of an airport's strategic focus in terms of whether it is focused on developing public services (as opposed to commercial services) and leisure services (as opposed to traditional or regional services).

The relationship between MO and performance is likely to be weaker at airports that are seeking to develop public services because routes at such airports are likely to be heavily subsidised and determined by public service considerations (as opposed to commercial considerations). Under these circumstances, there is little incentive for the airport to be market-orientated and it is likely that airports with low levels of MO can still perform well.

The relationship between MO and performance is likely to be stronger at airports that are seeking to develop leisure services. Leisure services (i.e. those that are provided by charter or low-cost carriers) are highly elastic as they usually serve point-to-point routes and can easily transfer to different routes if they do not prove to be commercially viable. This is as opposed to traditional or regional services that tend to operate hub and spoke networks and may therefore be more inclined to serve routes that are less commercially viable or are supported by subsidies in order to improve their network coverage.

Just as was found with the antecedents of MO, different studies and contexts appear to produce different findings in terms of whether or not factors moderate the relationship between MO and performance. Kaynac and Kara (2004) provide rationale for this and suggest that: "the relationship between company performance and market orientation may depend upon industry characteristics, customer characteristics, or the type of measure used"

(Kaynac and Kara, 2004; p747). However, academics have also looked to other areas of investigation in order to gain more insight into the relationship between MO and performance. This has resulted in a number of studies that test mediating effects (as opposed to moderating effects) such as product quality (e.g. Chang and Chen, 1998), market position (e.g. Matear et al., 2004), customer relationship indicators (e.g. Siguaw et al., 1998), company effectiveness (i.e. the effectiveness of the marketing strategy) (e.g. Pelham, 1997b), and innovation (e.g. Slater and Narver, 1994; Han et al., 1998; Baker and Sinkula, 1999b; Salavou, 2002; Agarwal et al., 2003; Maydeu-Olivares and Lado, 2003).

Mediating effect

Although an understanding of the effect of moderators such as market turbulence and competitive intensity encourages better understanding of how certain factors affect the relationship between MO and performance, they do not explain why MO affects performance and therefore fail to identify the managerial mechanisms through which a company may be able to transform MO into superior performance. This is where mediating effects become important because they have the potential to provide managers with a better understanding of the management practices that can influence performance. This has superior implications to the moderating effects that are essentially external factors that managers have little control over.

Past studies have investigated the mediating effect of different factors on the relationship between MO and performance. Of the different factors that have been investigated, product quality (e.g. Chang and Chen, 1998) and market position (e.g. Matear et al., 2004) were not found to mediate the relationship between MO and performance whilst customer relationship indicators (e.g. Siguaw et al., 1998), company effectiveness (e.g. Pelham, 1997b), and innovation (e.g. Han et al., 1998; Baker and Sinkula, 1999b; Salavou, 2002; Agarwal et al., 2003; Maydeu-Olivares and Lado, 2003) were found to have a positive mediating effect. The role of innovation has received particular interest in recent years and

is increasingly recognised for its mediating effect on the relationship between MO and performance.

One of the earliest studies to recognise the importance of innovation was produced by Slater and Narver (1994). Their study proposed that innovation could be one of the core value-creating capabilities that mediate the relationship between MO and performance. In this instance, the assumption is that companies with a superior MO will have superior market sensing and customer-linking capabilities and should, therefore, be in a position to better understand the needs of their target markets and provide superior value through innovation (Slater and Narver, 1994).

The proposition by Slater and Narver (1994) was purely conceptual and it wasn't until Han et al. (1998) that an empirical study was conducted on the mediating effect of innovation on the relationship between MO and performance.

Recognising that innovation is traditionally applied in a production context (i.e. to the development of new product breakthroughs), Han et al. (1998) tested the role of what they termed as being technical innovations. However, they were keen to point out that MO also involves administrative breakthroughs and therefore made a distinction between technical and administrative innovations. Field interviews in 10 different banks enabled Han et al. (1998) to develop a list of technical and administrative innovations that had been implemented by the banks or their competitors in the last five years, or had the potential to be implemented in the next several years. The full list of technical and administrative innovations can be found in Han et al. (1998).

Han et al. (1998) then tested the mediating effect of technical and administrative innovations on the relationship between MO and the economic performance (measured by growth and profitability) of 134 banks in a midwestern state of the USA. Their findings support the proposition that innovations mediate the relationship between MO and economic performance and support the separate contributions of technical and

administrative innovations. They also suggest that innovative practices provide the most effective mechanism through which companies can deal with turbulence in external environments.

Subsequent studies have tested the mediating effect of innovation on the relationship between MO and performance and have generally produced positive results. For example, Agarwal et al. (2003) conducted a study on 201 international hotels and conclude that: “the immediate impact of market orientation is to spur innovation, which, in turn, enhances judgemental performance, which, in turn, enhances objective performance” (Agarwal et al., 2003; p1). In addition, Maydeu-Olivares and Lado (2003) conducted a study on 122 insurance companies in the EU using innovation degree, innovation performance and customer loyalty as mediating variables. They conclude that: “the effects of market orientation on economic performance are completely channelled (mediated) through these variables, particularly through innovation degree and innovation performance” (Maydeu-Olivares and Lado, 2003; p1).

Service companies need to continually innovate in order to stay ahead of competitors (Gray et al., 2002; Agarwal et al., 2003) and Agarwal et al. (2003) believe that innovation is particularly important to service companies, as their products are difficult to protect through patents and copyrights. According to Slater and Narver (1995), service companies can innovate by developing new services or reformulating existing ones, creating new distribution channels, and/or discovering new approaches for management or competitive strategy. Such innovations are important for airports that are aiming to attract new routes and grow and retain existing routes because they can use them to gain a competitive advantage over other airports or modes of transport. Despite this, the mediating effect of innovation on the relationship between MO and the performance of airports has never been investigated. This is despite the emergence of some good anecdotal evidence (e.g. Crump, 2004; Carrara, 2005).

The choice and impact of airport innovation will always depend upon the type of market being targeted and the marketing strategy of the airport. For example, larger airports with limited spare capacity may focus primarily upon developing innovations that will help portray a positive image or build a corporate identity, whilst small airports with limited services may focus on developing innovations that target specific opportunities to attract air services (Graham, 2003a). The situation at most airports in EPA's will be the latter.

Perhaps the easiest way to understand how airports can innovate is to consider how they are able to exploit market trends and developments and the needs of airlines through their marketing mix (i.e. marketing innovations). This is an appropriate choice of innovation type considering the measurement of performance for this study is marketing-based.

2.3.5 Airport marketing innovations

The marketing mix varies between products and services and whilst airports consist of both product and service elements, they are best explained by what is known as the services marketing mix²¹. The services marketing mix identifies the characteristics of a service. It includes the traditional four P's of the product marketing mix (product, promotion, price and place) but also includes an additional three P's that are applied to services (processes, physical evidence and people). The seven P's are:

1. Product: designing and branding the product/service.
2. Promotion: communicating with target markets.
3. Price: pricing to reflect needs or wants.
4. Place: reaching and servicing the customer.
5. Processes: processing from order to delivery.
6. Physical evidence: providing tangible cues to support the main service.
7. People: participants of the production and delivery of the service.

²¹ More information about the services marketing mix can be found in key marketing literature (e.g. see Dibb et al., 2001; Brassington and Pettitt, 2005).

Marketing innovations that have taken place at airports in the past or could take place at airports in the future will now be considered within the context of the four P's (i.e. product, promotion, price and place). The additional three P's (processes, physical evidence and people) will be considered within the context of the four P's.

2.3.5.1 Product

According to Graham (2003a), the airport product consists of a supply of both tangible and intangible services that can be positioned to meet the needs of different market segments. She divides the airport product into three main elements that are based on traditional marketing theory. These are:

1. The core product, which is the benefit sought (i.e. the ability to land and take off).
2. The actual or physical product, which delivers the benefit sought (i.e. tangible infrastructure such as terminal and runway capacity or intangible services such as ground handling and security). The airport brand also forms part of the actual or physical product.
3. The augmented product, which provides additional benefits to the core and actual or physical product (e.g. service level agreements).

Jarach (2001) divides the airport product into four levels of value proposition that share commonalities with the division offered by Graham (2003a). His division consists of the core benefit (i.e. the core product), the generic and the expected product (i.e. the actual or physical product), and the wider product (i.e. the augmented product). According to Kotler et al. (1996), much of the competition for services will typically take place at the augmented level and although airports are able to innovate at all levels of the airport product, it is likely that the innovations that have the greatest impact on performance take place at the augmented level.

Brassington and Pettitt (2005) provide four divisions consisting of the three traditional elements (core, actual or physical, and augmented) and an additional division that they call ‘the potential product’. This proposition enables the marketer to not only think about how to refine the existing product/service but also to think about how the product/service could and should be in the future. This fits in with common definitions of innovation. For example, innovation is defined as: “to introduce a new process or way of doing things” (Oxford Dictionary, 1984; p320). Innovation is also defined as: “a mindset, a pervasive attitude, or a way of thinking focused beyond the present into the future” (Kuczmarski, 2003; p1). These two definitions recognise the role of the present but also the future.

Halpern (2005; 2007) shows how airports can innovate with their product/service offering in order to attract leisure carriers. His studies suggest that in addition to providing core and actual or physical product elements such as an adequate runway, airports can innovate at their augmented level. In particular, he shows how airports can meet the needs of leisure carriers by facilitating:

- cost savings by providing simple terminals and minimal services;
- speed by providing fast aircraft turnarounds and an efficient positioning of aircraft;
- flexibility by providing multi-functional and flexible staffing; and,
- access by providing longer opening hours and surface transport to the destination.

Lang (1999) provides an example of how Glasgow Prestwick International Airport was able to facilitate cost reduction and attract low-cost and charter carriers. The airport developed a multi-skilled workforce that was able to provide all airport services and a quick turnaround of aircraft. The focus of the airport was to reduce costs and to pass these savings onto their airlines and tour operators. In the first year of implementing such initiatives, Airtours (a leading tour operator) added seven new routes from the airport and the airports total number of annual passengers increased by over 30%.

Associated with the airport product is the idea of the airport brand that can be represented by a name, logo or design, or by a particular style of signing, merchandising, or advertising (Graham, 2003a). Branding creates distinctiveness and adds tangible cues to what is essentially an intangible service. Branding can attract new airlines or tour operators and can promote recognition, preference and loyalty amongst target markets. Whether branding provides airports with a competitive advantage or not is subject to debate (Graham, 2003a). However, it has been widely used by airports and especially by those seeking to attract charter markets. In this instance, the brand that is developed may be based upon natural or man-made attractions or aspects of historical importance. A few examples are listed below.

- Brands based upon natural attractions include: Lakselv Banak Airport, which is known as North Cape Airport (e.g. see Langedahl, 1999); Gällivare Airport, which is known as Lapland Airport (e.g. see Gellivare, 2005); and, Enontekiö Airport, which uses the logo 'The Airport in the Mountains' (e.g. see Ilmailulaitos, 2005a).
- Brands based upon man-made attractions include: Rovaniemi Airport, which is known as Santa Claus Airport (e.g. see Crump, 2004); Hemavan Airport, which uses the logo 'Fly into Adventure' (e.g. see Hemavans Flygplats, 2005a); and, Kemi-Torino Airport, which uses the logo 'For Golf in the Midnight Sun' (e.g. see Ilmailulaitos, 2005b).
- Brands based upon aspects of historical importance include: Keflavik International Airport terminal, which was inaugurated in 1987 under the name of Leifur Eiriksson Air Terminal (e.g. see Keflavik International Airport, 2005) after the Norwegian navigator who, according to Norse sagas, was the first to discover North America.

Airports have also been branded in a way that demonstrates their size or scope of available services. For example, Prestwick Airport is now called Glasgow Prestwick International Airport. This demonstrates that the airport serves international as well as domestic routes.

2.3.5.2 Promotion

According to Graham (2003a), the most basic form of marketing that airports do is advertising and attending exhibitions to create awareness amongst target groups. This is an area of activity that provides airports with the opportunity to innovate by developing and communicating certain messages to target markets. However, such activities may only communicate general messages to a general audience and can be very costly. For example, it costs an airport 10,000 Euros to place a one-page colour advertisement in the publication *Airline Business* (Airline Business, 2005)²².

Increasingly, airports adopt a more direct and aggressive means of communicating with target markets (e.g. by targeting airlines or tour operators directly). This enables airports to communicate specific messages such as route opportunities to specific airlines or tour operators. One recent development that has supported this type of direct selling is the World Route Development Forum, otherwise known as 'Routes'²³. In this instance, airports typically develop specific market research on new route potential and deliver it through an airline presentation.

The nature of the catchment area or potential demand is of paramount importance to airlines or tour operators (Graham, 2003a) and such factors are key determinants of airport choice. In particular, airlines will want to know the tourist appeal of the catchment area for inbound passengers and the characteristics and purchasing power of residents in the local catchment area for outbound passengers (Favotto, 1998). This is supported by Graham (2003a) who states that: "no amount of money spent on improving facilities will attract airlines to the airport unless they consider that there is a market for their services" (Graham, 2003a; p187).

²² Readers should note that the cost of advertising in *Airline Business* changes over time and that the price quoted was correct at the time of this study.

²³ Routes is a type of speed dating for airports and airlines as it provides networking opportunities through one-to-one meetings. Routes has been held in different locations worldwide on an annual basis since 1995. More information on Routes can be found at www.routesonline.com.

Gathering, disseminating and responding to market intelligence is a function of MO. However, MO does not explain how airports can use such intelligence to develop innovative changes or refinements in their services marketing mix. Carrara (2005) provides an insight into Aberdeen Airport. The insight details how airport management gathers market intelligence on the catchment area and on potential demand in order to promote new services to existing or potential airlines. The insight also details a number of initiatives (based on market intelligence) that are being used by airport management. These include:

- an application to provide 24-hour operations in order to avoid delayed aircraft having to divert to other airports and the subsequent disruption that has on outgoing flights the following day;
- the introduction of an 'Entry Into Service Process', which consists of an assigned Project Manager who acts as a point of contact and provider of assistance to airlines that are expanding existing routes or starting new routes at the airport; and,
- the creation of a new body called the Airport Business Development Forum, which is a group of airport stakeholders that meets every two months to discuss route development opportunities and provides potential airline customers with a one-stop shop for data on the airport, the local catchment area and potential demand.

Being aware of the needs of stakeholders and satisfying important publics appear to be closely related to the relationship between MO and performance in service companies (Gray et al., 2002) and this is likely to be the case at airports in EPA's where collaboration with local stakeholders such as local businesses, tourism and regional development agencies is an important factor. The benefits of developing such collaborations include that it enables the airport to pool resources with local stakeholders, develop an integrated approach to regional development, and provide airline customers with increased support and a wider overview of the area and its potential.

Strong working relationships between public and private sectors in the area are likely to impress existing airline customers and provide the airport with a competitive advantage

when it comes to promoting the airport to potential airline customers. The following airports have developed (or been a part of) strategic partnerships that are responsible for promoting their area:

- HIAL, a member of the Highlands Loch Ness marketing group (e.g. see HIAL, 2005);
- North Cape Airport, a member of the North Cape Airport Services (e.g. see Langedahl, 1999);
- Hemavan Airport, a member of Tärnafjällen Incoming (e.g. see Hemavans Flygplats, 2005b);
- Leifur Eiriksson Air Terminal, a member of Iceland Naturally (e.g. see Iceland Naturally, 2005); and,
- Glasgow Prestwick International Airport, a member of the Scottish Travel Agent Partnership Programme (e.g. see Lang, 1999).

Collaborations have been taken a step further in some regions through initiatives such as the Route Development Fund that has been established in parts of Scotland and Northern Ireland. The Route Development Fund is based on a partnership between the public sector, airports and airlines and is aimed at encouraging new air services that promote business links and inbound tourism so as to benefit the region. The fund enables precise economic evaluations of particular routes and reduces the start-up risk to airlines agreeing to operate such routes. However, the Route Development Funds in Scotland and Northern Ireland have produced mixed results and as Pagliari (2005a) points out, only 9 out of 17 routes established with the support of the Scottish Route Development Fund between March 2003 and May 2004 survived. In addition, although airports can lobby for such schemes to be implemented at their airport, they tend to be government-led initiatives so the extent to which airports can develop marketing innovations of this type is fairly limited²⁴.

²⁴ A more detailed explanation of Route Development Funds can be found in Kealey (2004) and Eden (2005).

2.3.5.3 Price

One way in which airports can reduce the start-up risk to airlines agreeing to operate new routes is by offering price incentives such as discounted airport user charges (Graham, 2003a). This has become particularly important at airports wanting to attract low-cost carriers (Francis et al., 2004). Such incentives will usually diminish over time and as the route becomes more established and commercially viable and this is a source of friction between airports and their airlines (Graham, 2003a).

Dublin Airport Authority²⁵ who manage Ireland's main airports (Dublin Airport, Shannon Airport and Cork Airport) have been particularly innovative in providing price incentives to airlines in the past and have offered a range of incentives for new routes (New Route Incentives), the growth of existing routes (Growth Incentives), and incentives for airlines that choose to base aircraft at their airports (Based Aircraft Incentives). The qualifying criteria and extent of the incentives varies depending upon the objectives of each airport but as an example, the following new route incentives have been offered to qualifying routes at three Dublin Airport Authority airports:

- Cork Airport, where a discounted charge of 3 Euros per departing passenger is offered for the first three years of operation and 5 Euros for the fourth and fifth years of operation (Aer Rianta, 2005a);
- Shannon Airport, where a discounted charge of 1.50 Euros per departing passenger is offered for the first year of operation, 2.50 Euros for the second year of operation and 3 Euros for the third, fourth and fifth years of operation (Aer Rianta, 2005b); and,
- Dublin Airport, where a 100% discount on airport user charges is offered for the first year of operation, 75% for the second year, 50% for the third year, and 25% for the fourth year (Aer Rianta, 2005c).

²⁵ The Dublin Airport Authority is a state-owned company that was created in October 2004 following the Irish State Airports Act 2004. The company was previously known as Aer Rianta.

One of the constraints faced by airports that belong to national or regional airport systems is the inability to offer flexibility in airport user charges. Quite often at these airports, charges are set and applied in the same way throughout the entire airport system. This relinquishes the opportunity for airports to compete on pricing and is one of the reasons why low-cost carrier concentration is higher at independently-owned airports where there is more opportunity for them to offer flexible and discounted airport user charges (Pagliari, 2005b). Nichols (2001) suggests that the inflexibility of an airport operator to set levels of aeronautical charges acts as a barrier to establishing services.

Another way in which airports are known to offer price incentives to airlines or tour operators is through the development of joint advertising and promotional campaigns or the provision of marketing support. Airports recognise that they are a derived demand and that only on very rare occasions will a passenger travel to an airport in order to visit that airport. Therefore, airports sometimes support advertising campaigns via intermediaries such as airlines or tour operators. These intermediaries have a much greater level of brand recognition amongst end-users (i.e. passengers) and are able to penetrate markets more effectively than airports, through aggressive marketing campaigns. Therefore, airports sometimes enter into joint advertising and promotional campaigns through the media and travel agents by pooling resources (Graham, 2003a) or provide marketing support directly to airlines or tour operators to assist in their marketing efforts.

At Dublin Airport, airlines or tour operators are able to apply for marketing support on particular routes and are assessed according to a Marketing Support Review Matrix that assesses the route on a number of indicators such as network development potential, aircraft capacity and tourism potential. Routes falling within Band 1 do not receive any marketing support. However, routes falling within Band 2 are eligible to receive between 5,000-19,000 Euros, for Band 3 the support ranges between 25,000-50,000 Euros and for Band 4, the support can be from 50,000 Euros and over (Aer Rianta, 2005c).

2.3.5.4 *Place*

Airports sell direct to airlines or tour operators for rights to use the airport. Airports then rely on intermediaries such as airlines, tour operators, travel agents or travel planning portals to reach end-users. Generally speaking, airports do not sell direct to passengers for rights to use the airport. However, airports are increasingly involved in providing online travel planning support to passengers and also to their airlines or tour operators. This is particularly important considering that online travel sales in Europe increased by as much as 41% between 2003 and 2004 and have increased their proportion of the overall market for European online sales from 0.2 billion Euros (0.1% total market) in 1998 to 18.2 billion Euros (7.6% total market) in 2004 (Marcussen, 2005).

The provision of online timetable services (as provided by companies such as OAG and Innovata) is a basic level of online support but surprisingly, less than 10% of world airports currently buy into online timetable services (Compton, 2005). In addition, whilst most airports have an online presence, their support for airlines or tour operators is fairly limited, especially at airports that belong to large airport systems. A couple of exceptions do exist and one example includes HIAL. HIAL provide online timetable services and links to the tourism industry, airline websites and Expedia (a travel planning portal)²⁶.

2.3.6 Environmental support for marketing innovations

Gray et al. (2000) conducted a study on 329 multi-industry companies in New Zealand in order to investigate the effect that a number of company characteristics and environmental factors have on company performance. Their study investigated the effect of marketing innovations on performance and suggests that the relationship between marketing innovations and performance will be at its strongest when environmental conditions are most supportive (i.e. that environmental support moderates the relationship between

²⁶ The HIAL website is at www.hial.co.uk.

marketing innovations and performance). This is based on the assumption that: “innovation is an important source of competitive advantage in markets where customer preferences are changing rapidly, where competition is intense, where production lifecycles are shortening and maturing, and/or where differentiation is limited” (Gray et al., 2000; p150).

The moderating effect of environmental support on the relationship between marketing innovations and performance was not tested by Gray et al. (2000). However, it does have important implications for airport managers that are keen to enhance their performance through the use of marketing innovations, and is therefore investigated by this study. This is because it implies that marketing innovations will only have an effect on the performance of airports that operate in an environment that is characterised by market turbulence and competitive intensity and limited opportunities for growth or diversification. For airports that do not operate in such an environment, the suggestion is that marketing innovations will not have an effect on performance and may therefore not be worth investing in.

2.3.7 Conceptualising the framework for this study

Having considered literature on MO (the MO construct, antecedents to MO, and consequences of MO), it is possible to illustrate the framework for MO at airports that forms the basis of this study. The factors used to conceptualise the framework are those that have emerged from the literature review as being most important to airports in EPA's. A more detailed analysis of the framework such as the propositions used to measure MO and the methodology used for implementing the framework will be provided in Chapter 4.

Conceptualising the framework for MO at airports is achieved in three main stages. First, the MO construct is delineated. Next, antecedents to MO are delineated. Finally, consequences of MO are delineated.

The construct proposed and validated by Kohli et al. (1993) is used to measure MO and consists of the three main elements: intelligence generation; intelligence dissemination;

and, intelligence response. The three main elements are combined to provide one overall measure of airport MO and the influence of ownership as an antecedent to MO is investigated.

The relationship between MO and performance provides the main focus of this study and direct, moderating and mediating effects on the relationship are investigated.

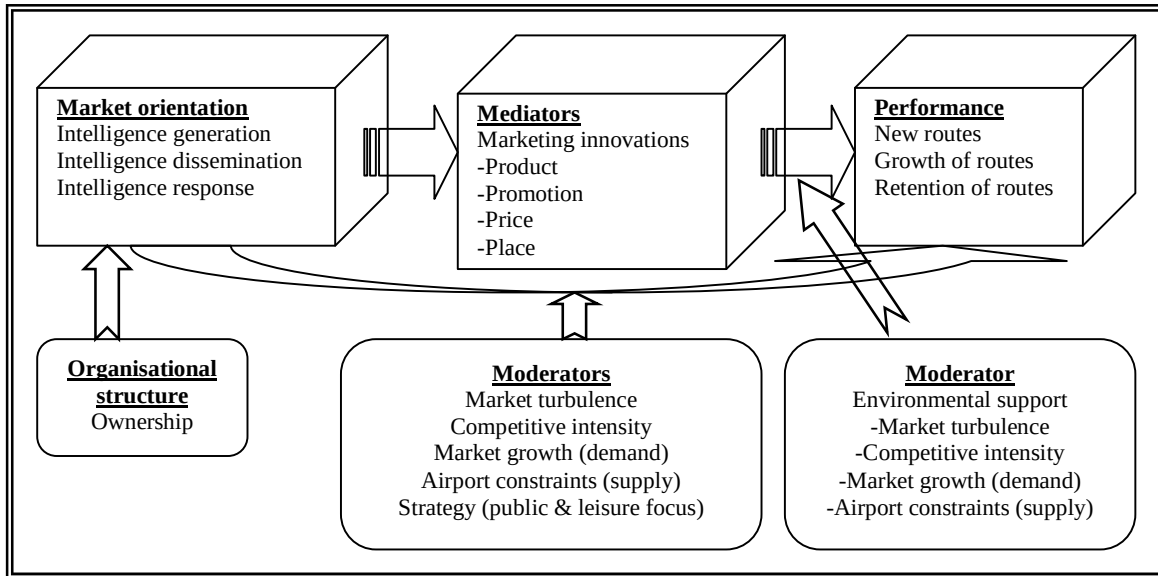
Three marketing performance indicators are used: the attraction of new routes; the growth of existing routes; and, the retention of existing routes. The three marketing performance indicators are combined to provide one overall measure of airport marketing performance and the direct relationship between MO and performance is investigated, whilst controlling for environmental factors (market turbulence and competitive intensity) and market-level factors (market growth and airport constraints).

Environmental factors (market turbulence and competitive intensity), market-level factors (market growth and airport constraints) and strategic factors (public focus and leisure focus) are investigated for their moderating effect on the relationship between MO and performance.

Finally, the mediating effect of airport marketing innovations on the relationship between MO and performance is investigated. Individual airport marketing innovations (i.e. innovations relating to the airport product, promotion, price and place) are combined to provide an overall measure of airport marketing innovations. The moderating effect of environmental support (a combination of environmental and market-level factors) on the relationship between innovation and performance is also investigated.

The conceptual framework for this study can be seen in figure 2.8.

Figure 2.8 Conceptual framework



2.4 Chapter summary

Chapter 2 has reviewed literature that is relevant to this study and indicates where this study fits into debates around the subject. The literature reviewed in this chapter comes from three individual strands: the concept of peripherality (section 2.1); the deregulation of European air transport markets (section 2.2); and, the marketing concept (section 2.3).

Literature reviewed in section 2.1 suggests that peripherality is difficult to define but that at the European level, it is normally defined by spatial indicators that compare levels of accessibility. Peripherality can also be defined by perceived degrees of remoteness, which are normally determined by three types of permanent structural handicap (sparse populations, island regions and mountain areas). The locational disadvantages of peripheral areas are associated with negative factors that are a consequence of high distance costs and/or a perceived degree of remoteness. The negative factors can be reduced by the provision of fast, efficient and affordable access to the main transportation networks and airports (as providers of infrastructure for air services) facilitate accessibility and play a vital role in promoting the social and economic integration of EPA's.

Literature reviewed in section 2.2 explains how routes to and from airports in EPA's were traditionally protected because, in exchange for monopoly rights on dense and profitable routes, national airlines (or their subsidiaries) would serve lightly populated and unprofitable routes such as lifeline domestic services to EPA's. Deregulation of European air transport markets has meant that the cross-subsidisation of loss-making services has been replaced by direct subvention through the PSO programme. Inconsistencies exist in the approach and commitment to PSO's across Europe and as a result, unpredictable and rapidly changing market forces rather than public service considerations may increasingly dictate future air services to and from airports in EPA's. The new market advocates market-driven management practices as a means of satisfying airline customers, which in marketing terminology implies that airports must adopt a MO.

Literature reviewed in section 2.3 identifies two complementary perspectives of MO (behavioural and cultural). The behavioural perspective is most relevant to this study and defines MO as the organisation-wide generation, dissemination and responsiveness to market intelligence. Internal organisational factors such as senior management factors, interdepartmental dynamics and organisational systems act as antecedents to MO and have the potential to enhance or impede MO. At airports in EPA's, internal organisational factors can be represented by the nature of airport ownership, which can be delineated according to whether an airport is owned as part of a national or regional airport system or as an independent entity.

Literature reviewed in section 2.3 also suggests that MO can have a positive effect on the performance of airports in EPA's. This is known as the direct effect of MO on performance. Factors were identified that may have a moderating effect on the relationship between MO and performance. These factors include environmental factors (market turbulence and competitive intensity), market-level factors (market growth and airport constraints) and strategic factors (public focus and leisure focus). Innovations were identified that may have a mediating effect on the relationship between MO and performance. These innovations are associated with the airport marketing mix (i.e. the

product, promotion, price and place). Finally, it was suggested that environmental support (i.e. an environment that is characterised by market turbulence and competitive intensity and limited opportunities for growth or diversification) may have a moderating effect on the relationship between innovations and performance and may therefore determine when innovative marketing practices are most likely to have an effect on performance. The relationships investigated by this study are summarised using a conceptual framework (see figure 2.8).

3. QUESTIONS AND HYPOTHESES

This chapter describes the research questions and hypotheses that have emerged from the review of literature in the previous chapter (Chapter 2). The chapter consists of two main sections. The first section describes the research questions and where relevant, proposes the hypotheses to be tested. The second section provides a summary of the chapter.

3.1 Research questions and hypotheses

Four main questions have emerged from the review of literature. The first question relates to antecedents to MO and in particular, relates to the effect that ownership has on the MO of airports in EPA's. The next three questions relate to the relationship between MO and the performance of airports in EPA's. The four main questions are:

1. Is MO at airports in EPA's affected by airport ownership?
2. Does MO have a positive effect on the performance of airports in EPA's?
3. When does MO have a positive effect on the performance of airports in EPA's?
4. How does MO have a positive effect on the performance of airports in EPA's?

The research questions form the crux of this study and reflect the conceptual framework that emerged during the review of literature. Sub-section 3.1.1 through to 3.1.4 summarise the theoretical context for each research question and state the hypotheses to be tested. Readers should note that much of the discussion in this chapter is derived from the review of literature in Chapter 2 and therefore repeats some of the discussion from that chapter.

3.1.1 Is MO affected by airport ownership?

Literature reviewed in sub-section 2.3.3 recognised the effect that ownership can have on MO. In particular, the findings of Advani (1998) were reviewed. His study found that privatised airports or airports expecting privatisation have significantly higher levels of MO

than airports that are publicly-owned. However, the number of airports in EPA's that are privately-owned or expecting privatisation is very low. This means that a comparable categorisation of airport ownership is not appropriate for this study. Instead, Pagliari (2005b) suggests that airports in EPA's can be grouped according to levels of national, regional, and independent ownership.

Pagliari (2005b) suggests that although independently-owned airports are negatively affected by economies of small scale, they are able to take advantage of locally-based decision-makers that can deal with airline customers directly and can liaise easily with local stakeholders (e.g. local businesses, tourism and regional development agencies). This is compared to regionally-owned or nationally-owned airports that tend to have centrally-based decision-makers whose priorities may conflict with the needs of airlines and local stakeholders. In addition, regionally-owned or nationally-owned airports are likely to experience excessive bureaucracy and inefficiency, and the focus is likely to be on the main airports within the group. Independently-owned airports on the other hand, are likely to be proactive in the marketing and promotion of their airport, have the flexibility to innovate and offer incentives to potential airlines, and focus on reducing costs and improving efficiency.

MO entails generating, disseminating and responding to intelligence on the current and future needs of customers and it is assumed that independently-owned airports that are able to deal with airlines directly, liaise with stakeholders, and respond more quickly and effectively to airlines, will be more market-orientated than airports that are not. Therefore, in terms of the impact of airport ownership on MO, the hypothesis states that:

H1. The more independently-owned the airport, the higher the level of MO.

A large proportion of airports in EPA's are owned by the same regional or national organisation so competition between airports is fairly limited. Parallel to this, Leask (2002) advocates the benefits of independent airport ownership and provides the example of

Prestwick Airport, which after being privatised in 1992, experienced greater competition and subsequent growth and development. However, it is not necessarily the nature of ownership that encourages competition and enhances performance. Instead, the nature of ownership is likely to create a more market-orientated airport, and it is the airport's MO that affects performance. Therefore, the next question asks whether MO has a positive effect on airport performance.

3.1.2 Does MO have a positive effect on airport performance?

Literature reviewed in sub-section 2.3.4.2 suggests that MO has a positive relationship with performance (e.g. Jaworski and Kohli, 1993) and that the relationship is based upon the assumption that companies that are market-orientated will be better equipped to satisfy customer needs and preferences, and subsequently perform better than companies that are not (Day, 1994). This would not have been the case for airports during the regulated era of the European airline industry as regulatory control meant that airport performance was primarily determined by government decisions and by public service considerations, in which case MO would not have had any effect on performance.

The deregulated environment has meant that airlines are freer to choose where they fly to and from and the decisions of airlines are increasingly based upon commercial (as opposed to public) considerations (Graham, 2003a). In the deregulated environment, the assumption is that airports that are more market-orientated are likely to perform better than those that are less market-orientated. Therefore, in terms of the direct effect that MO has on airport performance, the hypothesis states that:

H2. The greater the MO of an airport, the greater its performance.

Environmental factors (market turbulence and competitive intensity) and market-level factors (market growth and airport constraints) control for the effect of MO on performance. Each of the factors is expected to have a negative effect on performance,

except for market growth, which is expected to have a positive effect. Rationale for the expected effects on performance has been provided in sub-section 2.3.4.2.

H2 tests the direct effect of MO on performance. However, literature reviewed in sub-section 2.3.4.2 suggests that a number of environmental, market-level and strategic factors are able to moderate the relationship between MO and performance. Therefore, the next question asks when MO has a positive effect on airport performance.

3.1.3 When does MO have a positive effect on airport performance?

Literature reviewed in sub-section 2.3.4.2 (e.g. Harris, 2001) suggests that market turbulence and competitive intensity strengthen the relationship between MO and performance.

Market turbulence is characterised by the rate of change in customers and their needs and preferences (i.e. the greater the rate of change, the more turbulent the market) (Kohli and Jaworski, 1990). The assumption here is that the greater the turbulence, the greater the need for companies to be market-orientated so that they can understand and respond to changes in customers and their needs and preferences. Furthermore, the more market-orientated the company, the more likely it is to be able to adapt to change and continually satisfy customers.

For airports, market turbulence can be characterised by changes in airline decisions in terms of whether or not to continue operating a particular route, frequency or seat capacity. It can also be characterised by a high turnover of airline customers. In such volatile and unpredictable surroundings, it is likely that the need for MO is heightened and that the level of performance is likely to be greater at airports with a greater MO. Therefore, the hypothesis states that:

- H3. The greater the market turbulence, the stronger the relationship between MO and airport performance.

Competitive intensity is characterised by an environment in which customers have multiple choices (Kohli and Jaworski, 1990). In this environment, MO is assumed to support a competitive advantage and encourage superior performance. Alternatively, companies that experience high competitive intensity but demonstrate low levels of MO are likely to experience inferior performance.

Airports compete for airlines and can compete for origin, destination or transfer traffic. In highly competitive environments, the need for airports to be market-orientated is enhanced and can subsequently enhance performance. This is because competitive intensity means that airports that fail to satisfy airline needs and preferences, are more likely to lose out to competitors that are more market-orientated. Therefore, the hypothesis states that:

- H4. The greater the competitive intensity, the stronger the relationship between MO and airport performance.

The extent to which airports are exposed to market turbulence and competitive intensity often depends upon the strategic focus of the airport (i.e. the nature of airport traffic). For some airports in EPA's, public services still dominate and, for these airports, the need for MO is likely to be fairly limited. This is because routes may be heavily subsidised and determined by public service considerations as opposed to commercial considerations. Under these circumstances, there is little incentive for the airport to be market-orientated and it is likely that airports with low levels of MO can still perform well. Therefore, the hypothesis states that:

- H5. The greater the dominance of public services, the weaker the relationship between MO and airport performance.

This is not likely to be the case at airports that are focused on developing leisure services (e.g. low-cost, charter or niche regional services).

Leisure services are extremely market-driven and tend to serve point-to-point routes (as opposed to hub connections). The market for air services at airports that are focused on developing leisure services is, therefore, highly elastic as airlines can transfer their operations to other airports if they do not prove to be commercially viable and if their needs and preferences are not satisfied. This is as opposed to airports that act as hubs and, therefore, have a large commitment in terms of airline resources devoted to them or airports that attract public services or scheduled hub connections, where hub feed to onward flights reduces the need to be commercially viable. Therefore, the hypothesis states that:

- H6. The greater the focus on leisure markets, the stronger the relationship between MO and airport performance.

Some of the literature reviewed in sub-section 2.3.4.2 (e.g. Narver and Slater, 1990) suggests that MO is likely to be less important in an environment where there is strong market growth. This is because it is assumed that market growth acts as a disincentive to be market-orientated. However, this study proposes that the opposite will be the case at airports in EPA's (i.e. that MO is likely to be more important in an environment where there is strong market growth). This is because airlines are more inclined to choose airports that can demonstrate market growth or potential (Graham, 2003a) and that the fact that market growth exists is not always enough, airports also need to be market-orientated. This is why, in the context of airports, the relationship between MO and performance is expected to be positively moderated by market growth. Therefore, the hypothesis states that:

- H7. The greater the market growth, the greater the relationship between MO and airport performance.

As a consequence of their peripheral location, airports in EPA's are sometimes constrained by limited infrastructure (e.g. inadequate runway, lighting or terminal capacity) or harsh operating conditions (e.g. operating limits, obstacles or frequent adverse weather). Airports that suffer from such constraints may not be in a position to gain from market growth and this means that performance is impeded, irrespective of whether or not the airport is market-orientated. Therefore, the hypothesis states that:

H8. The more constrained the airport, the weaker the relationship between MO and airport performance.

H3 to H8 test the effect of a number of moderating factors on the relationship between MO and performance. Whilst an understanding of the factors that moderate the relationship between MO and performance is of use to airport managers, it does not provide them with an understanding of the management practices that can influence the relationship. Therefore, the next question asks how MO has a positive effect on airport performance.

3.1.4 How does MO have a positive effect on airport performance?

Literature reviewed in sub-section 2.3.4.2 (e.g. Day, 1994) suggests that more market-orientated companies are likely to have superior market and customer sensing capabilities and that by being able to understand and respond to the current and future needs and preferences of their customers, are likely to experience superior performance. Literature reviewed in sub-section 2.3.4.2 (e.g. Han et al., 1998) also suggests that innovation assumes the mediator role in this situation, and determines the success of the relationship between MO and performance. In this context, innovations are implemented (after the intelligence-gathering, disseminating and responding process has taken place) as the medium of choice for achieving company performance.

It is very difficult to be innovative with the airport product, especially with core elements such as the ability for aircraft to land and take off. However, literature reviewed in sub-

section 2.3.5 (e.g. Halpern 2005; 2007) has demonstrated how innovations can be implemented by airports within the context of the airport marketing mix. These types of innovation are expected to have a positive mediating role on the relationship between MO and performance. Therefore, the hypothesis states that:

- H9. The greater the level of airport marketing innovations, the stronger the relationship between MO and airport performance.

Literature reviewed in sub-section 2.3.6 (e.g. Gray et al., 2000) suggests that innovation is an important source of competitive advantage in markets where customer preferences are changing rapidly, where competition is intense, where production lifecycles are shortening and maturing, and/or where differentiation is limited. This implies that the relationship between innovation and performance will be at its strongest when environmental conditions are most supportive. Therefore, the hypothesis states that:

- H10. Environmental support strengthens the relationship between marketing innovations and airport performance.

3.2 Chapter summary

Chapter 3 has described the research questions and hypotheses that have emerged from the review of literature in the previous chapter (Chapter 2). 10 hypotheses have been developed in order to answer the research questions and a summary of the 10 hypotheses is provided in table 3.1. Table 3.1 identifies the hypothesis (H), the relationship to be tested, the proposed direction of the relationship, and the theoretical basis for the relationship.

Table 3.1 Summary of hypotheses

H	Relationship	Direction	Theoretical basis
1	Independent ownership-MO	Positive	Kohli and Jaworski (1990); Jaworski and Kohli (1993); Liu (1995); Advani (1998); Advani and Borins (2001); Cervera et al. (2001); Harris (2001); Harris and Ogbonna (2001); Kim (2003); Green et al. (2005); Matsuno et al. (2005); Qu et al. (2005); Sin et al. (2005)
2	MO-performance	Positive	Narver and Slater (1990); Ruekert (1992); Deshpandé et al. (1993); Jaworski and Kohli (1993); Slater and Narver (1994); Pelham and Wilson (1996); Pitt et al. (1996); Deshpandé and Farley (1998); Narver and Slater (1998); Oczkowski and Farrell (1998); Van Egeren and O'Connor (1998); Baker and Sinkula (1999a); Pelham (1999); Gray et al. (2000); Homburg and Pflesser (2000); Matsuno and Mentzer (2000); Slater and Narver (2000); Cervera et al. (2001); Guo (2002); Matsuno et al. (2002); Perry and Shao (2002); Kim (2003); Pulendran et al. (2003); Wu (2004); Green et al. (2005); Lee and Tsai (2005); Matsuno et al. (2005); Shoham et al. (2005); Sin et al. (2005)
3	MO-market turbulence-performance	Positive	Narver and Slater (1990); Jaworski and Kohli (1993); Gray et al. (2000); Hooley et al. (2003); Kim (2003); Matsuno et al. (2005)
4	MO-competitive intensity-performance	Positive	
5	MO-public focus-performance	Negative	Pelham (1997b); Morgan and Strong (1998); Drummond et al. (2000); Gray et al. (2000); Matsuno and Mentzer (2000); Harris (2001); Hooley et al. (2003); Kim (2003); Matear et al. (2004); Wu (2004); Matsuno et al. (2005)
6	MO-leisure focus-performance	Positive	
7	MO-market growth-performance	Positive	Narver and Slater (1990); Kim (2003); Matsuno et al. (2005)
8	MO-airport constraints-performance	Negative	Narver and Slater (1990); Matsuno et al. (2005)

Table 3.1 Summary of hypotheses (continued)

H	Relationship	Direction	Theoretical basis
9	MO-innovations-performance	Positive	Narver and Slater (1990); Jaworski and Kohli (1993); Day (1994); Slater and Narver (1994); Gatignon and Xuereb (1997); Han et al. (1998); Baker and Sinkula (1999b); Gray et al. (2002); Salavou (2002); Agarwal et al. (2003); Langerak (2003); Maydeu-Olivares and Lado (2003); Pulendran et al. (2003); Matear et al. (2004); Ellis (2005); Lee and Tsai (2005); Matsuno et al. (2005)
10	Innovations-environmental support-performance	Positive	Gray et al. (2000)

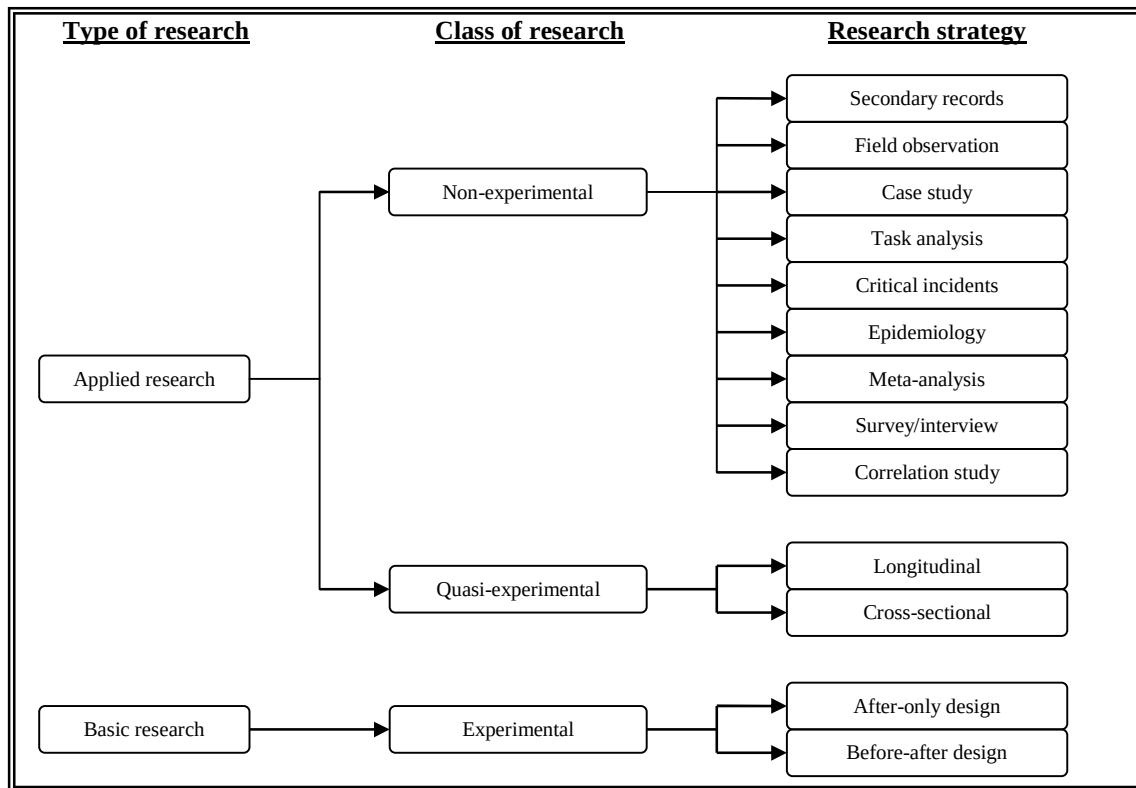
4. METHODOLOGY

Having considered the underpinning theory to this study in the literature review (Chapter 2) and the research questions and hypotheses in the previous chapter (Chapter 3), this chapter will describe the background to this study from a methodological point of view. The chapter consists of five main sections. The first section explains and provides rationale for the research strategy, which was implemented through the use of a questionnaire-based survey. The second section describes the procedures used to define the population for this study. The third section considers issues relating to the design and delivery of the survey. The fourth section introduces the methods that will be used to analyse the data in this study. The fifth section provides a summary of the chapter.

4.1 Research strategy

This study can be classified as belonging to the social sciences area of research because it aims to grasp the social dimensions and consequences of management behaviour. A range of systematic approaches can be applied to research in the area of social sciences and the type of research and class of research that is to be undertaken normally dictates the choice of research strategy. Figure 4.1 identifies a number of types and classes of research and the strategic options for research in the social sciences.

As figure 4.1 indicates, there are two main classes of research in the social sciences; non-experimental and experimental. A third class, quasi-experimental, includes aspects of both experimental and non-experimental research. Non-experimental research is applied within an environment where variables cannot be manipulated or controlled, and this class of research is most common in the social sciences, especially techniques such as the use of secondary records, case studies and surveys or interviews. Experimental and/or quasi-experimental research is typically applied in an environment where variables can be manipulated or controlled.

Figure 4.1 Classes of research and research strategy for the social sciences

Source: Adapted from Wiggins and Stevens (1999)

Broadly speaking, this study aims to examine the relationship between MO and the performance of airports in EPA's. In this instance, variables cannot be manipulated or controlled, so an institutional approach that aims to clarify the existence of phenomena and the nature of relationships between phenomena is required. This is most suited to the non-experimental class of research (Mitchell and Jolley, 1992) and the information required can be derived from a survey, which is often considered to be the most appropriate way of gathering empirical evidence for non-experimental research (Oppenheim, 1992).

As was indicated in table 2.8, surveys²⁷ are by far the most used method of research for studies on MO. Indeed, of the 32 studies listed in table 2.8, 26 used surveys and only six used interviews. This study aims to grasp the social dimensions and consequences of management behaviour for a specific population and the objectives of this study are well suited to a survey. Therefore, a survey was selected as the main method of research for this study.

According to Wiggins and Stevens (1999), surveys tend to be relatively cost-effective and have the ability to encompass a large population with relative ease. This study had no financial budget and as will be indicated in sub-section 4.2.2, consists of a large and scattered population. Therefore, the advantages of a survey are significant to this study. Unfortunately, the advantages are accompanied by a number of disadvantages and the main ones include that the researcher has a lack of control over data and that the survey may only return a limited number of responses. Issues relating to survey design and delivery become important when trying to mitigate for the disadvantages of using a survey and these will be discussed in section 4.3.

Interviews could have been used instead of surveys. However, the population for this study consists of a large number of airports in scattered and remote parts of Europe so it would have been extremely time-consuming and costly to conduct face-to-face or even telephone interviews. In addition, without using complicated and time-consuming techniques such as follow-up interviews, triangulation and/or a mixed-methods approach, the accuracy of the interpretation of an interview may be reduced (Wiggins and Stevens, 1999). This is because the interviewer may experience problems in interpreting whether the data produced

²⁷ Surveys are said to differ from questionnaires but the two terms are often used interchangeably. Surveys tend to focus on broad issues that aim to answer research questions whilst questionnaires tend to focus on a central theme or notion that aims to test specific hypotheses (Wiggins and Stevens, 1999). However, a questionnaire is a type of survey, which is why the two terms are often used interchangeably. Studies on MO tend to test specific hypotheses using a questionnaire-based survey that gathers quantified information on the behaviour and/or attitudes of a specific population. Most of these studies use the term 'survey' (as opposed to questionnaire-based survey) and for the purposes of this study, the term 'survey' will be used.

by the interview is an accurate reflection of what the respondent actually said and meant (Dyer, 1995).

Finn et al. (2000) describe the difference between descriptive and analytical surveys. The survey that was used for this study is analytical because it seeks explanations for observed variations in given phenomena (e.g. perceived variations in the airport business environment, perceived variations in management behaviours, and perceived variations in airport performance). This is as opposed to descriptive surveys that are designed to identify characteristics of a specified population either at a given moment in time or over a period of time.

Advani (1998) conducted an analytical survey to investigate factors that affect airport MO. His study was based on a survey that was sent to managers of 480 worldwide member airports of Airports Council International (ACI)²⁸. 50 propositions measuring MO and factors that influence MO were presented on a 5-point Likert scale and the survey aimed for a five-minute completion time. The survey was piloted on 10 airports and 201 airports provided useable responses to a final version of the survey (a response rate of 42%). The survey was written in two languages; English and Spanish.

Fry et al. (2004) have also conducted an analytical survey that is of interest to this study. However, on this occasion the study was on airlines instead of airports. The study was based upon a survey on the use of performance measurement techniques by airlines. Approximately 22 open, closed and scaled questions were presented to 200 of the world's largest airlines as ranked by Air Transport World²⁹ in terms of total passengers carried for 2001 and still operating by the time of the survey. The survey was addressed to Flight Operations and was sent out on 10th February 2003. Reminders were sent to non-

²⁸ ACI is a worldwide association of airport operators. As of 2006, ACI represents over 1,650 airports in 176 countries worldwide. More information on ACI can be found at www.airports.org.

²⁹ Air Transport World provides news and reports about airline, air transport and related industries. More information on Air Transport World can be found at www.atwonline.com.

respondents on 17th March 2003, 28th May 2003 and 27th August 2003. 43 airlines provided usable responses to the survey (a response rate of 22%).

York Aviation conducts a number of surveys on airports in Europe on behalf of ACI-Europe³⁰. A recent survey on the social and economic impact of airports in Europe (York Aviation, 2004) was sent to 204 member airports of ACI-Europe. The survey was based on the broad methodology and definition from the ACI-Europe Study Kit 2000 asking what the direct, indirect, induced and catalytic impacts of airports are. The survey was primarily descriptive as it aimed to identify characteristics of a specified population at a given moment in time. 41 airports returned the survey providing a response rate of 20%.

The surveys conducted by Advani (1998), Fry et al. (2004) and York Aviation (2004) provide a great deal of practical guidance on issues relating to survey design and delivery for aviation-related studies. For MO-related issues, practical guidance is provided by the survey conducted by Advani (1998) and the surveys conducted in other studies on MO that are listed in table 2.8. Issues relating to survey design and delivery will be considered in section 4.3.

Having provided a brief introduction to the research strategy; section 4.2 will describe the procedures used to establish the spatial parameters for this study and to define the study population (i.e. airports in EPA's).

4.2 Defining the population

Desk research from secondary sources facilitated the identification of EPA's and their airports, thus determining the spatial parameters and a population of airports for this study.

³⁰ ACI-Europe is the European branch of ACI. As of 2006, ACI-Europe represents over 400 airports in 45 European countries and member airports handle 90% of commercial air traffic in Europe. More information on ACI-Europe can be found at www.aci-europe.org.

The methods used to define and measure EPA's will be outlined before defining the methods used to identify a population of airports.

4.2.1 Defining and measuring EPA's

Based upon the findings in sub-section 2.1.1, this study used a spatial peripherality indicator and perceived degrees of remoteness for its definition and measurement of EPA's. The methods used will be outlined in sub-sections 4.2.1.1 and 4.2.1.2 respectively.

4.2.1.1 Spatial peripherality indicator

A potential accessibility indicator was used for this study and is based on the assumption that the attraction of a region increases with size and decreases with travel time. The equation used to calculate potential accessibility is provided in figure 4.2.

Figure 4.2 Equation used to calculate potential accessibility

$Aa = \sum (Tab)(Pb)$
Where: Aa is the accessibility (A) of region a. Tab is the average travel time by car (T) to reach region b from region a. Pb is the population (P) reached at region b. The calculation is repeated until the accessibility of region a to all other regions has been calculated and averaged out. The process is then repeated until the average accessibility of each region has been calculated. The averages are then be presented as an index in order to identify the relative accessibility of each region.

Travel time data and the methodology used to generate the data was provided by Schürmann and Talaat (2000). The data has been generated by calculating the average travel time (by passenger car) from the centroid (main urban centre) of one region to the

centroid of every other region, including its own. Travel time by passenger car was used because it tends to represent the perspective of service firms and consumers (i.e. the markets that can be reached from a particular region) and, therefore, supports the strong marketing focus of this study. This is as opposed to the use of travel time by freight lorry that tends to represent the perspective of producers on potential markets such as air freight, jobs and business opportunities.

Spiekermann and Neubauer (2002) have calculated potential accessibility with respect to road, rail, air and multi-modal travel and have found that results vary greatly between the different methods used. They suggest that multi-modal travel time is the most appropriate single indicator. However, regions that belong to a major rail corridor or have a major international airport will have a distorted level of peripherality that can be induced or reduced dramatically by changes in transport infrastructure. This study does not aim to assess the impact of transport infrastructure on regional accessibility and it is felt that the use of passenger car provides a more natural and accurate representation of a region's spatial remoteness.

The travel time calculations made by Schürmann and Talaat (2000) and used in this study incorporate: different national speed limits; speed constraints in urban and mountainous areas; different road types; sea journeys; border delays; road gradients (estimated by overlaying the road network with a digital terrain model); and, congestion in urban areas (estimated as a function of population density). The travel time calculations, therefore, take account of many of the permanent structural representations of peripherality that have been identified in sub-section 2.1.1 (i.e. island regions and mountain areas).

The calculations were made for the 25 member states of the EU (including the 10 states that joined in May 2004), two of the three Candidate Countries that are due to join the EU in 2007 (the only one not included being Turkey which was not negotiating membership at the time of this study); and, the four countries of the EFTA. Table 4.1 provides a list of the 31 states (EU31) that were included in the travel time calculations.

Table 4.1 EU31 states

EU25 including the states that joined the EU in 2004				States set to join the EU in 2007	EFTA states
Austria	Greece	UK	Cyprus	Bulgaria	Iceland
Belgium	Ireland	Estonia	Malta	Romania	Liechtenstein
Germany	Italy	Hungary	Latvia		Norway
Denmark	Luxembourg	Lithuania	Poland		Switzerland
Spain	Netherlands	Slovenia			
Finland	Portugal	Czech Republic			
France	Sweden	Slovak Republic			

For this study it was decided that EU31 should be considered at NUTS II. This is because NUTS I divisions are mainly countries and provide too small a breakdown of regions. Although NUTS III-V would provide a more detailed assessment and division of regions and provide a more representative definition of an airport's catchment area, it was felt that the sheer number of regions would make it too difficult to generate, present and interpret data without the use of a sophisticated database and mapping software. In addition, some airports do have large catchment areas that are likely to reach or in some cases exceed NUTS III-V borders.

The number of institutional divisions used in this study for EU31 at NUTS II is 271 and a breakdown of these divisions can be seen in table 4.2³¹.

Table 4.2 EU31 NUTS II regions

Country	NUTS II institutional definition	Regions
Austria	Bundesländer	9
Belgium	Provinces	11
Denmark	Country	1
Germany	Regierungsbezirke	40

³¹ Readers should note that the Eurostat division of regions changes over time and that Appendix B provides an accurate breakdown of the NUTS II regions that are used in this study.

Table 4.2 EU31 NUTS II regions (continued)

Country	NUTS II institutional definition	Regions
Greece	Periferies	13
Spain	Comunidades y ciudades autonomas	16
France	Régions	22
Ireland	Regions	2
Italy	Regioni	20
Luxembourg	Country	1
Netherlands	Provincies	12
Portugal	Comissaoes de Coordenação regional + Regioes autonomas	5
Finland	Suuralueet / Storområden	6
Sweden	Riksområden	8
England	Counties (some grouped); Inner & Outer London	30
Wales	Group of unitary authorities	2
Scotland	Groups of unitary authorities or Local Enterprise Companies	4
Northern Ireland	Country	1
Cyprus	Country	1
Czech Republic	Groups of Kraje	8
Estonia	Country	1
Hungary	Tervezesi-Statistikai	7
Latvia	Country	1
Lithuania	Country	1
Malta	Country	1
Poland	Wojewodztwa	16
Slovak Republic	Zoskupenia Krajov	4
Slovenia	Country	1
Bulgaria	Rajon za Planirane	3
Romania	Regions	8
Iceland	Country	1
Liechtenstein	Country	1
Norway	Landsdeler	7
Switzerland	Grossregionen	7
EU31 total	NUTS II regions	271

It could be argued that economic indicators are a more appropriate measurement of activity for a study on the air transport industry as there is a direct correlation between the economic activity of a country or region and the number of trips taken per capita (Hanlon, 1999). However, this means that the true peripheral nature of Europe's northern periphery (e.g. parts of northern Scandinavia) may be distorted by the relatively high levels of GDP per capita in those areas that is caused by the higher economic outputs of those countries and the fact that the national assets and policies help to reduce the economic disadvantages of peripherality (Spiekermann and Neubauer, 2002).

The travel time between each region was weighted by the population of the destination region using Microsoft Excel and the average travel time by car to all other regions was calculated for each region. The accessibility of each EU31 region (271 regions) was then presented in the form of an index with the average of all the EU31 regions being 100. Regions above the average are considered to be relatively inaccessible whilst regions below average are considered to be relatively accessible. The higher the index number, the more inaccessible the region is. The findings of the spatial peripherality indicator are provided in Appendix C. The NUTS II regions in Appendix C are ranked in order of peripherality, which is indicated by the column labelled 'Index'. Iceland is the most peripheral region (with an index of 400) and Rheinhessen-Pfalz in Germany is the least peripheral region (with an index of 61). Lancashire in the United Kingdom is average in terms of peripherality (with an index of 100). Any region above Lancashire is considered to be peripheral according to the spatial peripherality indicator for this study.

4.2.1.2 Perceived degrees of remoteness

This study also used perceived degrees of remoteness in its measurement of peripherality and used three main measures: sparse populations; island regions; and, mountain areas.

Sparse populations

Only regions that are inaccessible to potential markets (according to the spatial peripherality indicator defined in sub-section 4.2.1.1) and have a population density of less than 100 inhabitants per km² were included in this study³². This meant that capital city areas such as Helsinki, Athens, Lisbon, Stockholm, and Oslo have been excluded from the population. All of these areas are relatively inaccessible to potential markets according to the spatial peripherality indicator but have relatively large local markets that are represented by their relatively high population densities. Population densities for EU31 NUTS II regions were determined by calculating the number of inhabitants per surface area (km²). This was calculated using population data and surface area data for 2000. The data was extracted from the Eurostat database and was provided by Eurostat in March 2005.

The findings of the population density analysis are provided in Appendix C. The column labelled 'Density' in Appendix C indicates the population density for each region (measured in terms of the number of inhabitants per km²). Any NUTS II region with a peripherality index of over 100 and a population density of less than 100 inhabitants per km² was included in this study. The only exception to this rule is UKN Northern Ireland. This region meets the requirements of the spatial peripherality indicator (with an index of 137) but is not sparsely populated (having a population density of 119 inhabitants per km²). Despite this, the region was included in this study on the basis that it is geographically separate from the mainland of the United Kingdom. The justification for including the region in this study is supported by industry commentators such as Graham (2003b), who considers the region to be peripheral in the context of Europe.

The second perceived measure of remoteness is island regions.

³² The figure of 100 inhabitants per km² is used by the EC to determine areas with a low population density (e.g. see Wikipedia, 2005).

Island regions

Some island regions would have been excluded from this study on the basis of their high population densities. However, this would not have been a fair reflection of their relative inaccessibility to potential markets and relatively small local markets.

As was mentioned in sub-section 2.1.1, Plainstat Europe and Bradley Dunbar Associates (2003) has identified Europe's island regions at both NUTS II and III and the island regions are listed in table 2.2. The classification of island regions for this study follows the list provided in table 2.2 and includes island regions at both NUTS II and III. This is so that a number of smaller island regions that exist at NUTS III but not NUTS II could be included (e.g. DKO07 Bornholm and UKK30 Isles of Scilly). It was mentioned in sub-section 2.1.1 that a number of islands are missing from the list in table 2.2, the most obvious ones being the Isle of Man, the Channel Islands and the Faroe Islands. This is because these regions are not included in the NUTS classification of regions. However, they were included in this study. In addition, table 2.2 does not include island regions from the 10 states that joined the EU in May 2004 or the Candidate Countries. As will be mentioned in sub-section 4.2.1.3, these regions were excluded from this study, except for Cyprus and Malta, so these two island regions, which are in fact countries, were included in this study.

Island regions in Norway (Svalbard and the Lofoten Islands) are not listed in table 2.2 because Norway belongs to the EFTA (as opposed to the EU) and countries of the EFTA were not included in the study by Plainstat Europe and Bradley Dunbar Associates (2003). However, the island regions of Svalbard and the Lofoten Islands were already included in this study as they belong to the region NO07 Nord Norge, which is defined as being relatively inaccessible (according to the spatial peripherality indicator) and sparsely populated.

As will be mentioned in sub-section 4.2.1.3, islands belonging to Europe's outermost regions such as the Canary Islands and the Azores were not included in this study.

Mountain areas

The third perceived measure of remoteness is mountain areas. The digital terrain model provided in figure 2.3 was used in order to physically delineate Europe's mountain areas. Many of the mountain areas delineated in figure 2.3 were already included in this study on the basis that they are located in areas that are relatively inaccessible (according to the spatial peripherality indicator) and sparsely populated (e.g. the Scandinavian mountains, the Scottish highlands, and parts of Iceland and mainland Greece), or are island regions (e.g. the Faroe Islands and the southern/Mediterranean islands of Spain, France, Italy and Greece). However, significant mountain areas exist that were not yet included in this study. These mountain areas are listed in table 4.3 and were included in this study. Delineation of the mountain areas is not provided according to the NUTS classification because mountain ranges typically cover vast areas and multiple regions.

Table 4.3 Mountain areas not already included by previous indicators

Country (code)	Mountain areas
Austria (AT)	Austrian Alps; Tauern Mountains
Germany (DE)	Bavarian Alps
Switzerland (CH)	Swiss Alps
France (FR)	French Pyrenees; Massif Central; Northern French Alps; Mediterranean French Alps
Italy (IT)	Italian Alps; Apennines
Spain (ES)	Spanish Pyrenees; Sierra Morena; Spanish Cantabrian Mountains
Portugal (PT)	Potugese Cantabrian Mountains

4.2.1.3 EPA's

The findings of the perceived degrees of remoteness were combined with the findings of the spatial peripherality indicator in order to produce a list of areas that could be defined as being EPA's for the purpose of this study and the 76 regions are listed in table 4.4.

Regions are coded according to their NUTS II or III classification except for the additional island regions and mountain areas identified in sub-section 4.2.1.2 that do not belong to the NUTS classification of regions. The additional island regions and mountain areas are coded by their country code and where multiple regions exist, the country code is proceeded by the letter a, b or c.

NUTS II regions of Eastern European countries that joined the EU in 2004 or are set to join in 2007 were excluded from this study on the basis that information is not readily available, especially on the airports in these regions. The only exception to this is the southern/Mediterranean countries of Malta and Cyprus that are NUTS II regions themselves and were included on the basis that information is readily available on the regions and their airports. Finally, Europe's outermost NUTS II regions were not included due to their geographical separation from Europe. These regions include ES70 Canarias, FR91 Guadeloupe, FR91 Martinique, FR93 Guyane, FR94 Réunion, PT20 Açores, and PT30 Madeira.

Table 4.4 EPA's

No.	Code	Region	No.	Code	Region
1	ATa	Austrian Alps	39	GR24	Stereia Ellada
2	ATb	Tauern Mountains	40	GR25	Peloponnisos
3	CH	Swiss Alps	41	GR41	Voreio Aigaio
4	CI	Channel Islands	42	GR42	Notio Aigaio
5	CY00	Cyprus	43	GR43	Kriti
6	DE	Bavarian Alps	44	IE01	Border, Midland & Western
7	DK007	Bornholm	45	IE02	Southern and Eastern
8	ES11	Galicía	46	IM	Isle of Man
9	ES13	Cantabria	47	IS00	Ísland
10	ES23	La Rioja	48	IT92	Basilicata
11	ES24	Aragón	49	ITA	Sicilia
12	ES41	Castilla y León	50	ITB	Sardegna
13	ES42	Castilla-La Mancha	51	ITa	Italian Alps

Table 4.4 EPA's (continued)

No.	Code	Region	No.	Code	Region
14	ES43	Extremadura	52	ITb	Apennines
15	ES53	Illes Balears	53	MA00	Malta
16	ES61	Andalucía (including Gibraltar)	54	NO02	Hedmark og Oppland
17	ES62	Región de Murcia	55	NO03	Sør-Østlandet
18	ES63	Ceuta & Melilla	56	NO04	Agder og Rogaland
19	ESa	Spanish Pyrenees	57	NO05	Vestlandet
20	ESb	Sierra Morena	58	NO06	Trøndelag
21	ESc	Spanish Cantabrian Mountains	59	NO07	Nord-Norge
22	FI13	Itä-Suomi	60	PT12	Centro (P)
23	FI14	Väli-Suomi	61	PT15	Algarve
24	FI15	Pohjois-Suomi	62	PTa	Portuguese Cantabrian Mountains
25	FI17	Etelä-Suomi	63	PTb	Serra da Estrela
26	FI20	Åland	64	SE02	Östra Mellansverige
27	FR83	Corse	65	SE04	Sydsverige
28	FRa	French Pyrenees	66	SE06	Norra Mellansverige
29	FRb	Massif Central	67	SE07	Mellersta Norrland
30	FRc	Northern French Alps	68	SE08	Övre Norrland
31	FRd	Mediterranean French Alps	69	SE09	Småland med öarna
32	FI	Faroe Islands	70	SE0A	Västsverige
33	GR11	Anatoliki Makedonia, Thraki	71	UKD1	Cumbria
34	GR13	Dytiki Makedonia	72	UKJ34	Isle of Wight
35	GR14	Thessalia	73	UKK30	Isles of Scilly
36	GR21	Ipeiros	74	UKM1	North Eastern Scotland
37	GR22	Ionia Nisia	75	UKM4	Highlands and Islands
38	GR23	Dytiki Ellada	76	UKN	Northern Ireland

Having outlined the methodological considerations for defining and measuring EPA's, it is necessary to consider the methodological considerations for identifying the airports and the nature of airport provision in EPA's.

4.2.2 Airports and the nature of airport provision in EPA's

Under its guidelines for the development of the TEN-T, the EC has established an 'eligibility criteria for airports of common interest' (European Commission, 1996). Airports of common interest fall under one of three types of connecting points: international; community; or, regional. In order to fall into one of these three categories of connecting points, airports must meet criteria that are presented in table 4.5.

Table 4.5 Eligibility criteria for airports of common interest

International connecting points. Total annual traffic volume of no less than:
• 5,000,000 passenger movements minus 10%, or • 100,000 commercial aircraft movements, or • 150,000 freight tonnes, or • 1,000,000 extra-community passenger movements.
Community connecting points. Total annual traffic volume of no less than:
• 1,000,000 – 4,499,999 passenger movements, or • 50,000 – 149,999 freight tonnes, or • 500,000 – 899,999 passenger movements, or which at least 30% are non-national, or • 300,000 – 899,999 passenger movements and located off the European mainland at a distance of over 500km from the nearest international connecting point.
Regional connecting & accessibility points. Total annual traffic volume of no less than:
• 500,000 – 899,999 passenger movements, or which less than 30% are non-national, or • 250,000 minus 10% - 499,999 passenger movements, or • 10,000 – 49,999 freight tonnes, or • Located on an island of a member state, or • Located in a landlocked area of the community with commercial services operated by aircraft with a maximum take-off weight in excess of 10 tonnes.

Source: Adapted from European Commission (1996)

Airports of common interest and the category to which they belong are shown in figure 4.3. Any airport that appears in figure 4.3 and is located in EPA's was selected for inclusion to

this study. For those regions that do not currently fall under the scope of the TEN-T (e.g. Cyprus, Malta, the Isle of Man, the Channel Islands, the Faroe Islands, and the four countries that belong to the EFTA), airports were sourced using Pooley's Flight Atlas and traffic data from ACI-Europe or the relevant national ministry or civil aviation authority. A total of 232 airports were identified and the list of airports per region is provided in table 4.6.

Technical data (IATA airport code³³, TEN-T category, usage, clearance, flight rules, runway type, length of longest runway, and owner) for the airports listed in table 4.6 was then gathered from a collection of sources including national ministries and civil aviation authorities, airport companies and the airports themselves. This information provides an indication of the nature of airport provision in EPA's, which will be used for the analysis of sample characteristics in section 5.1.

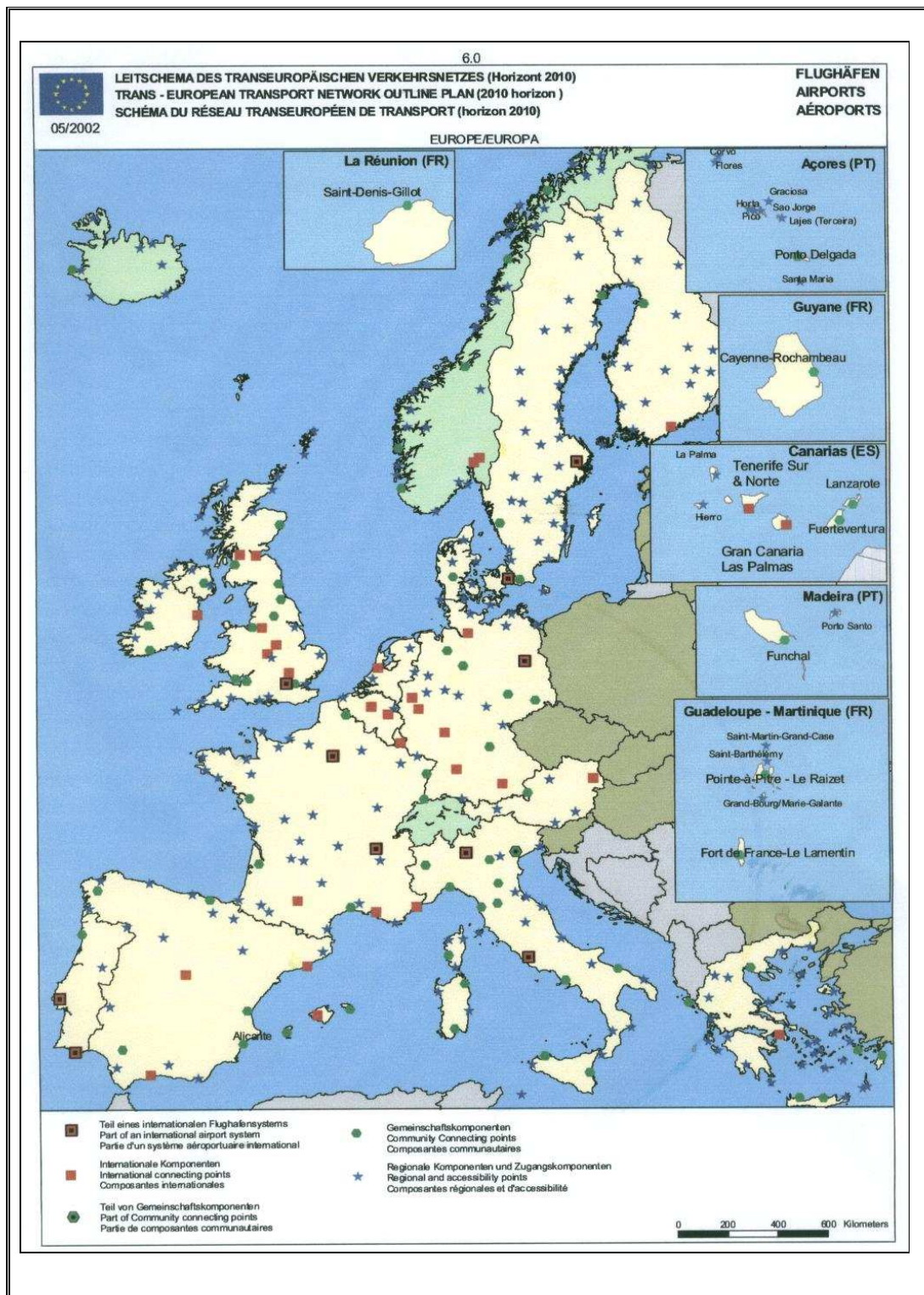
15 airports³⁴ were removed from the population due to a lack of information and the fact that current traffic levels (as of the year ending 2005) fall short of the TEN-T categories. This left a population of 217 airports and all of these airports were included in the study population for this study. A full list of the airports and airport technical data is provided in Appendix D. There was no sampling process because the whole population will be surveyed. This means that the survey will effectively be a census of the whole population.

Having outlined the methodological considerations for identifying EPA's and their airports, it is necessary to outline the methodological considerations for the design and delivery of the survey.

³³ An IATA airport code is a three-letter code that is defined by IATA and designated to many airports around the world. The IATA airport codes (otherwise known as 'location identifiers') are published twice a year in the IATA Airline Coding Directory.

³⁴ The 15 airports (and the regions in which they are located) are Almeria (ES61), Iraklion (GR43), Inishmore Inishmann & Inisheer (IE01), Husavik (IS00), Trapani & Pantelleria (ITG1), Tortoli Arbatax (ITG2), Perugia (ITb), Skien Geiteryggen & Geilo Dagali (NO03), Covilha (PT12), Braganca (PT), Hudiksvall (SE06), Skovde (SE0A).

Figure 4.3 Airports of common interest in Europe



Source: European Commission (2005g)

Table 4.6 Population of airports per region

Region	Airports	No.
ATa Austrian Alps	Salzburg, Innsbruck	2
CI Channel Islands	Guernsey, Jersey, Alderney	3
CH Swiss Alps	Sion, St Moritz-Engadin	2
CY00 Cyprus	Larnaca, Paphos	2
DE Bavarian Alps	Friedrichshafen	1
DK007 Bornholm	Bornholm	1
ES11 Galicia	Santiago de Compostela, A Coruna, Vigo	3
ES13 Cantabria	Santander	1
ES24 Aragón	Zaragoza	1
ES41 Castilla y León	Valladolid	1
ES43 Extremadura	Badajoz	1
ES53 Illes Balears	Menorca, Palma de Mallorca, Ibiza	3
ES61 Andalucía (including Gibraltar)	Malaga, Sevilla, Jerez, Granada, Almeria, Gibraltar	6
FI13 Itä-Suomi	Kajaani, Kuopio, Joensuu, Savonlinna, Varkaus, Mikkeli	6
FI14 Väli-Suomi	Tampere, Pori, Jyväskylä, Vaasa, Seinäjoki,	5
FI15 Pohjois-Suomi	Kruunupyy, Kuusamo, Kemi-Tornio, Oulu, Ivalo, Enontekiö, Kittilä, Rovaniemi	8
FI17 Etelä-Suomi	As for FI14 (the two regions have been merged)	0
FI20 Åland	Mariehamn	1
FI Faroe Islands	Vagar	1
FR83 Corse	Calvi, Bastia, Ajaccio, Figari	4
FRa French Pyrenees	Pau-Pyrénées, Tarbes-Ossun-Lourdes, Perpignan-Rivesaltes	3
FRb Massif Central	Nîmes-Arles-Camargue, Rodez	2
FRc Northern French Alps	Grenoble	1
GR11 Anatoliki Makedonia	Kavala, Alexandroupolis	2
GR13 Dytiki Makedonia	Kastoria, Kozani	2
GR14 Thessalia	Skiathos	1
GR21 Ipeiros	Ioannina, Preveza Aktion	2
GR22 Ionia Nisia	Kerkira, Kefallinia, Zakynthos	3
GR23 Dytiki Ellada	Araxos	1
GR24 Sterea Ellada	Skiros, Kithira	2
GR25 Peloponnisos	Kalamata	1

Table 4.6 Population of airports per region (continued)

Region	Airports	No.
GR41 Voreio Aigaio	Limnos, Mitilini, Chios, Samos, Ikaria	5
GR42 Notio Aigaio	Kastelorizo, Rhodes, Karpathos, Kasos, Astypalaia, Leros, Kos, Santorini, Milos, Paros, Naxos, Mykonos, Syros	13
GR43 Kriti	Iraklion, Sitia, Chania	3
IM Isle of Man	Isle of Man	1
IE01 Border, Midland & Western	Sligo, Donegal, Galway, Knock, Inishmore Inishmann, Inisheer	6
IE02 Southern & Eastern	Dublin, Wateford, Cork, Kerry, Shannon	5
IS00 Ísland	Isafjordur, Keflavik, Reykjavik, Vestmannaeyjar, Husavik, Akureyri, Egilsstaðir, Hofn Hornafjordur	8
ITA Sicilia	Palermo, Catania, Trapani, Pantelleria,	4
ITB Sardegna	Olbia, Alghero, Tortoli, Cagliari	4
ITb Apennines	Genoa-Sestri, Perugia, Lamenzia-Terne	3
MA00 Malta	Malta	1
NO03 Sør-Østlandet	Sandefjord, Skien, Geilo	3
NO04 Agder & Rogaland	Kristiansand, Stavanger, Haugesund	3
NO05 Vestlandet	Stord, Bergen, Sogndal, Sandane, Florø, Førde, Ålesund, Molde, Kristiansund	9
NO06 Trøndelag	Trondheim, Røros, Namsos, Rørvik	4
NO07 Nord-Norge	Sandnesjøen, Brønnøysund, Mo i Rana, Mosjøen, Bodø, Harstad, Narvik, Bardufoss, Røst, Svolvær, Leknes, Stokmarknes, Andøya, Tromsø, Alta, Hasvik, Hammerfest, Lakselv, Honningsvåg, Mehamn, Berlevåg, Båtsfjord, Kirkenes, Vardø, Vadsø, Svalbard	26
PT12 Centro (P)	Covilha	1
PT15 Algarve	Faro	1
PT Potugese Cantabrian Mountains	Bragança	1
SE02 Östra Mellansverige	Västerås, Örebro, Norrköping, Linköping City, Borlänge,	5
SE04 Sydsverige	Malmö, Ronneby, Ängelholm, Kristianstad	4
SE06 Norra Mellansverige	Hudiksvall, Söderhamn, Mora, Karlstad, Gävle, Pajala, Torsby	7

Table 4.6 Population of airports per region (continued)

Region	Airports	No.
SE07 Mellersta Norrland	Örnsköldsvik, Kramfors, Sundsvall-Härnösand, Östersund, Sveg	5
SE08 Övre Norrland	Arvidsjaur, Hemavan, Storuman, Lycksele, Vilhelmina, Skellefteå, Umeå, Kiruna, Gällivare, Luleå	10
SE09 Småland med öarna	Visby, Oskarshamn, Hultsfred, Kalmar, Växjö, Jönköping	6
SE0A Västsverige	Lidköping, Skövde, Göteborg-Landvetter, Göteborg City, Halmstad, Trollhatten	6
UKK3 Cornwall & Isles of Scilly	Newquay, St Mary's	2
UKM1 North Eastern Scotland	Aberdeen	1
UKM4 Highlands & Islands	Islay, Tiree, Barra, Benbecula, Stornoway, Kirkwall, Sumburgh, Campbeltown, Inverness, Wick	10
UKN Northern Ireland	Belfast International, Belfast City, City of Derry	3
Total		232

Notes:

a. Regions without any airports include: Austria (ATb Tauern Mountains); Spain (ES23 La Rioja, ES42 Castilla-La Mancha, ES62 Región de Murcia, ES63 Ceuta & Melilla, ESa Spanish Pyrenees, ESb Sierra Morena, ESc Spanish Cantabrian Mountains), France (FRd Mediterranean French Alps), Italy (IT92 / ITF5 Basilicata, ITa Italian Alps), Norway (NO02 Hedmark og Oppland), United Kingdom (UKD1 Cumbria, UKJ34 Isle of Wight).

4.3 Survey design and delivery

4.3.1 Construction of the variables

According to the conceptual framework (figure 2.8) and the research questions and hypotheses (Chapter 3), 11 variables needed to be constructed in order to complete this study. The 11 variables are:

1. Market orientation.
2. Ownership.
3. Performance.

4. Market turbulence.
5. Competitive intensity.
6. Passenger service focus (public service focus).
7. Air service focus (leisure focus).
8. Market growth.
9. Airport constraints.
10. Marketing innovations.
11. Environmental support.

All of the variables listed were created using the survey except for the ownership variable, which was sought from secondary records whilst defining the population (e.g. see sub-section 4.2.2). The creation of each of the variables will be considered individually. Airport name and controlling variables will also be considered and a summary of the variables will be provided in sub-section 4.3.1.13.

4.3.1.1 Market orientation

A measurement of MO is required for H1 through to H9. The MO variable was constructed by asking respondents to answer a set of propositions that measure MO. The propositions are taken from the Kohli et al. (1993) construct. The Kohli et al. (1993) construct has already been discussed in sub-section 2.3.1.1 and the rationale for its use in this study has been provided in sub-section 2.3.2. A full version of the construct can be seen in Appendix A1.

Most studies of MO do not distinguish between different types of customer and apply one measurement of MO for all customer types. Advani (1998) is one exception to this. Advani (1998) measured MO at airports according to two main types of customer; airlines and passengers on the basis that they are sufficiently different customer types. This study has also recognised the different types of airport customer (e.g. see table 2.10). However,

the focus of this study is on the relationship between airports and their airline customers and the MO construct, therefore, only measures airline MO.

The Kohli et al. (1993) construct consists of three elements (intelligence generation, intelligence dissemination and intelligence response) and 20 propositions. The MO construct used for this study consists of the three elements of the Kohli et al. (1993) construct (although they are worded slightly differently as gathering market intelligence, sharing market intelligence and responding to market intelligence). Three of the Kohli et al. (1993) propositions (propositions 4, 12 and 18) were rejected on the basis that they were not particularly relevant. Propositions 4 and 18 are concerned with end-users (i.e. passengers) and as is mentioned in the previous paragraph (and in sub-section 2.3.2), this study is only concerned with measuring airline MO. Proposition 12 is concerned with how airports respond to competitors' price changes and the extent to which airports in EPA's engage in price wars is likely to be limited by the existence of multi-airport groups and a limited degree of autonomy over pricing. The three elements and the remaining 17 propositions used to measure MO in this study can be seen in figure 4.4.

As can be seen in figure 4.4, slight changes were made to the terminology used by Kohli et al. (1993) and this is in line with the recommendations by Harris (2001) who suggests that MO constructs should be adapted for different contexts. For instance, the terms 'business unit', 'customers', 'products or services', 'fundamental shifts', and 'periodically' have been replaced by more simple and relevant terminology such as 'airport', 'airlines', 'service or facilities', 'changes', and 'regularly'. In addition, references to 'departments' were replaced by references to 'staff' in order to reflect the fact that some airports in EPA's may be so small or flat structured that they do not have formal departments.

The extent to which respondents agree or disagree with each proposition was measured on a 5-point Likert scale with 'strongly agree', 'tend to agree', 'neither', 'tend to disagree' and

‘strongly disagree’ as the alternative choices³⁵. Some studies (e.g. Narver and Slater, 1990) have used a 7-point Likert scale however, most studies use 5-point Likert scales including the constructs of Kohli et al. (1993), Deshpandé et al. (1993) and Deshpandé and Farley (1998). According to Finn et al. (2000), respondents may be inclined to use the neutral category when they have no opinion rather than a neutral opinion. Therefore, respondents were provided with a ‘don’t know’ option in case they wanted to opt out from answering any of the propositions that may for example, not appear relevant to their particular airport or situation.

The MO variable was then created by averaging the scores for each of the propositions used, thus indicating the extent to which the airport is market-orientated. This was achieved by assigning a score to each response of 5 for ‘strongly agree’, 4 for ‘tend to agree’, 3 for ‘neither’, 2 for ‘tend to disagree’ and 1 for ‘strongly disagree’. -99 (a null value in SPSS) was assigned to any ‘don’t know’ responses. It should be noted that propositions 3, 4, 10, 13 and 15 are reverse statements³⁶ and were dealt with accordingly during the data entry phase (e.g. a score of 2 will be recorded as a score of 4). The variable that was created is called MKTOR.

The three elements of MKTOR (gathering market intelligence, sharing market intelligence and responding to market intelligence) were also constructed as individual variables so that the construct can be tested for convergent validity (e.g. see sub-section 5.3.2). The creation of the three variables was achieved in the same way as for the MKTOR variable (i.e. by averaging the scores for each of the propositions used for each element) and the variables

³⁵ According to Finn et al. (2000), a 5-point Likert scale is sufficient for most studies and should provide a balance between positive and negative categories (i.e. a 5-point Likert scale should provide two positive categories, one neutral category and two negative categories). In addition, Finn et al. (2000) suggest that an odd scale should be used when a direction of response is required (i.e. whether the respondent agrees or disagrees with a particular statement). However, when no direction is required, the neutral category can be dropped and an even number of categories can be used (i.e. on a 4-point Likert scale).

³⁶ According to Finn et al. (2000), a combination of positive and negative propositions should be used in order to reduce the potential for the ‘halo effect’, which can occur when a respondent recognises a pattern in the questioning and responds in a way that they think the interviewer wants them to respond. Reverse statements will be used on a number of occasions in the survey for this study.

that were created are called MIG (gathering market intelligence), MIS (sharing market intelligence), and MIR (responding to market intelligence).

Figure 4.4 Propositions used to measure MO

Gathering market intelligence (MIG) 1. We meet airlines at least annually to discuss their future needs 2. We conduct a lot of 'in-house' market research 3. We are slow to identify changes in the preferences of our airlines 4. We are slow to identify major changes in our industry (e.g. technology) 5. We regularly monitor the likely effect of changes in the business environment (e.g. travel trends & the economy) on our airlines
Sharing market intelligence (MIS) 6. Managers meet at least 4 times a year to discuss market trends & developments 7. Managers spend time discussing the future needs of our airlines 8. High levels of communication are maintained between managers and other staff 9. Staff at all levels are quick to find out when something important happens to one of our main airline customers 10. Managers tend to be slow in alerting other managers of important changes in the business environment
Responding to market intelligence (MIR) 11. We review service standards at least annually to ensure that they are in line with what our airlines expect 12. Managers meet at least 4 times a year to plan a response to changes taking place in our business environment 13. Even if we came up with a great marketing plan, we would probably be slow to implement it 14. When we find out that our airlines would like us to modify an aspect of our service or facilities, we make a determined effort to do so 15. For one reason or another, we tend to ignore changes in the needs of our airlines 16. The activities of different staff are well co-ordinated 17. We would respond quickly if a competitor targeted one of our airlines

4.3.1.2 Ownership

A measurement of ownership is required for H1, which states that:

H1. The more independently-owned the airport, the higher the level of MO.

The extent to which internal factors (e.g. senior management factors, interdepartmental dynamics and organisational systems) affect MO has been tested in previous studies (e.g. Jaworski and Kohli, 1993) and variables have been created using a series of propositions in a survey. However, as was mentioned in sub-section 2.3.3, this study uses an airport ownership variable in proxy of the internal factors.

In sub-section 2.3.3, three main types of airport ownership were identified for airports in EPA's: national; regional; and, independent (Pagliari, 2005b). The airport ownership variable was, therefore, captured in a trichotomy of national, regional and independent ownership status with the assumption that MO at airports will be progressively higher as ownership status becomes more independent. Advani (1998) tested differences in MO for airports that are privately-owned, expecting privatisation or not privately-owned. These categories of airport ownership were not used in this study because, as was mentioned in sub-section 2.3.3, the number of airports in EPA's that are privately-owned or expecting privatisation is very low.

Ownership details were sought from secondary records whilst defining the population and the results can be seen in Appendix D in the column labelled 'Owner'. Values were assigned to each type of ownership with 1 being airports that are nationally-owned, 2 being airports that are regionally-owned and 3 being airports that are independently-owned. The variable that was created is called OWNER.

4.3.1.3 Performance

A measurement of performance is required for H2, which states that:

H2. The greater the MO of an airport, the greater its performance.

A measurement of performance is also required for H3 through to H8 (which test the factors that moderate the relationship between MO and performance), H9 (which tests the

mediating effect of marketing innovations on the relationship between MO and performance), and H10 (which tests the moderating effect of environmental support on the relationship between marketing innovations and performance).

As was discussed in sub-section 2.3.4.1, measures of marketing performance are used for this study and include three key performance measures: the attraction of new routes; the growth of existing routes; and, the retention of existing routes. In line with previous studies (e.g. Matsuno and Mentzer, 2000), performance was measured in relation to competitors in a particular time period. However, due to the long lead times in the airport industry, a three-year period was used instead of the traditional one-year period. A three-year period has been used in previous studies (e.g. Ellis, 2005) and is normally used in industries that are slower moving. In addition, the term ‘similar or competing airports’ was used instead of just ‘competing airports’ in order to overcome potential confusion from airports that do not consider themselves as competing against others. The propositions used to measure performance can be seen in figure 4.5.

Figure 4.5 Propositions used to measure performance

<i>How has your airport performed during the last 3 years compared to similar or competing airports in terms of.....</i>
1. Attracting new routes
2. Growing existing routes (i.e. growth in passenger numbers on existing routes)
3. Retaining existing routes

As was mentioned in sub-section 2.3.4.1, this study uses subjective measures of performance (i.e. relative to competitors) instead of objective measures (i.e. absolute measures). This is due to reasons of confidentiality and the fact that some organisations do not like to release performance figures or may not even understand the performance figures that are being requested (i.e. because of cultural differences). It may also be as a result of the fact that some managers may not be aware of the absolute measures relating to their airport. This may be the case at airports that are part of a national or regional airport system, where performance data may be centrally stored and managed. An objective

performance measure relating to overall traffic growth (i.e. the overall increase in passenger numbers at an airport during a specific time period) could have been used and is readily available from secondary sources such as the national ministries or civil aviation authorities of each country. However, this would not take account of the effectiveness of an airport (i.e. relative to their competitors), which can be measured using subjective measures. Effectiveness could be measured according to the growth in market share of each airport. However, this information is not readily available to the author.

The extent to which respondents believe their airport has performed in each area was measured on a 5-point Likert scale with ‘much better’, ‘better’, ‘no different’, ‘worse’ and ‘much worse’ as the alternative choices. This scale has been used to measure performance in previous studies (e.g. Agarwal et al., 2003; Matar et al., 2004). Respondents were also provided with a ‘don’t know’ option in case they wanted to opt out from commenting on any of the performance measures. The variable was created by averaging the scores for each of the three performance measures and this was achieved by assigning a score to each response of 5 for ‘much better’, 4 for ‘better’, 3 for ‘no different’, 2 for ‘worse’ and 1 for ‘much worse’. -99 was assigned to any ‘don’t know’ responses. The variable that was created is called PERF.

4.3.1.4 Market turbulence

A measurement of market turbulence is required for H3, which states that:

- H3. The greater the market turbulence, the stronger the relationship between MO and airport performance.

As was mentioned in sub-section 3.1.3, market turbulence at airports is characterised by changes in airline decisions in terms of whether or not to continue operating a particular route, frequency or seat capacity. It can also be characterised by a high turnover of airline

customers. Therefore, a proposition was developed for each characteristic of market turbulence and the propositions used can be seen in figure 4.6.

Figure 4.6 Propositions used to measure market turbulence

- | |
|---|
| <ol style="list-style-type: none">1. Airlines change or cancel routes, frequency or seat capacity on an annual basis2. We cater to the same airlines as we did 3 years ago |
|---|

The first proposition uses a one-year period because the market would not be particularly turbulent if airlines changed or cancelled routes, frequency or seat capacity every three years - this would be expected even in non-turbulent markets. A three-year duration was used for the second proposition because it is a reverse proposition that seeks to investigate whether airports have served the same airline customers over a long period of time, which would suggest that the market is not particularly turbulent. In this instance, it made sense to use a longer time period.

Market turbulence can be characterised by other factors. For example, some studies have included propositions relating to price sensitivity (i.e. customers' response to changes in price) when testing for market turbulence (e.g. Jaworski and Kohli, 1993; Advani, 1998). Propositions relating to price sensitivity were not used in this study because as was mentioned in sub-section 4.3.1.1, the extent to which airports in EPA's engage in price wars is likely to be limited by the existence of multi-airport groups and a limited degree of autonomy over pricing.

The extent to which respondents agree or disagree with each proposition was measured on a 5-point Likert scale with 'strongly agree', 'tend to agree', 'neither', 'tend to disagree' and 'strongly disagree' as the alternative choices. This scale has been used by other studies when testing the effect of market turbulence on MO or performance (e.g. Jaworski and Kohli, 1993; Advani, 1998; Kim, 2003). Respondents were also provided with a 'don't know' option in case they wanted to opt out from answering any of the propositions.

The market turbulence variable was created by averaging the scores for each of the propositions used, thus indicating the extent to which the airport operates in a turbulent market place. This was achieved by assigning a score to each response of 5 for 'strongly agree', 4 for 'tend to agree', 3 for 'neither', 2 for 'tend to disagree' and 1 for 'strongly disagree'. -99 was assigned to any 'don't know' responses. It should be noted that proposition 2 is a reverse statement and was dealt with accordingly during the data entry phase. The variable that was created is called TURB.

4.3.1.5 Competitive intensity

A measurement of competitive intensity is required for H4, which states that:

- H4. The greater the competitive intensity, the stronger the relationship between MO and airport performance.

As was mentioned in sub-section 3.1.3, competitive intensity at airports is characterised by an environment in which airports compete for airlines and in which airports that fail to satisfy their airlines will lose out to competing airports. Therefore, a proposition was developed for each characteristic of competitive intensity and the propositions used can be seen in figure 4.7.

Figure 4.7 Propositions used to measure competitive intensity

- | |
|---|
| <ol style="list-style-type: none">1. We compete fiercely with other airports for airlines2. We will lose out to competitors if we fail to satisfy our airlines |
|---|

Competitive intensity can be characterised by other factors. For example, some studies have included propositions relating to promotion wars and price competition (e.g. Jaworski and Kohli, 1993) when testing for competitive intensity but as was mentioned in sub-section 4.3.1.1, the extent to which airports in EPA's engage in price wars (and promotion

wars) is likely to be limited by the existence of multi-airport groups and a limited degree of autonomy over pricing (and promotion).

In his study on airport MO, Advani (1998) included propositions relating to different types of competition such as the extent to which airports compete for passengers, airline transfer traffic and cargo traffic. However, this study is only concerned with issues relating to passenger airlines and not the passengers themselves, types of traffic or cargo. This is because, as has already been mentioned in 4.3.1.1, the focus of this study is on the relationship between airports and their airline customers.

The extent to which respondents agree or disagree with each proposition was measured on a 5-point Likert scale with 'strongly agree', 'tend to agree', 'neither', 'tend to disagree' and 'strongly disagree' as the alternative choices. This scale has been used by other studies when testing the moderating effect of competitive intensity on MO or performance (e.g. Jaworski and Kohli, 1993; Advani, 1998; Kim, 2003). Respondents were provided with a 'don't know' option in case they wanted to opt out from answering any of the propositions.

The competitive intensity variable was created by averaging the scores for each of the propositions used, thus indicating the extent to which the airport experiences intense competition. This was achieved by assigning a score to each response of 5 for 'strongly agree', 4 for 'tend to agree', 3 for 'neither', 2 for 'tend to disagree' and 1 for 'strongly disagree'. -99 was assigned to any 'don't know' responses. The variable that was created is called COMP.

4.3.1.6 Passenger service focus (public service focus)

A measurement of the dominance of public services is required for H5, which states that:

- H5. The greater the dominance of public services, the weaker the relationship between MO and airport performance.

The question used to measure the dominance of public services can be seen in figure 4.8.

Figure 4.8 Question used to measure the dominance of public services

Which of the following types of passenger service has provided the majority of passengers at your airport during the last 3 years?

1. Subsidised passenger services (e.g. Public Service Obligations: PSO's)
2. Commercial passenger services

Subsidised passenger services were used as a means of measuring the public service focus of an airport because, as has been mentioned in sub-section 2.2.6, subsidised passenger services (e.g. PSO's) attempt to compensate for the performance of the obligation to operate routes that are not commercially viable but are essential in maintaining a public service for the local community. The alternative is that the airport provides commercial passenger services that may (or may not) be commercially viable. The latter are the services that are expected to be most affected by market forces and are therefore expected to encourage a stronger relationship between MO and airport performance.

Obviously some airports may provide a combination of subsidised and commercial passenger services and the provision of different services may change over time. Therefore, airports were asked to state which of the passenger services has provided the majority of passengers at the airport during the last three years.

Answers 1 and 2 had a box next to them in which respondents were required to place an 'X' in only one. The variable was created according to the box that was marked and dichotomises between 'public service focus' (for those that marked the box for answer 1) and 'commercial service focus' (for those that marked the box for answer 2). In terms of data input, the former was given a value of 1 and the latter was given a value of 2. The variable that was created is called SERFOCUS.

4.3.1.7 Air service focus (leisure focus)

The measurement of a focus on leisure markets is required for H6, which states that:

- H6. The greater the focus on leisure markets, the stronger the relationship between MO and airport performance.

The question used to measure the focus on leisure markets can be seen in figure 4.9.

Figure 4.9 Question used to measure the focus on leisure markets

Which of the following types of passenger service has your airport been most focused on developing over the last 3 years?

1. Scheduled services operated by 'full-service' carriers (e.g. traditional mainline or regional carriers)
2. Scheduled services operated by 'low-cost' carriers
3. Charter services that support inbound or outbound tourism

The different types of passenger service follow on from Kealey (2004) who distinguishes between mainline, full service carriers and leisure carriers (e.g. charter, low-cost or niche regional carriers) (e.g. see sub-section 2.2.5). The only slight difference between the distinction made by Kealey (2004) and the categories used in this study is that regional carriers were combined with the category 'scheduled services operated by full-service carriers'. This was because traditional regional carriers are likely to come under that category whilst the niche regional carriers that Kealey (2004) refers to are likely to come under the category of 'scheduled services operated by low-cost carriers'. A clear example of this is with airlines such as Norwegian in Norway and FlyMe in Sweden. Both of these airlines used to provide regional passenger services in their respective countries. However, since deregulation these airlines have adopted a low-cost philosophy and now offer scheduled low-cost services in both domestic and international markets. The three categories (traditional scheduled, scheduled low-cost and charter) also reflect the categories provided by Graham (2003a) in table 2.10.

Answers 1 through to 3 had a box next to them in which respondents were required to place an 'X' in only one. Obviously some airports focus on developing a combination of types of passenger service and the provision of different passenger services may change over time. Therefore, airports were asked to state which of the types of passenger service they have been most focused on developing over the last three years. If the airport has multiple priorities, respondents were asked to rank the priorities with 1 being the most important. This was a high-risk question because it is possible that respondents will not understand how to respond or may respond incorrectly. Any wrong or invalid responses were followed up with an email or telephone call to the respondent.

The variable was created according to the box that was marked and dichotomises between 'traditional scheduled services' (for those that marked the box for answer 1) and 'leisure services' (for those that marked the box for answers 2 and 3). In terms of data input, the former was given a value of 1 and the latter was given a value of 2. The variable that was created is called AIRFOCUS.

4.3.1.8 Market growth (demand)

A measurement of market growth is required for H7, which states that:

- H7. The greater the market growth, the greater the relationship between MO and airport performance.

As was mentioned in sub-section 3.1.3, market growth at airports is characterised by strong market growth or potential. Therefore, a proposition was developed for each characteristic of market growth and the propositions used can be seen in figure 4.10.

The first proposition refers to potential demand and a time period was not assigned. However, the second proposition refers to market growth and a time period was assigned. This is because market growth could change over time and the most recent growth (i.e.

during the last year) is of particular interest to this study. A figure of over 5% growth was assigned in order to provide a measurable degree of growth.

Figure 4.10 Propositions used to measure market growth

- | |
|---|
| <ol style="list-style-type: none">1. Potential demand for air services in the region offers significant opportunities2. The market for air services in our region grew rapidly last year (e.g. by over 5%) |
|---|

The extent to which respondents agree or disagree with each proposition was measured on a 5-point Likert scale with ‘strongly agree’, ‘tend to agree’, ‘neither’, ‘tend to disagree’ and ‘strongly disagree’ as the alternative choices. This scale has been used by other studies when testing the moderating effect of market growth on MO or performance (e.g. Kim, 2003). Respondents were also provided with a ‘don’t know’ option in case they wanted to opt out from answering any of the propositions.

The market growth variable was created by averaging the scores for each of the propositions used, thus indicating the extent to which the airport experiences market growth. This was achieved by assigning a score to each response of 5 for ‘strongly agree’, 4 for ‘tend to agree’, 3 for ‘neither’, 2 for ‘tend to disagree’ and 1 for ‘strongly disagree’. - 99 was assigned to any ‘don’t know’ responses. The variable that was created is called DEMAND.

4.3.1.9 Airport constraints (supply)

A measurement of the extent to which an airport is constrained is required for H8, which states that:

- H8. The more constrained the airport, the weaker the relationship between MO and airport performance.

As was mentioned in sub-section 3.1.3, constraints at airports are characterised by constraints in infrastructure and constraints in operating conditions. Therefore, a proposition was developed for each characteristic of airport constraint and the propositions used can be seen in figure 4.11.

Figure 4.11 Propositions used to measure airport constraints

- | |
|---|
| <ol style="list-style-type: none">1. Future growth is constrained by infrastructure (e.g. runway, lighting, terminal)2. Future growth is constrained by operating conditions (e.g. limits, obstacles, weather) |
|---|

The extent to which respondents agree or disagree with each proposition was measured on a 5-point Likert scale with ‘strongly agree’, ‘tend to agree’, ‘neither’, ‘tend to disagree’ and ‘strongly disagree’ as the alternative choices. This scale was consistent with the scale used for other variables (e.g. TURB, COMP and DEMAND). Respondents were also provided with a ‘don’t know’ option in case they wanted to opt out from answering any of the propositions.

The airport constraints variable was created by averaging the scores for each of the propositions used, thus indicating the extent to which the airport is constrained. This was achieved by assigning a score to each response of 5 for ‘strongly agree’, 4 for ‘tend to agree’, 3 for ‘neither’, 2 for ‘tend to disagree’ and 1 for ‘strongly disagree’. -99 was assigned to any ‘don’t know’ responses. The variable that was created is called SUPPLY, which is contrary to constraint (i.e. an airport with ample supply is not constrained). Therefore, the two propositions used to measure airport constraint were reversed during the data entry phase.

4.3.1.10 Marketing innovations

A measurement of the level of marketing innovations is required for H9, which states that:

- H9. The greater the level of airport marketing innovations, the stronger the relationship between MO and airport performance.

As was mentioned in sub-section 2.3.5, marketing innovations can be implemented by airports within the context of the airport marketing mix). Therefore, a proposition was developed for each aspect of the airport services marketing mix and the propositions used can be seen in figure 4.12.

Figure 4.12 Propositions used to measure marketing innovations

To what extent has your airport developed new ways to market itself to airlines during the last 3 years in terms of.....

1. Modifying facilities or services (e.g. to reduce costs or improve efficiency, access, or flexibility for airlines)
2. Promoting a recognised airport brand (e.g. a distinctive name, logo, design or symbol)
3. Targeting airlines for new routes (directly or at exhibitions such as 'Routes')
4. Providing and presenting airlines with market research to prove market potential
5. Lobbying for the removal of obstacles to further development (e.g. ban on night flights)
6. Using strategic marketing partnerships (e.g. collaborations with local business or tourism)
7. Offering flexibility on pricing (e.g. discounts or incentives)
8. Developing joint advertising or promotional campaigns (e.g. offering marketing support)
9. Providing travel planning support to passengers (e.g. through an airport website)
10. Improving management processes (e.g. by appointing a member of staff to act as a point of contact and provide assistance to new or expanding airlines)

The measurement of the level of marketing innovations was based upon the extent to which respondents believe their airport has developed new ways to market itself to airlines during the last three years in a number of areas relating to the airport marketing mix. A three-year period was used so that it corresponded to the time period used to measure airport performance (e.g. see sub-section 4.3.1.3). 10 propositions were used and each of the propositions represents a different aspect of the airport marketing mix, which has been discussed in sub-section 2.3.5. The propositions were measured on a 4-point Likert scale with 'great extent', 'some extent', 'very little', and 'not at all' as the alternative choices.

Respondents were also provided with a ‘don’t know’ option in case they wanted to opt out from answering any of the propositions.

The marketing innovations variable was created by averaging the scores for each of the 10 marketing innovations. This was achieved by assigning a score to each response of 4 for ‘great extent’, 3 for ‘some extent’, 2 for ‘very little’ and 1 for ‘not at all’. -99 was assigned to any ‘don’t know’ responses. A 4-point Likert scale was used for this variable instead of the 5-point Likert scale that was used in other scales in the survey. This is because there cannot be a central category such as ‘neither’. Instead, airports have either used individual marketing innovations (and to varying degrees of use) or they have not. The variable that was created is called INNO.

4.3.1.11 Environmental support

A measurement of the level of environmental support is required for H10, which states that:

H10. Environmental support strengthens the relationship between marketing innovations and airport performance.

As was mentioned in sub-section 3.1.4, environmental and market-level factors such as TURB, COMP, DEMAND and SUPPLY can be combined to create a measure of environmental support. As was mentioned in sub-section 2.3.6, environmental support is characterised by market turbulence and competitive intensity and limited opportunities for growth or diversification. In order to create a variable for environmental support, the scores were taken for eight propositions (the two propositions used to measure market turbulence, the two propositions used to measure competitive intensity, the two propositions used to measure market growth and the two propositions used to measure airport constraints). The second proposition used to measure market turbulence was treated as a reverse statement and so were the two propositions used to measure market growth. The first proposition used to measure market turbulence, the two propositions used to

measure competitive intensity, and the two propositions used to measure airport constraints were treated as normal. The variable that was created is called ENV.

4.3.1.12 Airport name & controlling variables

Although not required as a variable, a further item was included in the survey and was used to record the name of the airport. The item used can be seen in figure 4.13.

Figure 4.13 Item used to record the name of the airport

State the name of your airport.

If you work for a company that manages several airports, please indicate which one airport you are most familiar with and answer the survey with reference to **this airport**.

Respondents were provided with a box in which to enter the name of the airport that they were completing the survey for.

Although individual airports will not be identified in the analysis, it was important to record which airports had taken part in the survey. In addition, some airport managers are responsible for a number of airports, so it was important to record the name of the airport for which the survey had been completed.

Controlling variables have been used in previous MO studies. For example, Advani (1998) asks for the job title of the respondent so that the survey can test for any marketing job-related bias and senior management job-related bias that may exist. This study did not intend to test for such bias as the airports in the sample tend to be very small and as will be mentioned in sub-section 4.3.3, the survey was sent directly to airport managers. Besides, Advani (1998) found no evidence of marketing job-related bias or senior management job-related bias in his study on airport MO.

4.3.1.13 Summary of the variables

Table 4.7 provides a summary of the 11 variables that needed to be constructed for this study. The table lists each variable, its label, the source of data, the scale used to define the variable, how the value was determined and the type of data produced.

Table 4.7 Summary of variables

Variable	Label	Source of data	Scale	Value	Data
Market orientation	MKTOR	Survey-17 propositions	5-point Likert	Average	Ordinal
Ownership	OWNER	Secondary Records	3 categories	Category	Nominal
Performance	PERF	Survey-3 propositions	5-point Likert	Average	Ordinal
Market turbulence	TURB	Survey-2 propositions	5-point Likert	Average	Ordinal
Competitive intensity	COMP	Survey-2 propositions	5-point Likert	Average	Ordinal
Passenger service focus	SERFOCUS	Survey-1 question	2 categories	Category	Nominal
Air service focus	AIRFOCUS	Survey-1 question	2 categories	Category	Nominal
Market growth	DEMAND	Survey-2 propositions	5-point Likert	Average	Ordinal
Constraints	SUPPLY	Survey-2 propositions	5-point Likert	Average	Ordinal
Marketing innovations	INNO	Survey-10 propositions	4-point Likert	Average	Ordinal
Environmental support	ENV	Survey-8 propositions	5-point Likert	Average	Ordinal

4.3.2 Construction of the survey

After constructing the variables, it was possible to construct the survey. The survey consists of one cover page and three pages that form the main part of the survey.

The cover page was designed to be short and concise and to include a number of important aspects. Firstly, the cover page illustrates the organisations with which the survey is affiliated (Cranfield University as the awarding institution for the PhD and London Metropolitan University as the sponsors of the PhD) thus adding credibility to the survey. Gaining support from ACI-Europe was also considered. However, ACI-Europe does not represent all of the airports in the population and it was felt that airports that are not

members of ACI-Europe might not want to participate. In addition, it was felt that airports might be suspicious of a survey that is being conducted by an industry association (as opposed to academic institutions).

Secondly, the cover page provides the title of the survey, which is: ‘Survey on airport market orientation’. This title is short and concise and although the title ‘Survey on airport marketing’ would be more widely understood, the survey is not just about marketing and it is felt that some airport managers may reject the survey on the basis that they are not experts in the field of airport marketing.

Thirdly, the cover page provides a box of text that indicates the month and year in which the survey is being delivered; the name of the airport manager, if known (otherwise, the heading ‘Dear sir/madam’ is used); an introduction to the study and its scope, and a statement about anonymity and the sharing of results; guidance on who should complete the survey and how the survey can be completed and returned, including the deadline for responses; and, contact details in case of any problems, a signing off from the author, and the name and address/contact details of the author.

The main part of the survey consists of five sections (A-E) and 10 blocks of items, questions and propositions (1-10). Each block contains the items, questions or propositions used to create the variables mentioned in sub-section 4.3.1 and sections are used to group similar blocks together. The sections are structured so that the easier and more interesting aspects are covered at the start and the end of the survey whilst the tougher and less interesting aspects are covered in the middle. The propositions in sections B through to E are presented in a similar way in order to reduce the potential for error. An explanation of how to complete sections B through to E and the scope of the sections is provided before the start of section B. The structure and presentation aims to reduce the potential for boredom or error and increase the potential for participation. The survey finishes with a thank you and a reminder of the return address.

The survey is written in English, as this is the international language of aviation and the home language of the author. Ideally, the survey would have been translated into each of the languages of the population airports. However, this study is not funded and therefore, financial resources for translating the survey were not available.

According to Veal (1997), surveys should be drafted and tested before a final version is designed (i.e. the survey should be pre-tested). A draft version of the survey was developed and the items, questions and propositions used were discussed with airport managers at the 4th Forum on Air Transport in Remoter Regions (24-26 May 2005 in Stockholm, Sweden)³⁷ and with academics at the 14th Nordic Symposium in Tourism and Hospitality Research (22-25 September 2005 in Akureyri, Iceland)³⁸. Two rounds of consultation then followed with the draft survey being sent to academics and experts from the field of airport management and/or MO. The name, job and company of the individuals that responded are provided in table 4.8 for the first round of consultation and table 4.9 for the second round of consultation. Finally, the survey was tested on nine airport managers and the name, job and company of the individuals that responded are provided in table 4.10.

The consultation rounds provided feedback on two draft versions of the survey. The two draft versions of the survey can be seen in Appendix E1 and Appendix E2 whilst a list of comments from the two consultation rounds is provided in Appendix F1 and Appendix F2³⁹. The final version of the survey is provided in Appendix G and the survey in Appendix G was sent to the nine airports listed in table 4.10 as a pilot survey. No issues were raised from the pilot survey and comments from the nine participants can be seen in Appendix F3⁴⁰.

³⁷ Inglis Lyon (Managing Director, Highlands and Islands Airports Limited) and Alex Johnson (Commercial and Marketing Manager, Highlands and Islands Airports Limited) were particularly helpful.

³⁸ Claude Péloquin (Researcher in Tourism at the University of Quebec, Montreal, Canada) and Njall Fridbertsson (Student in Tourism at the University of Akureyri and Employee of Akureyri Airport, Iceland) were particularly helpful.

³⁹ The names of respondents are not included in Appendix F1 and F2 in order to maintain anonymity.

⁴⁰ The names of respondents are not included in Appendix F3 in order to maintain anonymity.

Table 4.8 Survey consultation responses: round 1 (25th September 2005)

Name	Job	Company
Kenichi Matsuno	Associate Professor of Marketing	Marketing Division, Babson College, Babson Park, USA
John Narver	Professor Emeritus of Marketing	Marketing and International Business Department, University of Washington Business School, Seattle, USA
Christine Ennew	Dean of the Faculty of Law & Social Sciences, Professor of Marketing	Faculty of Law & Social Sciences, Nottingham University Business School, Nottingham, UK
Roger Bennett	Director Centre for Research in Marketing, Professor of Marketing	Centre for Research in Marketing, Business & Service Sector Management, London Metropolitan University, London, UK
Jyh-Jeng Wu	Not stated	Graduate School of Business Administration, Providence University, Taichung, Taiwan
Ajay Kohli	Isaac Stiles Hopkins Professor of Marketing	Goizueta Business School, Emory University, Atlanta, USA
Sean Barrett	Senior Lecturer Economics	Department of Economics, Trinity College, University of Dublin, Dublin, UK
Jane-Neal Smith	Senior Lecturer Aviation Management & Operations	Centre for Civil Aviation, Business & Service Sector Management, London Metropolitan University, London, UK
Paul Hogan	Senior Lecturer Aviation Management & Operations	Centre for Civil Aviation, Business & Service Sector Management, London Metropolitan University, London, UK
Anne Graham	Senior Lecturer Tourism	School of Architecture & the Built Environment, University of Westminster, London, UK
Romano Pagliari	Lecturer Air Transport	Department of Air Transport, School of Engineering, Cranfield University, Cranfield, UK

Table 4.9 Survey consultation responses: round 2 (25th October 2005)

Name	Job	Company
Stephen Shaw	Managing Director	Stephen Shaw & Associates, Aviation Consultants, Chinnor, UK
Nicholas Coleman	Senior Lecturer Aviation Management & Operations	Centre for Civil Aviation, Business & Service Sector Management, London Metropolitan University, London, UK
David Jarach	Professor of Service Management & Marketing	SDA Bocconi Graduate School of Business, Bocconi University, Milan, Italy
Svein Bråthen	Associate Professor & Head of Transport Research Unit	Norwegian School of Logistics, Molde University College & Molde Research Institute, Molde, Norway
Øystein Jensen	Associate Professor in Marketing & Tourism	Norwegian School of Hotel Management Stavanger University, Stavanger, Norway
Curtis Swanson	Chair of Faculty	College of Aviation, Western Michigan University, Kalamazoo, USA

Table 4.10 Pilot survey (8th November 2005)

Name	Job	Company
Hrönn Ingólfssdóttir	Director of Marketing	Keflavik Airport
Alex Johnson	Commercial & Marketing Manager	Highlands and Islands Airports Limited
Bernard Lavelle	Deputy Director Business Development	London City Airport
Timo Järvelä	Marketing Manager, Airline Relations	Helsinki Vantaa Airport
Josep Barreiro Miró	Not stated	Barcelona Airport
João R. Corvelo	Not stated	Horta Airport
Mario Eland	Marketing Director	EuroAirport Basel-Mulhouse-Freiburg
Knut Stabæk	Manager Traffic Development	Oslo Gardermoen Airport
Mark Evenden	Aviation Marketing Manager	Dublin Airport

By comparing the first draft version of the survey in Appendix E1 with the final version of the survey in Appendix G, it can be seen that a number of changes were made. Most of the changes were guided by literature reviewed by the author (i.e. in section 2.3) and the rationale for using certain questions and propositions is provided in sub-section 4.3.1. However, feedback from delegates at the two international conferences and comments from the two consultation rounds also led to a number of changes including:

- slight changes in terminology (e.g. replacing periodically with more precise terms such as annually);
- the reduction of the number of propositions (i.e. by using just two propositions to create each variable in 'The Airport Environment' section of the survey) in order to make the survey shorter and more precise;
- the removal of the question on the job of the respondent on the basis that it is too personal and may be open to misinterpretation;
- the refinement of the question on airport strategy so that it allows for a dichotomy between public versus commercial services and traditional versus leisure services;
- staying closer to the Kohli et al. (1993) MO construct, but replacing any American terminology with European terminology and making it more relevant to the airport industry. Using an adapted version of the Kohli et al. (1993) MO construct means that the findings of this study can be compared to previous MO studies and can investigate the application of the construct to the airport industry;
- the use of ownership as an antecedent to MO instead of using propositions to create a number of variables in 'The Airport Organisation' section of the survey;
- the creation of a marketing innovations variable in order to measure how MO affects performance instead of just when MO affects performance, which was the focus of the initial version of the survey; and,
- the use of measures of marketing performance instead of financial performance as airport managers may not be aware of the financial performance of their airport and/or accounting procedures may vary for airports.

4.3.3 Delivering the survey

The final version of the survey was sent directly to airport managers by email as an email attachment and in order to maximise flexibility, respondents were able to complete the survey by computer and return it by email or they could print it off and return it by post or by fax. Although the survey has its own introductory cover page, a short email was used to introduce the survey and a copy of the text used in the email is provided in figure 4.14.

Figure 4.14 Email used to introduce the survey

Dear [name] I am conducting research on the market orientation of airports in Europe's peripheral areas. Please could you complete the attached survey and send it back to me by email, post or fax. The survey has been sent to 217 airports in 17 different countries and airport participation is crucial to the success of the survey. Thank you for your time and assistance. Kind regards Nigel
--

A hard-copy version of the survey was also prepared in colour and on four single sided sheets of A4. The hard-copy version was sent to any airports for which email addresses were not found or for airports that requested a hard-copy version of the survey to complete. The hard-copy version of the survey could have been produced on one sheet of A3 paper. However, this would have meant that respondents wanting to return the survey by fax would have needed to photocopy individual pages in order to get it through the fax machine.

The first mailing of the survey took place on 17th November 2005 (with a return date of 17th December 2005). Two subsequent mailings took place in 2006. The first was on 17th February 2006 (with a return date of 17th March 2006) and the second was on 17th March

2006 (with a return date of 17th April 2006). Dates took account of national holidays in Europe (e.g. Christmas and Easter) and airports were provided with one month in which to respond. A final cut-off point of 1st May was used to allow for any late responses and/or postal delays.

In order to provide representative findings, the desired response rate for the survey was 40%. With a population of 217 airports, 86 usable surveys would be needed in order to achieve a response rate of 40%. A 40% response rate (or thereabouts) has been achieved by previous MO studies that have adopted a similar research convention (i.e. a survey). Previous studies include Lee and Tsai (2005) and Advani (1998) with a 42% response rate; Tuominen et al. (2004) with a 41% response rate; and, Agarwal et al. (2003) and Matsuno and Mentzer (2000) with a 39% response rate.

4.4 Data analysis

Responses to the survey and secondary records for each respondent were entered into SPSS according to the procedures described in sub-section 4.3.1. The data was then analysed in four stages: sample characteristics; descriptive statistics; reliability and validity testing; and, hypothesis testing. This section will introduce the methods of data analysis used for this study. However, more discussion on the methods and the rationale for selecting them is provided, along with the findings, in Chapter 5.

Sample characteristics were investigated according to the overall response rate to the survey and the potential for bias amongst responses to the survey. Most of this analysis was fairly descriptive, comparing the number of survey responses to the population. However, a number of Independent Samples T-tests were used to compare survey responses according to method of response (e.g. computer versus postal responses), timing of response (e.g. early versus late responses), and job of respondent (e.g. responses from marketing staff versus non-marketing staff).

Descriptive statistics were used to summarise the data generated by the survey in terms of the distribution of responses for each variable and the relationships between variables. The distribution of responses for each independent variable was summarised using a simple bar chart and a frequency table whilst the distribution of responses for variables to be used as dependent variables in this study were summarised using histograms. Relationships between variables were summarised using Spearman's Rho Correlation analysis.

Reliability and validity testing focused on the variables used as dependent variables in this study. Reliability testing measures the internal consistency of each variable and investigates whether each individual proposition that is used to create the variable is measuring the same aspect. This was achieved using Cronbach's Coefficient Alpha. Validity testing was used to measure the convergent validity of the three elements of the MO construct (MIG, MIS and MIR) by measuring the extent to which the three elements converge on a common construct. This was achieved using Spearman's Rho Correlation analysis.

The hypothesis testing aims to answer the research questions of this study by testing their respective hypotheses. The first research question and hypothesis (e.g. see sub-section 3.1.1) is concerned with the effect that ownership has on MO. Basic relationships between MO and airport ownership were investigated using cross-tabulations and box-plot analysis (i.e. for MKTOR versus OWNER). However, the hypothesis was tested using an Independent Samples T-test that investigated whether mean levels of MKTOR are significantly different for nationally-owned airports versus regionally-owned airports versus independently-owned airports.

The second research question and hypothesis (e.g. see sub-section 3.1.2) is concerned with the direct effect of MO on performance. The relationship between MO and performance was investigated using cross-tabulations and Spearman's Rho Correlation analysis (i.e. for MKTOR versus PERF). However, the hypothesis was tested using a Stepwise Regression

analysis that investigates the effect of MKTOR on PERF whilst controlling for environmental and market-level factors (i.e. TURB, COMP, DEMAND and SUPPLY).

The third research question and hypotheses (e.g. see sub-section 3.1.3) are concerned with when MO has an effect on performance and the six individual hypotheses (H3-H8) investigate the effect of different moderating factors on the relationship between MO and performance. The moderated effect of MO on performance was investigated using a series of Two-Way ANOVA's (one for each of the moderating factors). Two-Way ANOVA's are able to investigate the significance of the combined effect of an independent variable (e.g. MKTOR) and a moderator (e.g. TURB) on a dependent variable (e.g. PERF). The nature of the relationship between each variable was then illustrated using Simple-slope analysis.

The fourth research question and hypothesis (e.g. see sub-section 3.1.4) is concerned with how MO affects performance and proposes that MO enhances performance because it makes airports more innovative in their approach to marketing. This is known as the mediated effect of MO on performance and was investigated using a series of regression analyses that test whether: the independent variable (MKTOR) significantly predicts the dependent variable (PERF); the independent variable (MKTOR) significantly predicts the mediator (INNO); and, the mediator (INNO) significantly predicts the dependent variable (PERF) after controlling for the independent variable (MKTOR), the effect of which must be reduced to close to zero.

A stronger test of mediation is provided when the indirect effect of the independent variable on the dependent variable via the mediator is significantly different from zero and this was investigated using the Sobel Test.

H10 is also mentioned in sub-section 3.1.4 and investigates the effect of environmental support on the relationship between marketing innovations and performance. This is a moderating effect and was therefore investigated using a Two-Way ANOVA.

A summary of the methods used to test each of the hypotheses in this study is provided in table 4.11.

Table 4.11 Summary of methods used to test each hypothesis

Hypothesis	Method	Variables
H1	Independent Samples T-test	Dependent variable: MKTOR Independent variable: OWNER
H2	Stepwise Regression analysis	Dependent variable: PERF Independent variable: MKTOR Control variables: TURB, COMP, DEMAND, SUPPLY
H3	Two-Way ANOVA; Simple-slope analysis	Dependent variable: PERF Independent variable: MKTOR Moderator: TURB
H4	Two-Way ANOVA; Simple-slope analysis	Dependent variable: PERF Independent variable: MKTOR Moderator: COMP
H5	Two-Way ANOVA; Simple-slope analysis	Dependent variable: PERF Independent variable: MKTOR Moderator: SERFOCUS
H6	Two-Way ANOVA; Simple-slope analysis	Dependent variable: PERF Independent variable: MKTOR Moderator: AIRFOCUS
H7	Two-Way ANOVA; Simple-slope analysis	Dependent variable: PERF Independent variable: MKTOR Moderator: DEMAND
H8	Two-Way ANOVA; Simple-slope analysis	Dependent variable: PERF Independent variable: MKTOR Moderator: SUPPLY
H9	Regression analysis; Sobel test	Dependent variable: PERF Independent variable: MKTOR Mediator: INNO
H10	Two-Way ANOVA; Simple-slope analysis	Dependent variable: PERF Independent variable: INNO Moderator: ENV

4.5 Chapter summary

Chapter 4 has described the background to this study from a methodological perspective. Four broad aspects are considered: research strategy (section 4.1); defining the population (section 4.2); the design and delivery of a survey to be used as the research strategy for this study (section 4.3); and, the methods that will be used to analyse the data in this study and investigate the research questions and hypotheses (section 4.4).

The first section (section 4.1) explains how this study aims to grasp the social dimensions and consequences of management behaviour and therefore belongs to the social sciences area of research. A number of classes of research and research strategies for the social sciences are considered and evidence suggests that the research strategy for this study should be implemented using a survey that is cost effective and has the ability to encompass a large population with relative ease. The survey is analytical because it seeks explanations for observed variations in given phenomena (e.g. perceived variations in MO).

The second section (section 4.2) defines the population for this study according to a spatial peripherality indicator and perceived degrees of remoteness (sparse populations, island regions and mountain areas). A total of 76 regions are identified as EPA's (excluding regions of Eastern Europe and Europe's outermost regions due to a lack of availability of data) and a population of 217 airports are identified as being located in EPA's (excluding 15 airports due to a lack of availability of data or because they fail to meet the criteria of the TEN-T categories).

The third section (section 4.3) details how the survey was designed and delivered. 11 variables were constructed, mainly using propositions measured by 5-point Likert scales. The survey was constructed in colour and consists of four pages (one cover page and three pages consisting of one item, two questions and 38 propositions). The survey was pre-tested on academics and industry experts at two international conferences and a further 17 academics and industry experts were consulted and provided feedback on the survey by

email. The survey was then piloted on nine airports. A final version of the survey was emailed to airport managers as an email attachment on 17th November 2005 and two repeat mailings took place on 17th February 2006 and 17th March 2006. A hard-copy version of the survey was sent by post to airport managers for whom an email address was not found. Airport managers were able to return the survey by email, post or fax, and the target response rate was set at 40%.

The fourth section (section 4.4) introduces the methods that were used to analyse the data in this study and investigate the research questions and hypotheses. Four stages of data analysis are introduced: sample characteristics; descriptive statistics; reliability and validity testing; and, hypothesis testing. A range of methods was employed to analyse the data including descriptive statistics (e.g. simple bar charts, frequency tables, cross-tabulations, histograms, and box-plots), inferential statistics (e.g. Independent Samples T-tests, Two-Way ANOVA's, and the Sobel Test), and bivariate and multivariate analysis (e.g. Spearman's Rho Correlation analysis, Stepwise Regression analysis and regression analysis). A summary of the methods used to test each of the hypotheses in this study is provided in table 4.11.

5. FINDINGS

The main objective of this chapter is to present the findings of the survey. In particular, this chapter aims to test the hypotheses and answer the research questions that were described in Chapter 3. This chapter also aims to investigate the sample characteristics, the distribution of responses and the reliability and validity of key variables. To this extent, the chapter consists of five main sections. The first section will investigate the sample characteristics including the response rate and non-response bias. The second section will provide descriptive statistics on the responses and will consider the distribution of responses for each variable and the relationship between each variable. The third section will test the reliability and validity of a number of key variables and will measure the internal consistency and convergent validity of the key variables. The fourth section will apply a range of statistical methods to test the hypotheses and answer the research questions that were described in Chapter 3. The fifth section will provide a summary of the chapter.

5.1 Sample characteristics

5.1.1 Response rate

A total of 86 surveys were completed and returned by airports and a full list of respondents can be seen in Appendix H. Each survey was completed in full and was used in this study. However, it is worth noting that 18 airports responded to one or more propositions with a ‘don’t know’ and that these responses were excluded from the analysis. It is also worth noting that the only question to be completed incorrectly was question three. The question asked respondents to identify which passenger service their airport has been most focused on developing over the last three years. Respondents had three choices and they had to place an ‘X’ in one box. However, if the airport has multiple priorities, they were able to rank the priorities. Seven respondents had placed an ‘X’ in more than one box, which meant that it was not possible to determine the main focus of their airport. This was

resolved by contacting the respondent by email and asking them to state the one main focus of their airport.

The population consists of 217 airports so a return of 86 usable surveys (an effective sample of 86 airports) results in a response rate of 40%. This meets the desired 40% response rate. In addition, 15 of the airports in the population have a manager that is responsible for another airport in the population and those managers were asked to complete the survey for only one of their airports. This means that the population was effectively reduced by 15 airports to 202 airports and if the 15 airports were excluded from the population, the response rate would increase to 43%.

The response rate of 40% is comparable to previous studies on MO that have adopted a similar research convention (i.e. surveys). Table 5.1 identifies response rates in previous studies on MO that have adopted a similar research convention. Many of these studies were listed in table 2.8.

Table 5.1 Response rates for previous studies on MO

Study	Industry/scope	Response rate
Narver and Slater (1990)	140 Western corporations (commodity and non-commodity)	81%
Advani (1998)	480 airports worldwide	42%
Han et al. (1998)	225 American banks	60%
Morgan and Strong (1998)	1,000 UK companies (various)	18%
Van Egeren and O'Connor (1998)	372 managers from 67 American service companies	78%
Matsuno and Mentzer (2000)	3,300 American manufacturing companies	39%
Cervera et al. (2001)	540 Spanish local governments	37%
Harris (2001)	210 UK retail companies	51%
Harris and Ogbonna (2001)	1,000 UK companies (various)	34%

Table 5.1 Response rates for previous studies on MO (continued)

Study	Industry/scope	Response rate
Gray et al. (2002)	329 New Zealand companies (goods and service companies)	Not stated
Perry and Shao (2002)	1,005 foreign subsidiaries of American-based advertising agencies	17%
Agarwal et al. (2003)	530 hotels worldwide	39%
Hooley et al. (2003)	6,581 Hungarian, Polish & Slovakian service companies	25%
Kim (2003)	307 Korean subsidiaries entering into North American markets (various)	20%
Pulendran et al. (2003)	505 Australian companies (various)	18%
Kaynak and Kara (2004)	300 Chinese companies (mainly banking, component and computer hardware manufacturing, consumer product manufacturing)	60%
Kyriakopoulos and Moorman (2004)	500 Dutch companies (food processing industry)	28%
Tse et al. (2004)	1,200 Chinese companies (various)	18%
Tuominen et al. (2004)	140 Finnish companies (metal, engineering and electrotechnical)	41%
Wu (2004)	600 Taiwanese companies (travel industry)	19%
Gainer and Padanyi (2005)	1,805 Canadian companies (social service, community support or arts organisations)	25%
Green et al. (2005)	4,189 American manufacturing companies	4%
Lai and Cheng (2005)	1,092 companies in Hong Kong (construction, service, manufacturing, and public utility)	29%
Lee and Tsai (2005)	230 Taiwanese companies (60 manufacturing, 40 service)	42%
Qu et al. (2005)	951 Chinese companies (hotels and travel services)	23%
Sin et al. (2005)	81 companies in Hong Kong (hotels)	84%

Although some of the studies listed in table 5.1 have very high response rates that are in excess of 75% (e.g. Narver and Slater, 1990; Van Egeren and O'Connor, 1998; Sin et al.,

2005), most of the studies have response rates of below 40%. This confirms that the response rate for this study is fairly good in comparison to previous studies.

The only previous study on airport MO was conducted by Advani (1998). As was mentioned in section 4.1, the study by Advani (1998) was based on a survey that was sent to managers of 480 ACI member airports worldwide and 201 airports returned useable surveys (a response rate of 42%). The response rate for this study is not too dissimilar and compares well to the slightly higher response rate gained by Advani (1998), especially when one considers that the survey used by Advani (1998) was delivered in both English and Spanish (the survey for this study was only delivered in English) and that this study was based on a population of relatively small airports that are located in EPA's (as opposed to larger airports worldwide).

The response rate for this study also compares well to other studies on European airports and other studies on the aviation industry in general. For instance, as was mentioned in section 4.1, York Aviation conducts a number of surveys on airports in Europe on behalf of ACI-Europe. A recent survey on the social and economic impact of airports (York Aviation, 2004) was sent to 204 ACI member airports in Europe. 41 airports returned the survey providing a response rate of 20%. In addition, Fry et al. (2004) conducted a survey on the use of performance measurement techniques by 200 of the world's largest airlines as ranked by Air Transport World in terms of total passengers carried for 2001. 43 airlines returned the survey providing a response rate of 22%.

Having considered the number of responses, it is important to test for any bias that may be present amongst respondents.

5.1.2 Bias testing

Bias testing was conducted in a number of categories including geographical bias, airport size bias, airport ownership bias and survey response bias. Bias testing is an important

means of identifying categories of responses or non-responses that may distort the effectiveness and applicability of the results.

5.1.2.1 Geographical bias

Table 5.2 lists the number of airports in the population according to country, the number of responses, and the response rate of the sample.

As can be seen from table 5.2, at least one response was provided from each country. This means that each country in this study is represented by at least one airport. The response rate from countries where only one or two airports are included in this study is very high (either 50% or 100%). This is a good thing as it means that representation from those countries is very high. However, it must be noted that the high response rates are simply a consequence of the small population.

Of the countries that have a larger number of airports in this study (e.g. Finland, France, Greece, Norway, Spain, Sweden, the British Isles, and to a lesser extent Iceland, Ireland and Italy), the sample appears to be biased towards Northern Europe (with the exception of Finland and Iceland). The particularly high response rates from Ireland and the British Isles are likely to reflect the fact that they are predominantly English speaking countries and the survey was only delivered in English. Response rates from airports in Southern/Mediterranean Europe (e.g. Spain, Italy, Greece and France) but also from parts of Northern Europe (e.g. Iceland and Finland) were relatively low and this is likely to reflect the fact that English is not so widely used and understood in those countries. If this study were not financially constrained, it would have been beneficial to have the survey translated into a number of languages.

Table 5.2 Sample characteristics by country

Country	Population	Responses	Response rate
Austria	2	1	50%
Cyprus	2	1	50%
Denmark*	2	1	50%
Finland	20	4	20%
France	10	2	20%
Germany	1	1	100%
Greece	34	10	29%
Iceland	7	2	29%
Ireland	9	7	78%
Italy	7	1	14%
Malta	1	1	100%
Norway+	43	19	44%
Portugal	1	1	100%
Spain#	15	5	33%
Sweden	41	17	41%
Switzerland	2	1	50%
British Isles^	20	12	60%
Total	217	86	40%

Key:

* = Includes Faroe Islands.

+ = 15 of the airports in the sample for Norway are managed by someone that manages another airport (i.e. the manager is responsible for two airports).

= Includes Gibraltar.

^ = Includes the UK, the Channel Islands and the Isle of Man.

5.1.2.2 Airport size bias

Table 5.3 lists the number of airports in the population according to airport size (i.e. traffic levels represented by the TEN-T category), the number of responses, and the response rate of the sample.

Table 5.3 Sample characteristics by airport size

TEN-T category	Population	Responses	Response rate
International	4	2	50%
Community	34	21	62%
Regional	179	63	35%
Total	217	86	40%

As can be seen from table 5.3, the sample suffers from non-response bias from smaller airports. For instance, the response rate for the smallest category of airports (regional) is 35% compared to a response rate of 50% and 62% for international and community airports respectively. Evidence of non-response bias from smaller airports is supported by previous airport studies that have used a similar research convention (e.g. Advani, 1998; York Aviation, 2004).

The impact of airport size (according to traffic) appears to be reflected by the impact of airport size (according to technical capabilities). For instance, table 5.4 lists the number of airports in the population by technical data, the number of responses, and the response rate of the sample.

As can be seen from table 5.4, response rates from airports that are better equipped in terms of technical capabilities are higher than those from airports with limited technical capabilities. For instance, airports with customs facilities (full-time, part-time or on request) have higher response rates than those with no customs facilities; and, airports that have Instrument Flight Rules have higher response rates than those that do not. This means that in addition to suffering from non-response bias from smaller airports, the sample also suffers from non-response bias from airports with limited technical capabilities.

Table 5.4 Sample characteristics by technical data

Technical data	Population	Responses	Response rate
Runway length			
Under 800m	4	2	50%
800-1199m	30	6	20%
1200-1799m	38	14	37%
1800-2499m	83	41	49%
2500m and above	62	23	37%
Customs			
Yes	61	26	43%
PTO*	16	8	50%
O/R+	71	35	49%
No	69	17	25%
IFR#			
Yes	200	82	41%
No	17	4	24%

Key:

* = PTO: part-time only.

+ = O/R: on request.

= IFR: Instrument Flight Rules⁴¹.

5.1.2.3 Airport ownership bias

Table 5.5 lists the number of airports in the population according to airport ownership, the number of responses, and the response rate of the sample.

It is assumed that the more independently-owned the airport, the more likely it is to respond. This follows the logic that independently-owned airports are more responsive than nationally-owned or to a lesser extent, regionally-owned airports. However, as can be

⁴¹ In the context of airports, Instrument Flight Rules is a set of regulations and procedures that allow pilots to land and take off from an airport without necessarily being able to see obstacles, terrain and other aircraft (i.e. they must fly using their instruments). This is as opposed to Visual Flight Rules where pilots must be able to see and avoid obstacles, terrain and other aircraft.

seen from table 5.5, responses from airports according to ownership are varied and do not appear to follow a logical pattern. As expected, airports that are nationally-owned have the lowest response rate (36%). However, airports that are regionally-owned have the highest response rate (70%) and the response rate for regionally-owned airports is much higher than the response rate for independently-owned airports (42%). The reason for this is likely to be that all of the regionally-owned airports are based in the Highlands and Islands of Scotland and that because the survey was presented in English, the response rate for airports in this geographical area was particularly high. If regionally-owned and nationally-owned airports are grouped together, the response rate is 38%. This is similar to the 42% response rate of independently-owned airports.

Table 5.5 Sample characteristics by airport ownership

Ownership	Population	Responses	Response rate
National	141	51	36%
Regional	10	7	70%
Independent	66	28	42%
Total	217	86	40%

5.1.2.4 Survey response bias

As was mentioned in sub-section 4.3.3, the survey was emailed to the airport manager of each airport and the airport manager then had the option to return the completed survey by email, post or fax. Email addresses were not found for the airport managers of 38 of the 217 airports so surveys were sent to those airports by post and airport managers then had the option to return the survey by post or fax. Klassen and Jacobs (2001) conducted a survey on forecasting characteristics of 118 manufacturing companies in Canada in order to investigate response rates for different survey technologies. Their study found that computer-based surveys produce half as many responses as postal surveys.

Table 5.6 lists the number of responses and the percentage of all responses according to the method of response. As can be seen from table 5.6, each of the three possible methods of response was used. The most widely used method of response was email (52% of the sample responded by email) and the least used method of response was fax (14% of the sample responded by fax). This contradicts the indication by Klassen and Jacobs (2001) that response rates for computer-based surveys are likely to be lower than for postal surveys. This is likely to reflect the growing use and acceptance of computers, especially in the workplace.

Table 5.6 Sample characteristics according to method of response

Method of response	Responses	Percent
Email	45	52%
Post	29	34%
Fax	12	14%
Total	86	100%

Klassen and Jacobs (2001) also found that proposition completion varies when using multi-mode processes and this was tested using an Independent Samples T-test. The test investigated differences between means for two independent groups (i.e. those that responded by email compared to those that responded by post or fax). The test compares means for each of the key variables in this study and produces a t-value (a measure of the difference between the two independent groups) and a level of significance. Levels of significance represent the probability that the findings are not down to chance. A significance level of above 95% is normally considered appropriate for hypothesis testing and is presented as a decimal in statistical tests (i.e. 95% is presented as .05). If a result is significant it is then normally written-up as $p < .05$ (i.e. probability is greater than 95%). If the significance level exceeds 99%, it is normally written-up as $p < .01$ (i.e. probability is greater than 99%). 2-tailed refers to the hypothesis for the test and demonstrates that the results are based on a 2-tailed non-directional hypothesis (i.e. there is a significant difference between the two independent groups but that the direction of the difference has

not been stated). N refers to the number of responses in each independent group and the mean is the average response for each group. The output for the test is provided in table 5.7.

Table 5.7 Independent Samples T-test for postal bias

Variable	Response	N	Mean	t-value	Significance (2-tailed)
TURB	Email	43	2.9535	1.950	.055
	Post/fax	41	2.5122		
COMP	Email	43	3.0814	.208	.836
	Post/fax	41	3.0244		
DEMAND	Email	45	3.7000	1.068	.289
	Post/fax	41	3.4268		
SUPPLY	Email	44	3.5227	-.146	.884
	Post/fax	41	3.5610		
ENV	Email	41	3.2988	1.145	.255
	Post/fax	41	3.1311		
MKTOR	Email	36	4.1029	1.658	.102
	Post/fax	36	3.8840		
INNO	Email	44	2.6477	-.411	.682
	Post/fax	40	2.7125		
PERF	Email	45	3.5111	1.125	.264
	Post/fax	41	3.3333		

As can be seen from table 5.7, none of the means for each of the key variables differ significantly ($p > .05$). This shows that responses from airports that responded by email are not significantly different to responses from airports that responded by post or fax.

Another possible source of bias is related to the timing of responses. As was mentioned in sub-section 4.3.3, surveys were sent to airports on three different occasions (November 2005, February 2006 and March 2006). Table 5.8 lists the number of responses and the percentage of all responses according to the timing of response.

Table 5.8 Sample characteristics according to timing of response

Timing of Responses	Responses	Percent
1 st (17 th November-17 th December 2005)	31	36%
2 nd (17 th February-17 th March 2006)	29	34%
3 rd (17 th March-17 th April 2006)	26	30%
Total	86	100%

As can be seen from table 5.8, the number of responses declined with each mailing. It can also be seen that most of the surveys were returned after the first or second mailing (70%). Only 30% of the surveys were returned after the third and final mailing.

The data in table 5.8 suggests that non-response bias according to timing of response should be tested for. Armstrong and Overton (1977) identify two ways of testing for non-response bias according to timing of response. The first method involves interviewing a sample of non-respondents to determine whether or not they would have responded differently to those that did respond. This method is time consuming and is difficult to administer. The second method works on the assumption that a late respondent will demonstrate similar characteristics to a non-respondent and that by comparing the responses of early and late respondents, non-response bias can be tested. The latter is easily tested using an Independent Samples T-test to compare differences in the mean responses of early and late respondents for each of the key variables in this study. This approach has been taken in previous studies (e.g. Advani, 1998; Perry and Shao, 2002; Pulendran et al., 2003; Tuominen et al., 2004; Wu, 2004; Green et al., 2005; Greenley et al., 2005; Lai and Cheng, 2005; Qu et al., 2005; Sin et al., 2005) and is also taken in this study.

The test investigates differences between means for those that responded early (i.e. after the first mailing) and those that responded late (i.e. after the second or third mailing). The test compares means for each of the key variables in this study and the output is provided in table 5.9.

Table 5.9 Independent Samples T-test for late response bias

Variable	Response	N	Mean	t-value	Significance (2-tailed)
TURB	Late	54	2.7963	.677	.501
	Early	30	2.6333		
COMP	Late	55	3.1455	.929	.355
	Early	29	2.8793		
DEMAND	Late	55	3.6818	1.169	.246
	Early	31	3.3710		
SUPPLY	Late	54	3.5926	.521	.604
	Early	31	3.4516		
ENV	Late	54	3.2940	1.508	.135
	Early	28	3.0625		
MKTOR	Late	47	3.9662	-.556	.580
	Early	25	4.0447		
INNO	Late	55	2.7491	1.243	.218
	Early	29	2.5448		
PERF	Late	55	3.3939	-.544	.588
	Early	31	3.4839		

As can be seen from table 5.9, none of the means for each of the key variables differ significantly ($p > .05$). This shows that responses from airports that responded early are not significantly different to responses from airports that responded late.

The final consideration in terms of bias testing is to do with the job of the respondent. Previous studies on MO (e.g. Kohli et al., 1993; Advani, 1998) have tested for response bias from marketing staff. This is on the assumption that on surveys that are based on perceptual measures of marketing-related issues, marketing staff are likely to inflate their responses.

In this study, surveys were sent to airport managers and respondents were not asked to state the nature of their job because it was envisaged that surveys would be completed by the airport managers (this was discussed in sub-section 4.3.1.12). Omitting a question of this

nature also helps to limit the size of the survey and to maximise the potential for responses by allowing for anonymity.

As it was, a number of airport managers forwarded the survey onto other members of staff to complete so they were not all completed by the airport manager. In addition, many of the respondents had their job title on their email or enclosed a business card or compliments slip with the returned survey. Table 5.10 lists the number of responses and the percentage of all responses according to the job of the respondent.

Table 5.10 Sample characteristics according to job of respondent

Job of respondent	Responses	Percent
Airport Manager	37	43%
Marketing Manager	13	15%
Operations Manager	3	4%
Not stated	33	38%
Total	86	100%

As can be seen from table 5.10, most of the surveys were completed by the airport manager (43%). Respondents had the opportunity to return the survey anonymously and a large number of respondents chose to take that option (38%). Of the remaining respondents, 15% work in marketing and 4% work in operations. From the details provided by respondents, it was possible to test for marketing-related bias and this was achieved using an Independent Samples T-test to compare means for each of the key variables in this study, according to whether or not the respondent is employed in marketing. The output of the test is provided in table 5.11.

As can be seen from table 5.11, the means of three of the variables (DEMAND, INNO and PERF) differ significantly ($p < .05$). This shows that responses from respondents in marketing-related jobs do differ significantly for those three variables from respondents that do not have a marketing-related job. It is interesting to note that each of the three

variables are of particular importance to marketing staff (e.g. DEMAND relates to what the demand and potential demand is like at the airport, INNO relates to the extent to which the airport has adopted innovative marketing practices, and PERF relates to the airports ability to attract new routes and grow and retain existing routes). This suggests that either marketing staff have a better perception of the airports activities in these areas or that marketing staff have inflated perceptions of their airport in these areas. It is suspected that the latter is the case.

Table 5.11 Independent Samples T-test for marketing-related bias

Variable	Response	N	Mean	t-value	Significance (2-tailed)
TURB	Marketing	13	2.6154	-.454	.651
	Other	71	2.7606		
COMP	Marketing	12	3.6250	1.736	.086
	Other	72	2.9583		
DEMAND	Marketing	14	4.1429	2.011	.048
	Other	72	3.4583		
SUPPLY	Marketing	13	3.5769	.116	.908
	Other	72	3.5347		
ENV	Marketing	11	3.4659	1.354	.180
	Other	71	3.1761		
MKTOR	Marketing	12	4.1373	.962	.340
	Other	60	3.9647		
INNO	Marketing	13	3.1769	2.832	.006
	Other	71	2.5873		
PERF	Marketing	14	3.9762	3.232	.002
	Other	72	3.3194		

Other studies on MO (e.g. Advani, 1998) have tested for senior management job-related bias, with the assumption that senior managers may inflate responses on MO, especially those that have a marketing background. Although this study was not able to group respondents according to whether or not they were senior managers, it was able to test for variations between airport managers and other staff. An Independent Samples T-test

comparing means for each of the key variables in this study, according to whether or not the respondent was an airport manager returned no significant differences.

5.2 Descriptive statistics

The survey was constructed in five sections and each section supported the development of a number of key variables. The first section of the survey was used to create the strategic focus variables (SERFOCUS and AIRFOCUS). The second section was used to create the environmental variables (TURB and COMP), market-level variables (DEMAND and SUPPLY), and the environmental support variable (ENV). The third section was used to create the MO variable (MKTOR). The fourth section was used to create the marketing innovations variable (INNO). The fifth section was used to create the performance variable (PERF). The ownership variable (OWNER) was creating using secondary records as opposed to the survey.

The variables SERFOCUS, AIRFOCUS, TURB, COMP, DEMAND, SUPPLY, ENV and OWNER are effectively used in this study as independent variables (i.e. variables that have an impact upon the dependent variable) whilst the variables MKTOR, INNO and PERF are effectively used in this study as dependent variables (i.e. variables that are an effect of the independent variable). The distribution of responses and the relationships between each variable will be considered in sub-section 5.2.1 and 5.2.2 respectively.

5.2.1 Distribution of responses

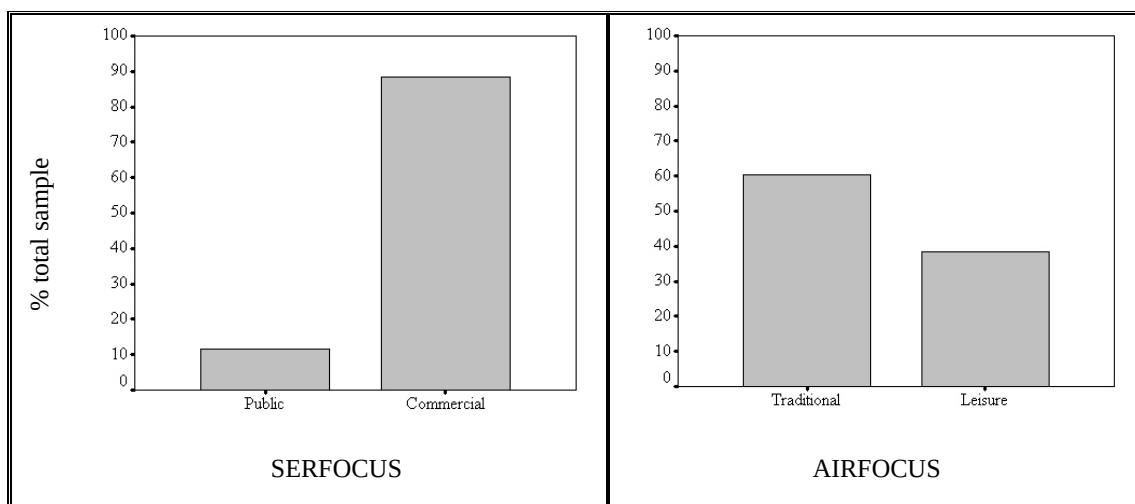
The distribution of responses explores the sample in more detail and the independent and dependent variables will be considered individually.

5.2.1.1 Independent variables

Each of the independent variables will be considered in turn. However, the variable OWNER will not be considered in this sub-section as the distribution of responses have already been discussed in sub-section 5.1.2.3.

Figure 5.1 illustrates the distribution of responses for SERFOCUS and AIRFOCUS. As can be seen from figure 5.1, a large proportion of the airports in the sample (89%) have been providing mainly commercial passenger services during the last three years. Only 11% of the airports in the sample have been providing mainly public passenger services (e.g. PSO's). This means that although some airports in EPA's are focused on providing a public service to their local community, the large majority of airports in EPA's are focused on providing commercial passenger services, which would support the need to be market-orientated.

Figure 5.1 Distribution of responses for SERFOCUS and AIRFOCUS



Notes:

a. N = 86 (SERFOCUS); 85 (AIRFOCUS).

Figure 5.1 also shows that a large proportion of the airports in the sample (61%) have been focused on developing traditional air services during the last three years. Despite the

dominance of a focus on traditional services, a fairly large proportion of airports in the sample (39%) have been focused on developing leisure services. This demonstrates the importance of leisure services at airports in EPA's and although trends over time have not been investigated by this study, it is likely that airports are increasingly focusing on the development of leisure services. This has already been discussed in sub-section 2.2.5.

Table 5.12 provides the distribution of responses for the environmental and market-level factors.

Table 5.12 Distribution of responses for environmental and market-level factors

Variable	N	Mean	SD*	% agree
TURB	84	2.7	1.05	29
1. Airlines change or cancel routes, frequency or seat capacity on an annual basis	84	3.2	1.40	52
2. We cater to the same airlines as we did 3 years ago	84	2.3	1.40	23
COMP	84	3.1	1.25	44
1. We compete fiercely with other airports for airlines	86	2.9	1.41	37
2. We will lose out to competitors if we fail to satisfy our airlines	84	3.3	1.37	60
DEMAND	86	3.6	1.19	63
1. Potential demand for air services in the region offers significant opportunities	86	4.0	1.10	78
2. The market for air services in our region grew rapidly last year (e.g. by over 5%)	86	3.2	1.62	50
SUPPLY	85	3.5	1.20	57
1. Future growth is constrained by infrastructure (e.g. runway, lighting, terminal)	86	3.2	1.50	51
2. Future growth is constrained by operating conditions (e.g. limits, weather)	85	3.9	1.30	69
ENV (based on the average across all 8 environmental propositions)	84	3.2	0.66	37

Key:

* = SD: Standard deviation.

Each variable is constructed from two propositions in the survey and responses for each proposition are provided in table 5.12 in terms of the number of responses (N), the average score from the Likert scale of 1-5, where 5 is strongly agree and 1 is strongly disagree (Mean), the standard deviation, which summarises the average distance of all responses from the mean (SD), and the proportion of all respondents that either strongly agreed or

tended to agree with each proposition (% agree). Each variable is then constructed by averaging the responses for each of the two propositions. Responses for the reverse statements (TURB 2, SUPPLY 1 and SUPPLY 2) have been reversed in order to provide comparative data. The variable ENV is simply an average of responses across all eight environmental propositions, the creation of which is described in sub-section 4.3.1.11.

As can be seen from table 5.12, the mean score for the variables TURB and COMP is 3 (when rounded to no decimal places). This means that on average, airports neither agree nor disagree that they operate in an environment that is characterised by market turbulence (TURB) or by competitive intensity (COMP). The mean score for the variables DEMAND and SUPPLY is slightly higher with a score of 4. This means that on average, airports tend to agree that they have experienced and have the potential to experience market growth (DEMAND) or that airport infrastructure (SUPPLY) is not constrained. However, the difference between the four variables is minimal and standard deviations are fairly similar across each variable.

The slightly lower values for TURB and COMP are attributable to propositions TURB 2 and COMP 1 respectively. Mean scores for these propositions are relatively low compared to all of the other propositions. TURB 2 is a reverse proposition so respondents may not have understood that it is a reverse statement and may have entered a similar score to proposition TURB 1. The relatively low score for proposition COMP 1 may be a result of using the word ‘fiercely’. This is because the strength of the word may have reduced the strength of the response.

A final point of interest is the relatively high perception that airports have of potential demand (proposition DEMAND 1). This proposition was perceived more favourably than any other proposition and this may be because respondents are keen to promote the potential opportunities at their airport.

5.2.1.2 Dependent variables

The distribution of responses for the dependent variables is also of interest and each variable needs to be tested for normality. Normal distributions are a requirement for many of the statistical tests that are used in the section on hypothesis testing (section 5.4). The MKTOR variable was constructed by averaging the responses for each of the 17 propositions on MO. The INNO variable was constructed by averaging the responses for each of the 10 propositions on marketing innovations. The PERF variable was constructed by averaging the responses for each of the three propositions on performance. The reliability of the propositions used to construct each variable (i.e. the extent to which each proposition is measuring the same aspect) is considered in section 5.3 so this section will not consider the responses for each individual proposition.

One way of investigating the distribution of responses is by using a histogram and a histogram for each dependent variable is provided in figure 5.2.

72 respondents answered each of the 17 propositions on MO. Respondents generally have a high perception of MO at their airport (mean response of 4, with 5 being the highest and 1 being the lowest). The standard deviation is fairly low (.70), which means that most of the responses are clustered around the mean and the distribution of responses is fairly normal with responses being fairly evenly distributed either side of the mean.

84 respondents answered each of the 10 propositions on marketing innovations. Respondents generally have a high perception of marketing innovations at their airport (mean response of 3, with 4 being the highest and 1 being the lowest). The standard deviation is fairly low (.80), which means that most of the responses are clustered around the mean and the distribution of responses is fairly normal with responses being fairly evenly distributed either side of the mean.

86 respondents answered each of the three propositions on performance. Respondents generally perceive the performance of their airport to be no different to that of similar or competing airports (mean response of 3, with 5 being much better and 1 being much worse). The standard deviation is fairly low (.79), which means that most of the responses are clustered around the mean and the distribution of responses is fairly normal with responses being fairly evenly distributed either side of the mean.

Figure 5.2 Distribution of responses for MKTOR, INNO and PERF

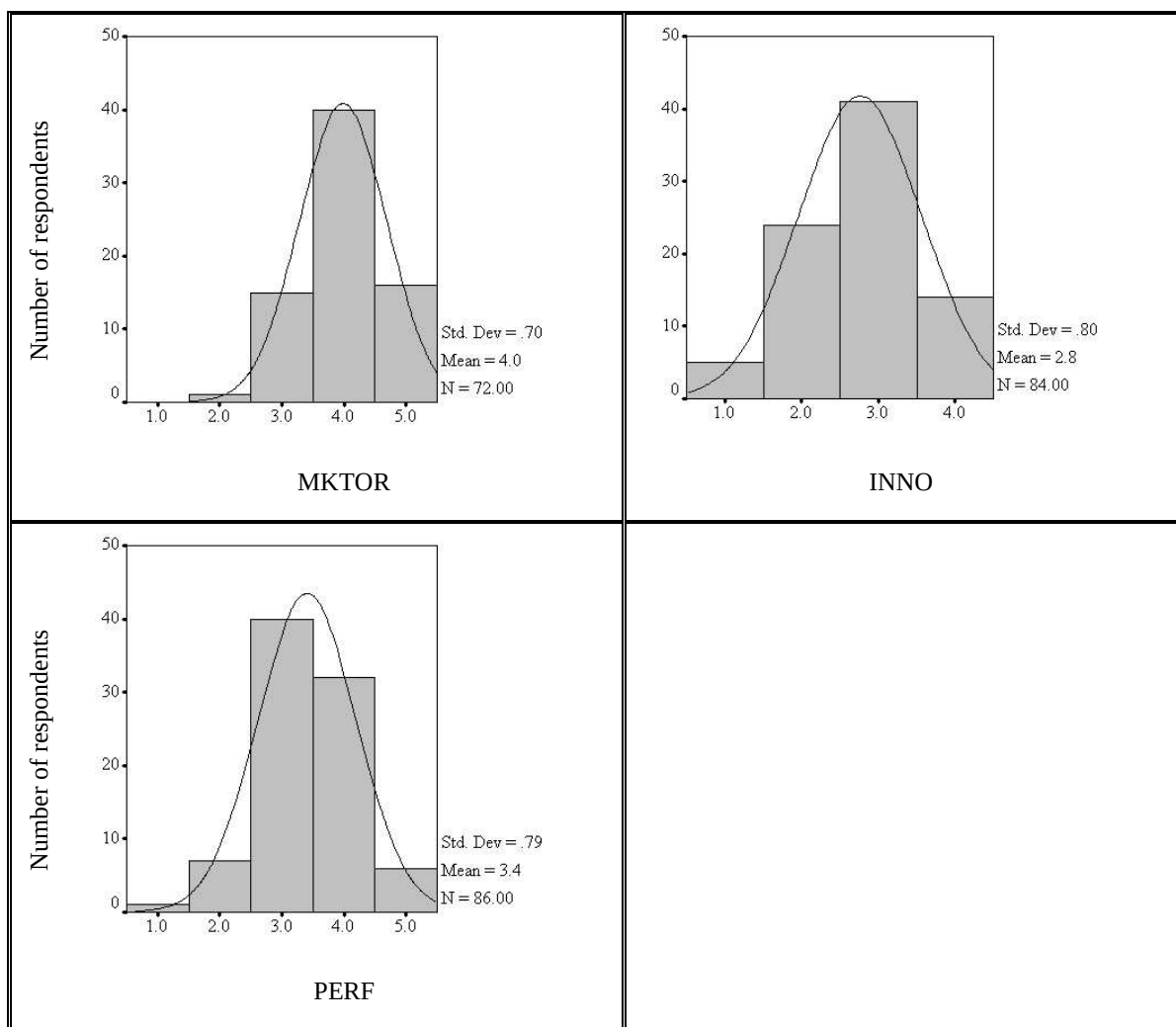


Figure 5.2 shows that the dependent variables have fairly normal distributions and therefore meet the requirement for many of the statistical tests that will be used in the section on hypothesis testing (section 5.4).

5.2.2 Relationships between variables

This final part of section 5.2 provides the results of a correlation analysis between variables. This indicates relationships that can be investigated during the hypothesis testing (section 5.4). Spearman's Rho Correlation analysis has been used (as opposed to Pearson's) because the key variables are constructed from ordinal data (as opposed to interval data). The variables SERFOCUS, AIRFOCUS and OWNER have not been included in the analysis because the variables are constructed from nominal or dichotomous data that consists of categories and correlation analysis is not appropriate for such data.

Correlation analysis provides a correlation coefficient that demonstrates the strength of the relationship between two variables. A correlation coefficient of ± 1 means that there is a perfect correlation between two variables. $+1$ means that there is a perfect positive correlation (i.e. when the value of one variable increases, the value of the other variable also increases, and at the same rate) whilst -1 means that there is a perfect negative correlation (i.e. when the value of one variable increases, the value of the other variable decreases, and at the same rate). The correlation coefficient can fall anywhere between 0 and ± 1 with ± 0.1 being a weak correlation, ± 0.5 being a moderate correlation and ± 0.7 being a strong correlation. In addition to providing a correlation coefficient, the output from a correlation analysis is able to provide the significance of the correlation and the number of responses. The results of the correlation analysis for this study can be seen in table 5.13.

Table 5.13 Spearman's Rho correlations

		TURB	COMP	DEMAND	SUPPLY	ENV	MKTOR	INNO	PERF
TURB	Coefficient	1.000	.113	.067	.226*	.560**	.096	.185	.021
	Significance	.	.313	.545	.039	.000	.425	.096	.846
	N	84	82	84	84	82	71	82	84
COMP	Coefficient	.113	1.000	.182	.099	.617**	.479**	.434**	.254*
	Significance	.313	.	.097	.374	.000	.000	.000	.020
	N	82	84	84	83	82	70	83	84
DEMAND	Coefficient	.067	.182	1.000	-.167	.482**	.388**	.516**	.633**
	Significance	.545	.097	.	.127	.000	.001	.000	.000
	N	84	84	86	85	82	72	84	86
SUPPLY	Coefficient	.226*	.099	-.167	1.000	.533**	.083	-.145	-.204
	Significance	.039	.374	.127	.	.000	.490	.191	.061
	N	84	83	85	85	82	72	83	85
ENV	Coefficient	.560**	.617**	.482**	.533**	1.000	.444**	.380**	.272*
	Significance	.000	.000	.000	.000	.	.000	.000	.013
	N	82	82	82	82	82	69	81	82
MKTOR	Coefficient	.096	.479**	.388**	.083	.444**	1.000	.645**	.449**
	Significance	.425	.000	.001	.490	.000	.	.000	.000
	N	71	70	72	72	69	72	71	72
INNO	Coefficient	.185	.434**	.516**	-.145	.380**	.645**	1.000	.545**
	Significance	.096	.000	.000	.191	.000	.000	.	.000
	N	82	83	84	83	81	71	84	84
PERF	Coefficient	.021	.254*	.633**	-.204	.272*	.449**	.545**	1.000
	Significance	.846	.020	.000	.061	.013	.000	.000	.
	N	84	84	86	85	82	72	84	86

Key:

* = Correlation is significant at the .05 level (2-tailed).

** = Correlation is significant at the .01 level (2-tailed).

As can be seen from table 5.13, many of the environmental and market-level variables correlate with ENV. This is to be expected as ENV is created using those variables. Other correlations that are of interest and are significant at .05 or .01 levels include:

- COMP, DEMAND and ENV, which have a significant relationship with the dependent variables (MKTOR, INNO and PERF);
- MKTOR and INNO, which have a significant relationship with PERF; and,
- MKTOR, which has a significant relationship with INNO.

The relationships identified in table 5.13 are investigated further during the hypothesis testing (section 5.4) but before that, key variables need to be tested for reliability and validity.

5.3 Reliability and validity testing

The reliability and validity of the propositions used to create each variable were confirmed at face value by experts from industry and academia. The process and some of the individuals involved are mentioned in sub-section 4.3.2. This helped to ensure that the propositions used are relevant to industry and to the research questions of this study. Statistical tests were then used to investigate the reliability and validity of the variables based on survey responses, and the methodology used is similar to that of previous MO studies (e.g. see Narver and Slater, 1990; Advani, 1998; Appiah-Adu and Singh, 1998; Hooley et al., 2003; Tse et al., 2004; Lai and Cheng, 2005; Sin et al., 2005).

Reliability testing analyses the internal consistency of a variable by testing whether each individual proposition that is used to construct the variable is measuring the same aspect. Validity testing analyses the extent to which two or more measures of the same variable conform to expected theory and this can be tested according to convergent, discriminate and concurrent validity.

This study investigates the reliability of each of the three dependent variables (MKTOR, INNO and PERF) in order to check for internal consistency. None of the independent variables are tested for reliability as it is recommended that only variables constructed from three or more propositions be tested for reliability (Peter, 1979). This study also tests the

convergent validity (i.e. the degree of agreement) between the three different components of the MKTOR variable: MIG; MIS; and, MIR. None of the other variables are tested for construct validity, as they are not constructed by different components, only different propositions.

5.3.1 Reliability testing

Churchill (1979) recommends that reliability is tested using Cronbach's Coefficient Alpha. The equation used to calculate Cronbach's Coefficient Alpha is provided in figure 5.3.

Figure 5.3 Equation used to calculate Cronbach's Coefficient Alpha

$\alpha = \frac{Nr}{1+(N-1)r}$
Where: N is equal to the number of propositions and r is the average inter-proposition correlation amongst the propositions.

Source: adapted from Churchill (1979)

Responses for each of the propositions for MKTOR, INNO and PERF have been correlated with one another using Cronbach's Coefficient Alpha in order to indicate the level of convergence, which according to Nunnally (1978) should produce an alpha coefficient of above .70 for exploratory research. The reliability (or consistency) of each proposition (to the overall measure of each variable) was then tested by conducting Cronbach's Coefficient Alpha after omitting each individual proposition. If the alpha coefficient improves significantly when a proposition is omitted, that proposition should be rejected from the study on the basis that it is not consistent with the overall measure of MKTOR, INNO and PERF. The outputs for each variable (MKTOR, INNO and PERF) are provided in table 5.14.

Table 5.14 Reliability analysis for MKTOR, INNO and PERF

Proposition	Alpha	Alpha if deleted	Proposition	Alpha	Alpha if deleted	Proposition	Alpha	Alpha if deleted
MKTOR	.8917		INNO	.8895		PERF	.8012	
MKTOR 1		.8857	INNO 1		.8959	PERF 1		.7344
MKTOR 2		.8844	INNO 2		.8816	PERF 2		.7397
MKTOR 3		.8829	INNO 3		.8680	PERF 3		.7149
MKTOR 4		.8885	INNO 4		.8687			
MKTOR 5		.8790	INNO 5		.8893			
MKTOR 6		.8819	INNO 6		.8723			
MKTOR 7		.8825	INNO 7		.8797			
MKTOR 8		.8914	INNO 8		.8677			
MKTOR 9		.8880	INNO 9		.8845			
MKTOR 10		.8875	INNO 10		.8752			
MKTOR 11		.8838						
MKTOR 12		.8790						
MKTOR 13		.8837						
MKTOR 14		.8940						
MKTOR 15		.8883						
MKTOR 16		.8895						
MKTOR 17		.8848						

Notes:

a. N = 72 (MKTOR); N = 84 (INNO); N = 86 (PERF).

As can be seen from table 5.14, the alpha coefficient for the overall measure of MKTOR (.8917), INNO (.8895) and PERF (.8012) exceeds the recommended value of .70, which confirms the reliability of each construct. The alpha coefficient for MKTOR and INNO increases slightly when two propositions (MKTOR 14 and INNO 1) are deleted. However, the propositions have not been deleted on the basis that their impact is minimal (MKTOR increases from .8917 to .8940 and INNO increases from .8895 to .8959).

5.3.2 Validity testing

Spearman's Rho Correlation analysis was used to analyse the relationship between the individual components of MKTOR (MIG, MIS and MIR). This tests the convergent validity of the three components of MKTOR and tests whether or not they are converging on a common construct. The results are provided in table 5.15.

Table 5.15 Convergent validity of MKTOR

		MIG	MIS	MIR	MKTOR
MIG	Coefficient	1.000	.648**	.740**	.877**
	Significance	.	.000	.000	.000
	N	79	76	74	72
MIS	Coefficient	.648**	1.000	.705**	.861**
	Significance	.000	.	.000	.000
	N	76	80	76	72
MIR	Coefficient	.740**	.705**	1.000	.928**
	Significance	.000	.000	.	.000
	N	74	76	78	72

Key:

** = Correlation is significant at the .01 level (2-tailed).

As can be seen from table 5.15, correlations among the three components of MKTOR are fairly high (ranging from .648 to .740) and each of the correlations is significant ($p < .01$). In addition, each of the three components has a strong correlation with the overall MKTOR construct (with coefficients ranging from .861 to .928) and each of the correlations is significant ($p < .01$). The pattern of correlations indicates that the three components are convergent, thereby confirming the convergent validity of MKTOR.

5.4 Hypothesis testing

The last section in this chapter aims to answer the research questions and hypotheses that were proposed in Chapter 3. Each of the research questions and their respective hypotheses will be considered in turn.

5.4.1 Is MO affected by airport ownership?

The first question asks whether MO at airports in EPA's is affected by airport ownership and proposes that:

H1. The more independently-owned the airport, the higher the level of MO.

The cross-tabulations analysis in table 5.16 provides some initial findings from the sample in terms of the distribution of MO by type of airport ownership.

Table 5.16 Cross-tabulations for MO by type of airport ownership

Ownership	MO					Total
	Strongly disagree	Tend to disagree	Neither	Tend to agree	Strongly agree	
National	-	1 (3%)	11 (28%)	20 (50%)	8 (19%)	40
Regional	-	-	2 (29%)	4 (57%)	1 (14%)	7
Independent	-	-	2 (8%)	16 (64%)	7 (28%)	25
Total	-	1 (1%)	15 (21%)	40 (56%)	16 (22%)	72

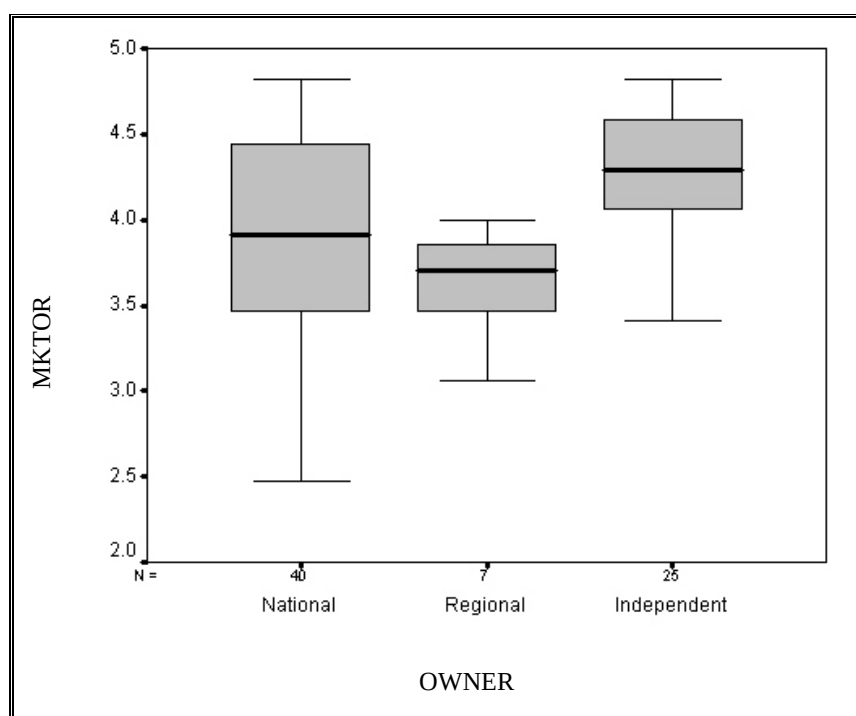
Notes:

a. N = 72.

As can be seen from table 5.16, MO tends to be higher at airports that are independently-owned (i.e. 92% of the airports that are independently-owned tend to agree or strongly agree that they are market-orientated compared to only 69% of nationally-owned airports

and 71% of regionally-owned airports). However, the output in table 5.16 is far from conclusive and is fairly difficult to interpret. A better way of investigating differences in the distribution of MO by type of airport ownership is by producing a box-plot using the variables MKTOR and OWNER. The output of the box-plot is provided in figure 5.4.

Figure 5.4 Box-plot for MKTOR by OWNER



The box-plot in figure 5.4 features the three types of airport ownership along the x-axis (N is provided above each label of airport ownership) and the level of agreement that the airport is market-orientated along the y-axis (with 2 being tend to disagree and 5 being strongly agree). One box is featured for each type of airport ownership and the respective boxes indicate the middle 50% of responses (i.e. the inter-quartile range) for that group of airports. The 1st quartile of responses is in the bottom half of the box and the 3rd quartile of responses are in the top half of the box. The lines that extend horizontally from the top and the bottom of the boxes represent the maximum and minimum values respectively. The line in each box indicates the mean value.

As can be seen from figure 5.4, there is a clear trend that suggests that the more independently-owned the airport, the higher the level of MO. This is because the inter-quartile range of responses for nationally-owned airports ranges from 3.4 to 4.3 compared to an inter-quartile range of 4.1 to 4.6 for independently-owned airports. Regionally-owned airports fall somewhere in-between with an inter-quartile range of 3.4 to 3.8.

The direction and significance of the differences between MO by type of airport ownership can be tested using a series of Independent Samples T-tests that compare the significance of differences in means. The test can only handle two types of response at a time so a series of tests have been conducted in order to test the differences between nationally-owned and regionally-owned airports, nationally-owned and independently-owned airports, and regionally-owned and independently-owned airports. Based on the findings in table 5.16 and figure 5.4, it can be assumed that independently-owned airports will have significantly higher levels of MO than nationally-owned and regionally-owned airports. However, the difference between nationally-owned and regionally-owned airports is less certain. Table 5.17 provides the output of the Independent Samples T-tests.

Table 5.17 Independent Samples T-tests for MO by type of airport ownership

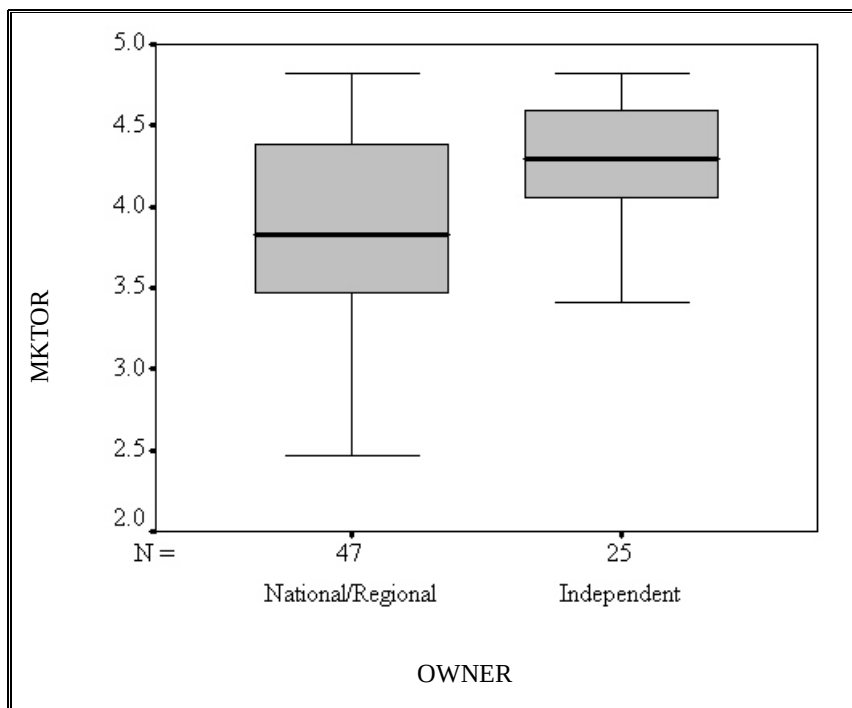
Test	Response	N	Mean	t-value	Significance (2-tailed)
1	National	40	3.8647	.487	.628
	Regional	7	3.7479		
2	National	40	3.8647	-2.960	.004
	Independent	25	4.2682		
3	Regional	7	3.7479	-2.650	.013
	Independent	25	4.2682		
4	National/Regional	47	3.8473	-3.185	.002
	Independent	25	4.2682		

As can be seen from table 5.17, independently-owned airports have significantly higher levels of MO than both nationally-owned and regionally-owned airports ($p < .01$). The difference between nationally-owned and regionally-owned airports is not significant and in

comparing means, it would appear that the nationally-owned airports have higher levels of MO than the regionally-owned airports. The results in table 5.17 mean that ‘the more independently-owned the airport, the higher the level of MO’ (H1) can be accepted although some doubt is expressed in the difference between nationally-owned and regionally-owned airports.

The low representation in the sample from regionally-owned airports (N=7) has already been mentioned in sub-section 5.1.2.3 and makes it difficult to consider them as a separate group. When regionally-owned airports are combined with nationally-owned airports, the difference in means between them and independently-owned airports is significant ($p < .01$). This is demonstrated by test 4 in table 5.17. The difference in means, inter-quartile ranges and maximum and minimum values are shown in figure 5.5.

Figure 5.5 Box-plot for MKTOR by OWNER (grouped)



5.4.2 Does MO have a positive effect on airport performance?

The second question asks whether MO has a positive effect on the performance of airports in EPA's and proposes that:

H2. The greater the MO of an airport, the greater its performance.

The cross-tabulations analysis in table 5.18 provides some initial findings from the sample in terms of the distribution of performance by MO.

Table 5.18 Cross-tabulations for performance by MO

MO	Performance					Total
	Much worse	Worse	No different	Better	Much better	
Strongly disagree	-	-	-	-	-	-
Tend to disagree	-	-	1 (100%)	-	-	1
Neither	-	4 (27%)	7 (46%)	4 (27%)	-	15
Tend to agree	1 (2%)	2 (5%)	22 (55%)	13 (33%)	2 (5%)	40
Strongly agree	-	-	3 (19%)	10 (62%)	3 (19%)	16
Total	1 (1%)	6 (8%)	33 (46%)	27 (38%)	5 (7%)	72

Notes:

a. N = 72.

As can be seen from table 5.18, performance tends to be higher for airports that have a higher level of MO. For instance, 81% of the airports that strongly agree that they are market-orientated agree that their performance is better than that of similar or competing airports, compared to only 27% of the airports that neither agree nor disagree that they are market-orientated, and 0% of the airports that disagree that they are market-orientated. However, the output in table 5.18 is far from conclusive and is fairly difficult to interpret. A better way of investigating the relationship between MO and performance is by conducting a correlation analysis. Spearman's Rho Correlation analysis was conducted on MKTOR and PERF and the output is provided in table 5.13.

As can be seen from table 5.13, the relationship between MKTOR and PERF is moderate and positive (coefficient of .449) and significant ($p < .01$). This indicates that higher levels of MKTOR result in higher levels of PERF and means that the hypothesis that ‘the greater the MO of an airport, the greater its performance’ (H2) can be accepted. A certain degree of caution needs to be taken when accepting such a hypothesis because other variables have not been controlled for. For instance, it can be seen in table 5.13 that DEMAND has a stronger relationship with PERF than MKTOR. DEMAND has a coefficient of .633 and is significant ($p < .01$). COMP also has a significant relationship with PERF although the relationship and its level of significance is relatively weak (coefficient of .254 and $p < .05$). This means that it may actually be DEMAND that is responsible for PERF and that MKTOR may just be a consequence of DEMAND. This is where regression analysis becomes important.

Correlation analysis only demonstrates whether or not a significant relationship exists between two variables. It does not control for other variables and does not test for causality (i.e. the extent to which a particular variable(s) can predict performance). Further analysis can be provided using regression analysis in order to investigate the effect of MKTOR on PERF, controlling for other variables (i.e. TURB, COMP, DEMAND and SUPPLY). Regression analysis deals with finding the best possible linear equation relating to two or more variables and aims to predict the value of a dependent variable from the value(s) of an independent variable(s) using the equation in figure 5.6.

Figure 5.6 Equation used to predict from a regression analysis

$y = a + bx$
Where: y is the dependent variable. x is the independent variable(s). a is the constant. b is the coefficient for the independent variable (s).

Stepwise Regression analysis is a type of regression analysis that calculates the best possible model for a given set of variables. It therefore tends to discount any non-significant variables from the output. The output of the Stepwise Regression analysis for MKTOR on PERF whilst controlling for other variables is provided in table 5.19.

Table 5.19 Stepwise Regression analysis for MKTOR, controlling for other variables

	Unstandardised coefficients		Significance
	Beta	Standard error	
Constant	1.101	.496	.030
DEMAND	.336	.066	.000
MKTOR	.274	.131	.041

Notes:

a. Dependent variable: PERF.

b. R-square = .39.

The output of a Stepwise Regression analysis provides a number of values and only the key values have been provided in table 5.19. The constant is the estimated value of PERF given DEMAND and MKTOR have a value of zero. Unstandardised beta coefficients are then provided for DEMAND and MKTOR and effectively relate to how much a one-unit change in each independent variable is estimated to change the value of the dependent variable. Unstandardised beta coefficients are used instead of standardised beta coefficients because they use the independent variables as they are measured (i.e. from the Likert Scale). Standardised beta coefficients are used to compare the strength of different independent variables that have been measured in different ways.

The standard error is an estimate of the standard deviation of the unstandardised beta coefficient. It measures the variability in the estimate of the coefficient. Lower standard errors lead to more confidence of the estimate because the lower the standard error, the closer the true coefficient is to the estimated coefficient. The level of significance is provided and so too is R-square, which is a measure of how well the model explains the variability in the dependent variable.

Using the equation in figure 5.6 and the output of the Stepwise Regression analysis in table 5.19, performance can be predicted when values for DEMAND and MKTOR are known. For instance, if the average level of DEMAND and MKTOR for an airport is 4, then predicted performance will be 3.541 (4 when rounded to no decimal places). The equation used to calculate this would be as follows:

- Performance = $1.101 + (.336 \times 4) + (.274 \times 4)$
 - Performance = $1.101 + 1.344 + 1.096$
 - Performance = 3.541

Of particular importance to this study, the output in table 5.19 shows that DEMAND and MKTOR both have a significant impact on PERF and with an R-square value of .39, it can be said that 39% of the variance in PERF can be accounted for by DEMAND and MKTOR. The regression analysis also confirms that it is DEMAND that has the greater predictive impact on PERF (coefficient of .336 and $p < .01$). MKTOR is also significant but the impact and significance of MKTOR is slightly less (coefficient of .274, $p < .05$).

5.4.3 When does MO have a positive effect on airport performance?

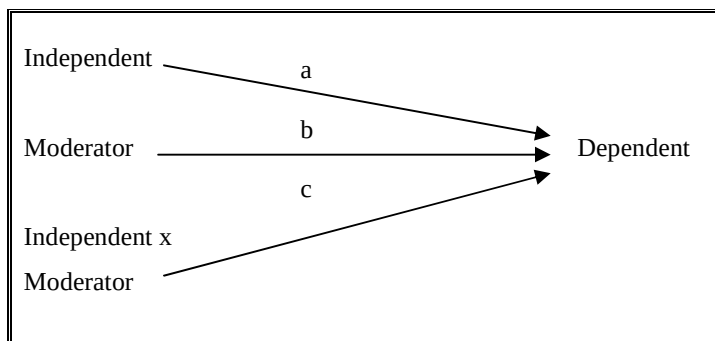
The third question asks when MO has a positive effect on the performance of airports in EPA's and proposes that:

- H3. The greater the market turbulence, the stronger the relationship between MO and airport performance.
- H4. The greater the competitive intensity, the stronger the relationship between MO and airport performance.
- H5. The greater the dominance of public services, the weaker the relationship between MO and airport performance.
- H6. The greater the focus on leisure markets, the stronger the relationship between MO and airport performance.

- H7. The greater the market growth, the greater the relationship between MO and airport performance.
- H8. The more constrained the airport, the weaker the relationship between MO and airport performance.

Each of the hypotheses seeks to test the effect of a number of moderating factors on the relationship between MO and performance, namely TURB, COMP, SERFOCUS, AIRFOCUS, DEMAND and SUPPLY. A great deal has been written in previous literature about moderating factors and the classic paper on this topic is by Baron and Kenny (1986). Baron and Kenny define a moderator as: “a qualitative (e.g. sex, race, class) or quantitative (e.g. level of reward) variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable” (Baron and Kenny, 1986; p1174). The relationship between independent, moderator and dependent variables is illustrated in figure 5.7.

Figure 5.7 Relationship between independent, moderator and dependent variables



Source: adapted from Baron and Kenny (1986)

As can be seen from figure 5.7, testing for moderation involves testing the main effects of the independent variable and moderator on the dependent variable (a and b) and the interaction between the independent variable and the moderator (c). If the interaction between the independent variable and the moderator is significant (i.e. c is significantly different from zero) then it can be accepted that moderation is taking place. The

significance of the main effects (a and b) is not particularly relevant in determining moderation.

Baron and Kenny (1986) provide four different ways of testing for moderation, depending upon the type of data. If both the independent variable and the moderator are dichotomous, they recommend a standard Two-Way ANOVA test and state that the key test for moderation is that the interaction term is significant.

In order to conduct the Two-Way ANOVA test in this study, the variables had to be re-coded. The variable SERFOCUS was dichotomised between those that were focused on providing public services and those that were focused on providing commercial services. The former was provided with an active value of 1 and the latter was provided with a base value of 0. The active variable was labelled PUBSER and the base value was labelled COMSER.

The variable AIRFOCUS was dichotomised between those that were focused on providing leisure services (i.e. low-cost or charter) and those that were focused on providing traditional or regional services. The former was provided with an active value of 1 and the latter was provided with a base value of 0. The active variable was labelled LEIFOCUS and the base value was labelled TRAFOCUS.

The MO variable (MKTOR), environmental variables (TURB and COMP) and market-level variables (DEMAND and SUPPLY) were dichotomised between those that on average, tended to agree or strongly agree with the relevant propositions (i.e. scored an average of between 4 and 5 for each variable, when rounded to no decimal places) and those that did not (i.e. those that scored an average of between 1 and 3 for each variable, when rounded to no decimal places). The former was provided with an active value of 1 and the latter was provided with a base value of 0. The variables were labelled HIMO, HITURB, HICOMP, MKTOPP and CONSTRAINED respectively. The SUPPLY variable used the original responses from respondents and not those that had been reversed for data

entry. The active value for each variable was labelled as being 'high' and the base value was labelled as being 'low'. For the SUPPLY variable, the active value was labelled as being 'constrained' and the base value was labelled as being 'not constrained'.

Table 5.20 provides the interaction output for the Two-Way ANOVA test for each variable. The f-value is similar to the t-value in a t-test in that it is a measure of the difference between two groups, which in this case is the effect of the independent variable on the dependent variable versus the combined effect of the independent variable and moderator on the dependent variable. The level of significance is provided for each interaction and moderation is indicated by the test of interaction being significant. Partial eta squared indicates the effect size by describing what proportion of the variance in the dependent variable can be accounted for by the interaction effect.

Table 5.20 Two-Way ANOVA test for moderation

Source	f-value	Significance	Partial eta squared
HIMO/HITURB (TURB)	4.216	.044	.061
HIMO/HICOMP (COMP)	.014	.908	.000
HIMO/PUBSER (SERFOCUS)	.585	.447	.009
HIMO/LEIFOCUS (AIRFOCUS)	4.337	.041	.063
HIMO/MKTOPP (DEMAND)	.587	.446	.009
HIMO/CONSTRAINED (SUPPLY)	.079	.780	.001

Notes:

a. Dependent variable: PERF.

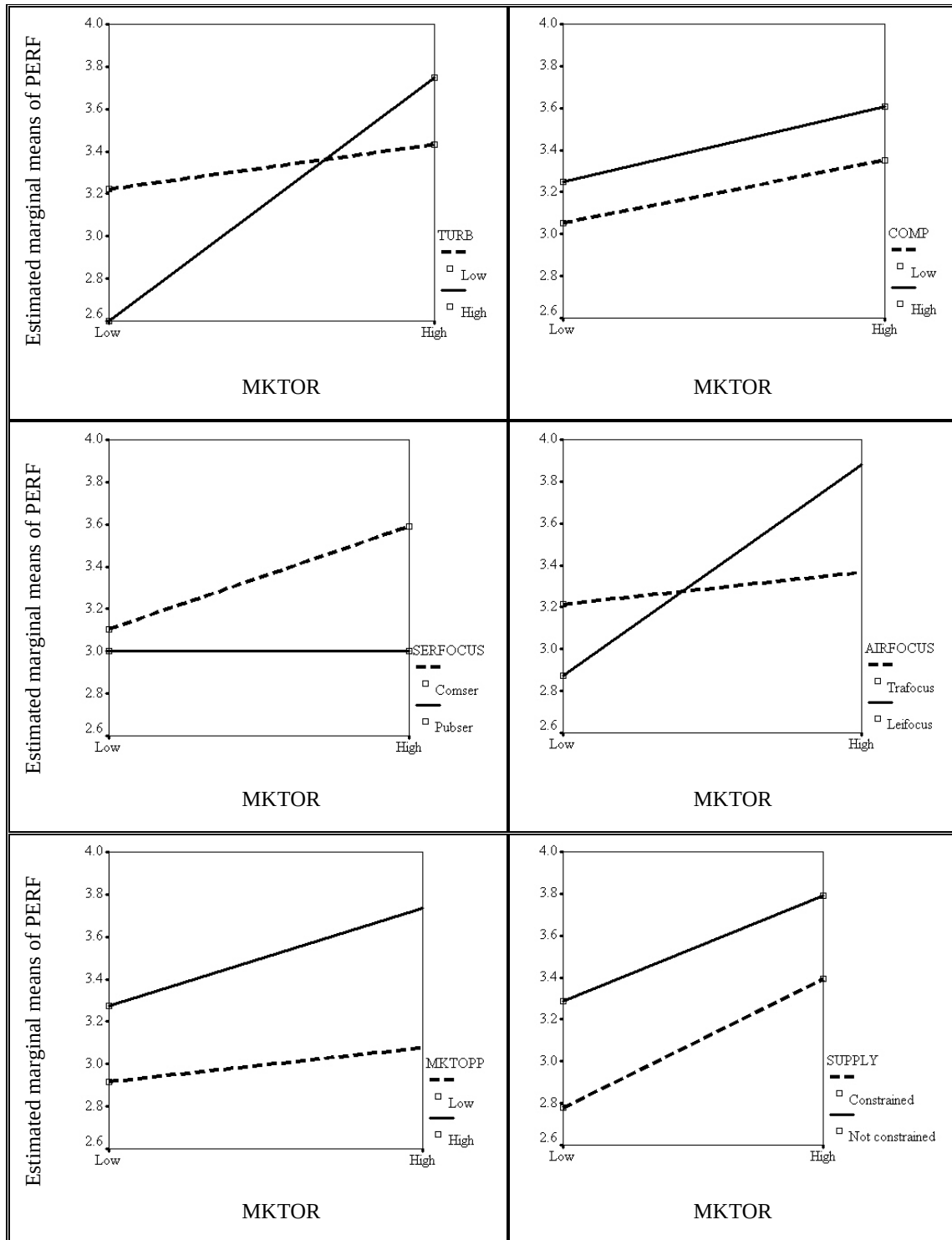
As can be seen from table 5.20, two of the variables have significant interaction terms. These are HITURB ($p < .05$) and LEIFOCUS ($p < .05$), which have f-values of 4.216 and 4.337 respectively. The partial eta squared output means that 6% (.061) of the variance in performance can be accounted for by the interaction effect of HIMO/HITURB and 6% (.063) can be accounted for by the interaction effect of HIMO/LEIFOCUS. The output for HIMO/HITURB and HIMO/LEIFOCUS signals the presence of an interaction but it does not test the hypotheses. This can be tested by taking the analysis a stage further and

investigating what effect the moderator has on the nature of the relationship between MO and performance. This is achieved using Simple-slope analysis (i.e. the plotting of graphs that indicate the relationship between MKTOR and PERF at different values of the moderator). Simple-slope analysis for each of the moderators can be seen in figure 5.8.

As can be seen from figure 5.8, when the moderator is high (e.g. high TURB and LEIFOCUS) the relationship between MKTOR and PERF is strong and positive (this is indicated by the slope of the line). When the moderator is low (e.g. low TURB and TRAFOCUS) there is very little relationship between MKTOR and PERF. For the other non-significant moderators, the effect of MKTOR on PERF (i.e. the slope of the line) is normally similar for both active and non-active values so there is no strengthening (or weakening) of the relationship between MKTOR and PERF when the moderator is active. The only exception to this is for SERFOCUS where the active value (PUBSER) was expected to weaken the relationship between MKTOR and PERF but instead, has no effect.

In the context of TURB, the findings in table 5.20 and figure 5.8 mean that ‘the greater the market turbulence, the stronger the relationship between MO and airport performance’. In the context of AIRFOCUS, the findings in table 5.20 and figure 5.8 mean that ‘the greater the focus on leisure markets, the stronger the relationship between MO and airport performance’. Therefore both H3 and H6 can be accepted. None of the other interaction terms returned significant values in table 5.20 so H4, H5, H7 and H8 can be rejected.

Figure 5.8 Simple-slope analyses



5.4.4 How does MO have a positive effect on airport performance?

The fourth question asks how MO has a positive effect on the performance of airports in EPA's and proposes that:

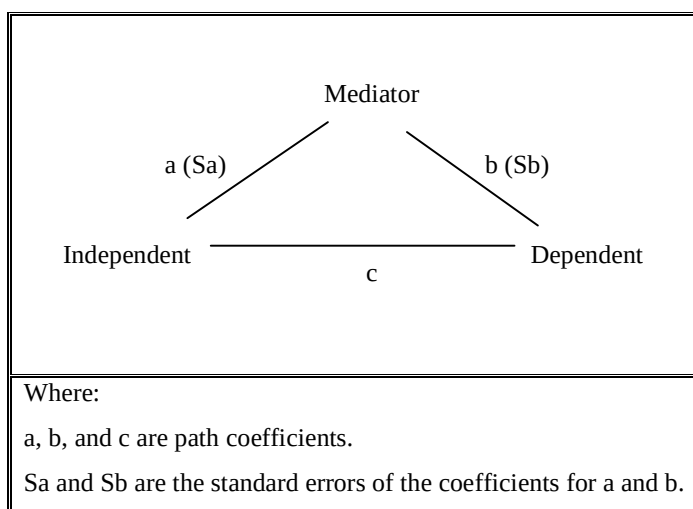
H9. The greater the level of airport marketing innovations, the stronger the relationship between MO and airport performance.

H9 seeks to test the effect of airport marketing innovations on the relationship between MO and performance.

Just as with moderating factors, a great deal has been written in previous literature about mediating factors and again, the classic paper on the topic is by Baron and Kenny (1986) (another paper of interest is provided by MacKinnon et al., 2002). Baron and Kenny state that:

“a given variable may be said to function as a mediator to the extent that it accounts for the relation between the predictor and the criterion. Mediators explain how external physical events take on internal psychological significance. Whereas moderator variables specify when certain effects will hold, mediators speak to how or why such effects occur” (Baron and Kenny, 1986; p1176).

The relationship between independent, mediator and dependent variables is illustrated in figure 5.9.

Figure 5.9 Relationship between independent, mediator and dependent variables

Source: adapted from Baron and Kenny (1986)

Mediation testing is an area where there is some agreement about the broad principles involved but some argument about the details. However, this study will follow the procedure that is recommended by Baron and Kenny (1986). They suggest that for the mediator to be a mediator of the relationship between the independent variable and the dependent variable, the following conditions have to be met:

1. The independent variable must significantly predict the dependent variable. If not, there is no relationship to mediate.
2. The independent variable must significantly predict the mediator.
3. The mediator must significantly predict the dependent variable after controlling for the independent variable.

If by adding the mediator to the prediction of the dependent variable from the independent variable in a regression model, the effect of the independent variable falls close to zero ($c = 0$), a complete mediation can be assumed. If the effect of introducing the mediator is to reduce c by a non-trivial amount but not to zero, a partial mediation can be assumed. If c is not reduced there is no mediation.

The three conditions for H9 were tested using three separate regressions. The output of the three regressions (model 1, model 2 and model 3) is provided in table 5.21.

Table 5.21 Regressions for the mediating effect of marketing innovations

	Unstandardised coefficients		Significance
	Beta	Standard error	
Model 1 (PERF as the dependent variable)			
Constant	1.337	.583	.025
MKTOR	.523	.144	.001
Model 2 (INNO as the dependent variable)			
Constant	-.219	.456	.632
MKTOR	.747	.113	.000
Model 3 (PERF as the dependent variable)			
Constant	1.480	.514	.005
MKTOR	.040	.163	.803
INNO	.645	.135	.000

As can be seen from table 5.21, the three conditions have been met. After adding the mediator to the prediction of the dependent variable from the independent variable in model 3, the effect of the independent variable falls close to 0 ($c = .040$) so a partial mediation can be assumed.

A stronger test of mediation is provided when the indirect effect of the independent variable on the dependent variable via the mediator is significantly different from zero and this is what the Sobel Test does (the Aroian Test can also be used). The equation for the Sobel Test is provided in figure 5.10.

As provided by the output in table 5.21, $a = .747$, $b = .645$, $Sa = .113$ and $Sb = .135$. These figures were entered into the Sobel Test and the output (test statistic and p-value) is provided in table 5.22.

Figure 5.10 Equation for the Sobel Test

Formula for the standard error of the indirect effect of $ab = \sqrt{(b^2 \cdot Sa^2 + a^2 \cdot Sb^2)}$
Where: a = raw (unstandardised) regression coefficient for the association between MKTOR (independent variable) and INNO (mediator). Sa = standard error of a. b = raw (unstandardised) regression coefficient for the association between INNO (mediator) and PERF (dependent variable) when MKTOR (independent variable) is also a predictor of PERF (dependent variable). Sb = standard error of b.

Source: adapted from Baron and Kenny (1986)

Table 5.22 Sobel Test

Key	Input	Test statistic	p-value
a	.747	3.872	0.000**
b	.645		
Sa	.113		
Sb	.135		

Key:

** = Significant at the .01 level (2-tailed).

Assuming a reasonable sized sample, test statistic values greater than +/-1.96 will be significant at the .05 level (2-tailed) (Preacher and Hayes, 2004) and as can be seen from table 5.22, the test statistic is 3.872 and the value is significant ($p < .01$) so a complete mediation can be assumed. This result means that 'the greater the level of marketing innovations, the stronger the relationship between MO and airport performance'. Therefore H9 can be accepted.

A final hypothesis was proposed in order to test the effect of environmental support on the relationship between innovation and performance. This is a moderating (as opposed to mediating) effect and the hypothesis states that:

H10. Environmental support strengthens the relationship between marketing innovations and airport performance.

H10 was tested using a Two-Way ANOVA analysis such as those conducted in sub-section 5.4.3. The marketing innovations variable (INNO) was dichotomised between those that on average, use marketing innovations to a great extent (i.e. scored an average of 4 for the variable when rounded to no decimal places) and those that did not (i.e. those that scored an average of less than 4 for the variable when round to no decimal places). The former was provided with an active value of 1 and the latter was provided with a base value of 0. The variable was labelled HIINNO. The active value was labelled as being ‘high’ and the base value was labelled as being ‘low’.

The environmental support variable (ENV) was dichotomised between those that on average, tended to agree or strongly agree with the relevant propositions (i.e. scored an average of between 4 and 5 for each variable, when rounded to no decimal places) and those that did not (i.e. those that scored an average of between 1 and 3 for each variable, when rounded to no decimal places). The former was provided with an active value of 1 and the latter was provided with a base value of 0. The variable was labelled HIENV. The active value was labelled as being ‘supportive’ and the base value was labelled as being ‘not supportive’.

Table 5.23 provides the interaction output for the Two-Way ANOVA test.

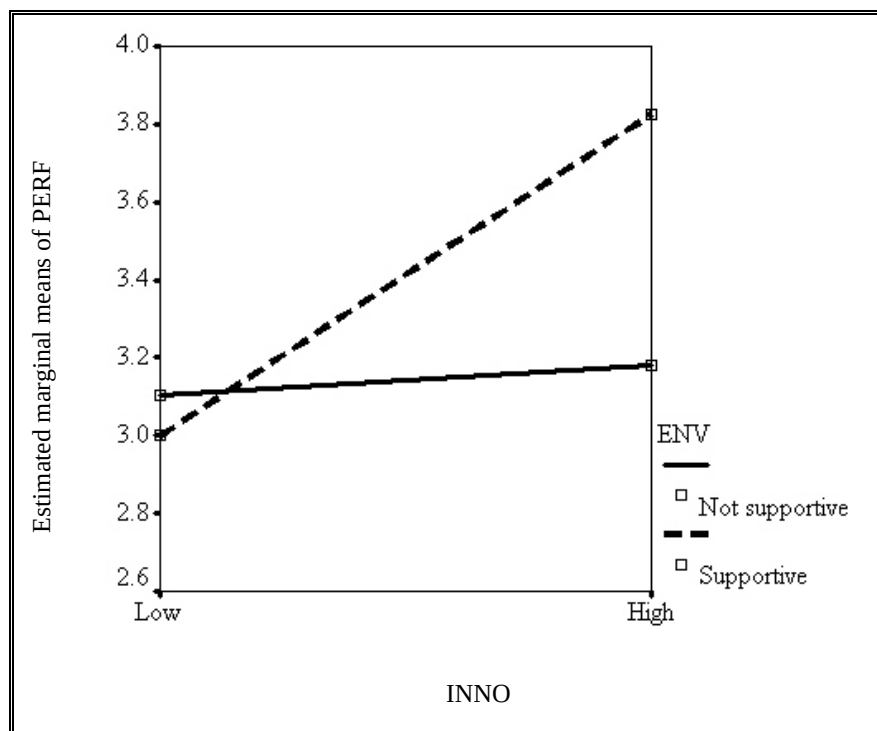
Table 5.23 Two-Way ANOVA test for moderation of ENV

Source	f-value	Significance	Partial eta squared
HIINO/HIENV (ENV)	2.672	.107	.040

Notes:

a. Dependent variable: PERF.

As can be seen from table 5.23, the interaction term of the independent variable (INNO) and the moderator (ENV) was not significant ($p=.107$) and this signals the absence of an interaction. The Simple-slope analysis in figure 5.11 confirms the absence of a significant interaction although the slope of the ‘supportive’ line does suggest that some degree of interaction is taking place.

Figure 5.11 Simple-slope analysis for moderation of ENV

The output in table 5.23 and figure 5.11 means that ‘environmental support does not affect the relationship between marketing innovations and airport performance’. Therefore H10 can be rejected.

5.5 Chapter summary

Chapter 5 has provided a detailed analysis of results from the survey. Four areas of analysis are considered: sample characteristics (section 5.1); descriptive statistics (section 5.2); reliability and validity testing (section 5.3); and, hypothesis testing (section 5.4).

An analysis of sample characteristics (section 5.1) shows that 86 airports returned usable surveys resulting in a response rate of 40%. Bias testing indicates that the sample suffers slightly from non-response bias from airports in Southern/Mediterranean Europe, smaller airports, and airports with limited technical capabilities. The sample also suffers slightly from marketing job-related bias.

Descriptive statistics (section 5.2) indicate that the focus of airports in EPA's is on developing commercial passenger services (89% of the sample) and traditional or regional air services (61%). Furthermore, only 11% of the airports focus on developing public passenger services (e.g. PSO's) and 39% of the airports focus on developing low-cost or charter services. Descriptive statistics also indicate that the distribution of dependent variables (MKTOR, INNO and PERF) is fairly normal.

Reliability testing (section 5.3) confirms that the propositions used to construct the dependent variables are internally consistent and are measuring the same aspect. Two propositions (one from the MKTOR construct and one from the INNO construct) could have been deleted in order to improve the reliability of their respective constructs. However, they were not deleted on the basis that their impact would have been minimal. Validity testing (section 5.3) confirms that the three components of MKTOR (MIG, MIS and MIR) converge.

In section 5.4, a range of statistical methods was employed to test the 10 hypotheses of this study. A summary of the results is provided in table 5.24. H1, H2, H3, H6 and H9 were accepted whilst H4, H5, H7, H8 and H10 were rejected.

Table 5.24 Summary of results from the hypotheses testing

H	Relationships	Direction	Outcome
1	Independent ownership-MO	Positive	Accepted
2	MO-performance	Positive	Accepted
3	MO-market turbulence-performance	Positive	Accepted
4	MO-competitive intensity-performance	Positive	Rejected
5	MO-public focus-performance	Negative	Rejected
6	MO-leisure focus-performance	Positive	Accepted
7	MO-market growth-performance	Positive	Rejected
8	MO-airport constraints-performance	Negative	Rejected
9	MO-innovation-performance	Positive	Accepted
10	Innovation-environmental support-performance	Positive	Rejected

6. DISCUSSION

The main objective of this chapter is to discuss the findings from the previous chapter (Chapter 5). The chapter consists of four main sections. The first section will discuss the main findings of this study within the context of relevant literature, thereby demonstrating its contribution to theory. The second section will discuss the implications that the findings have for managers of airports in EPA's and will consider relevant evidence from industry. The third section will discuss the limitations of this study and will provide recommendations for future research. The fourth section will provide a summary of the chapter.

6.1 Main findings

The aim of this study is to examine the relationship between MO and the performance of airports in EPA's. The four specific study objectives (mentioned in section 1.3) are to investigate and analyse: the application of MO to airports in EPA's; antecedents to MO at airports in EPA's; the impact of MO on the performance of airports in EPA's; and, factors that moderate or mediate the relationship between MO and the performance of airports in EPA's. The main findings for each objective will be discussed in sub-section 6.1.1 through to 6.1.4.

6.1.1 Application of MO

This study investigates MO at airports using a behavioural perspective of MO that concentrates on organisational activities related to the generation, dissemination and responsiveness to market intelligence. This study uses a construct for measuring MO that is based on the Kohli et al. (1993) construct but has been refined to meet the specific needs of this study, which focus on airports in EPA's and their relationship with airline customers.

The MO construct used in this study consists of 17 propositions and three elements (gathering market intelligence, sharing market intelligence and responding to market intelligence). Experts from industry and academia confirmed the reliability and validity of the MO construct at face value thus ensuring that the propositions used, are relevant to industry and to the research questions of this study. Statistical tests were then used to investigate the reliability of the MO construct (i.e. the internal consistency of the individual propositions used to measure MO) and the validity of the three elements used to measure MO (i.e. the extent to which the elements converge on a common construct).

The findings of this study confirm the reliability and validity of the Kohli et al. (1993) construct and support Advani (1998) in its application to the airport industry⁴². The findings of this study also support other studies that have confirmed the reliability and/or validity of the Kohli et al. (1993) construct or earlier versions of the construct (e.g. Cervera et al., 2001; Harris, 2001; Perry and Shao, 2002; Kim, 2003; Pulendran et al., 2003; Lai and Cheng, 2005; Lee and Tsai, 2005) and suggest that the construct can be used across a variety of boundaries (i.e. different industries and cultures).

Having established the reliability and validity of the MO construct, this study investigated levels of MO at airports and found that the level of MO is generally high, with most airports tending to agree that they are market-orientated. Levels of MO do vary between airports with some strongly disagreeing that they are market-orientated and others strongly agreeing. The variation in levels of MO supports the need to investigate and analyse antecedents to MO as this may help to identify factors that can enhance or impede airport MO. Antecedents to MO are discussed in sub-section 6.1.2.

⁴² Advani (1998) used an earlier version of the Kohli et al. (1993) construct provided by Jaworski and Kohli (1993).

6.1.2 Antecedents to MO

The behavioural perspective of MO suggests that antecedents such as top management emphasis, connectedness and reward systems enhance the MO of an organisation whilst risk aversion, conflict, formalisation, centralisation and departmentalisation impede MO (e.g. see Jaworski and Kohli, 1993). However, instead of testing the effect of specific antecedents to MO, this study tested the effect of ownership on MO. Rationale for this is provided in sub-section 2.3.3 and 3.1.1.

The relationship between MO and airport ownership has been previously tested by Advani (1998). His study compared levels of MO at airports that are privately-owned, expecting privatisation or publicly-owned. His study found that privately-owned airports or airports expecting privatisation have significantly higher levels of MO compared to publicly-owned airports. Whilst this study also tested for the effect of ownership on airport MO, it was not able to use a comparative categorisation of airport ownership to the one used by Advani (1998). This is because there are too few airports in EPA's that are currently privately-owned.

Three main types of ownership that can be applied to airports in EPA's have been identified by Pagliari (2005b) as being national, regional or independent and the assumption is that factors that enhance MO are likely to be more prevalent in independently-owned airports compared to airports that are regionally-owned or to a larger extent nationally-owned.

This study tested the significance of differences in MO between airports that are nationally-owned, regionally-owned and independently-owned. Whilst the difference between nationally-owned and regionally-owned airports was not significant, the difference between independently-owned airports and regionally-owned or nationally-owned airports was, and the levels of MO were significantly higher at independently-owned airports compared to regionally-owned or nationally-owned airports.

The findings of this study therefore suggest that organisational activities related to the generation, dissemination and responsiveness to market intelligence are significantly higher at airports that are independently-owned. This goes somewhat towards confirming the assumptions made in sub-section 2.3.3 that independently-owned airports are more orientated towards the needs and expectations of airline customers than regionally-owned or nationally-owned airports. The findings of this study also go somewhat towards confirming the assumptions made by Pagliari (2005b) that independently-owned airports have a greater focus on factors that are likely to be inherent in an airport that is market-orientated such as having a good local knowledge (i.e. generating market intelligence), sharing that knowledge with other stakeholders (i.e. disseminating market intelligence) and responding to that knowledge by implementing proactive marketing campaigns and dealing directly with prospective airlines (i.e. responding to market intelligence).

It is difficult to compare the findings of this study with the findings of previous studies that have investigated the relationship between MO and airport ownership because the only previous study on airport MO was conducted by Advani (1998), and his study primarily compared private versus public ownership as opposed to independent versus regional or national ownership. Despite this, all of the airports that are regionally-owned or nationally-owned in this study are publicly-owned and the few airports in this study that are privately-owned belong to the independent category of airport ownership so it can be said that the findings of this study do to some extent support the findings of Advani (1998).

Previous studies (e.g. Oum et al., 2006) have found that ownership affects the productive efficiency and profitability of airports (i.e. their operational and economic performance) and this is supported by anecdotal evidence (e.g. Leask, 2002) that suggests that a link exists between ownership and the development of airline services (i.e. airport marketing performance). However, whilst previous studies and anecdotal evidence assume that ownership has a direct effect on performance, this study suggests that ownership affects the behaviour of an airport (i.e. its MO) and that it is actually its behaviour that subsequently affects performance. The impact of MO on performance is discussed in sub-section 6.1.3.

6.1.3 Impact of MO on performance

Previous studies suggest that MO can have a direct and positive effect on company performance (e.g. Jaworski and Kohli, 1993) and the relationship is based on the assumption that companies that are market-orientated will be better equipped to satisfy customer needs and preferences, and subsequently perform better than companies that are not (Day, 1994).

This study investigated the relationship between MO and performance and used marketing performance as a measure of performance. Previous studies on the relationship between MO and performance have used different types of performance measures. For instance: Matsuno et al. (2005) use economic performance measures; Gonzáles-Benito and Gonzáles-Benito (2005) use operational performance measures; and, Sin et al. (2005) use marketing performance measures. This study uses marketing performance measures because it is concerned with the effect that MO can have on an airport's ability to attract new routes and grow and retain existing routes, which according to Ewald (2002) are functions of airport marketing.

The findings of this study show that a moderate and positive relationship exists between MO and performance and that the relationship is significant. This means that the greater the MO of an airport, the greater its performance. The relationship between MO and performance has never been tested in an airport context so the finding is somewhat unique. However, it does support studies on other industries that have confirmed a positive and significant relationship between MO and performance (e.g. Jaworski and Kohli, 1993; Slater and Narver, 1994; Atuahene-Gima, 1995; Atuahene-Gima, 1996; Pelham and Wilson, 1996; Baker and Sinkula, 1999a; Pelham, 1999; Gray et al., 2000; Hooley et al., 2003; Green et al., 2005; Sin et al., 2005).

Initial analysis in this study tested whether or not a relationship exists between MO and performance. However, further analysis was used to test for causality (i.e. the extent to

which MO can predict performance) and the analysis controlled for the impact of two environmental factors (market turbulence and competitive intensity) and two market-level factors (market growth and airport constraints). Marketing literature suggests that factors such as these may affect performance (e.g. Kotler et al., 1996; Dibb et al., 2001; Brassington and Pettitt, 2005; Kotler, 2005). In addition, Narver and Slater (1990) suggest that they must be controlled when analysing the effect of MO on performance.

In their study of commodity and non-commodity businesses, Narver and Slater (1990) tested for the effect of MO on financial performance controlling for market growth, different aspects of competitive intensity, and technological turbulence. Their study found that MO has a significant and positive effect on performance and that two of the controlling factors also have a significant effect on performance. The two significant controlling factors were technological turbulence, which has not been included in this study for reasons given in sub-section 2.3.4.2, and market growth. Both factors were found to have a negative effect on company performance, which was expected for technological turbulence (because the need for companies to continually invest in new technologies will affect their financial performance). However, it was not expected for market growth (because one would expect companies to perform well in growing markets). The rationale provided for the negative effect of market growth is that some companies may not be prepared or able to respond if market growth is short-term or unexpected. In addition, commodity businesses may be negatively affected if they are slow to adjust their production processes.

The findings of this study show that MO has a significant and positive effect on performance so the relationship between MO and performance is causal. This supports the findings of Narver and Slater (1990) and means that airport performance can be enhanced by improvements in the extent to which an airport is market-orientated. This would suggest that airline customers are responsive to airports that are market-orientated and supports the claim by Day (1994) that companies that are market-orientated will be better equipped to satisfy customer needs and preferences, and subsequently perform better than companies that are not.

Of the controlling factors, only market growth was found to have a significant effect on performance and the effect is positive. In fact, the effect of market growth on performance is much stronger than that of MO. This suggests that whilst improvements in MO can enhance airport performance, market growth has a greater impact and is, therefore, more important to the performance of an airport than MO.

Finding that market growth has a positive effect on performance supports the expected link between market growth and performance but contradicts the findings of Narver and Slater (1990) who found market growth to have a negative effect. One reason why the expected relationship between market growth and performance holds true in the context of the airport industry (as opposed to the commodity and non-commodity businesses in the study by Narver and Slater, 1990) is that airports, especially those in EPA's, are likely to have spare capacity (i.e. runway and terminal capacity) that can accommodate growth quickly. In addition, airports tend to have high fixed costs in terms of capacity, and the services provided (i.e. for passenger and aircraft handling) may not necessarily need to be increased in order to accommodate more traffic. This is not likely to be the case in an industry such as the commodity business, where market growth must be met by costly investment or increases in production.

Enhancing performance through market growth is something that airports have relatively little control over. However, airports do have control over the extent to which they are market-orientated and it could be argued that airports can use their MO to stimulate and take advantage of any market growth so whilst market growth has a greater effect on performance than MO, the two factors may complement each other in terms of their effect on performance.

Discussions in sub-section 2.3.4.2 suggest that some airports in EPA's may be constrained by limitations in infrastructure or operating conditions. These constraints are expected to have a negative effect on performance because they constrain opportunities for market growth. In controlling for the effect of airport constraints on performance, this study found

the effect to be non-significant so there is no evidence that airport constraints have a negative effect on performance. The main reason for this might be that airports are able to perform well despite any constraints. For instance, it is unlikely that retaining existing routes, and to some extent growing existing routes, is affected by airport constraints because existing airline customers would have been aware of the constraints when they decided to operate to and from the airport. Attracting new routes is more likely to be affected. However, airports may be able to overcome any constraints by focusing on certain routes or airline operations. For instance, many airports on the northwestern coast of Norway are constrained by limitations in runway infrastructure and frequent adverse weather conditions but target airlines serving domestic routes with turboprop aircraft that can cope with difficult operating conditions and shorter runways.

Market turbulence and competitive intensity were also controlled for their effect on performance and according to previous literature (e.g. Dempsey, 1990; Reynolds-Feighan, 1995; Lundvall, 2005; Pagliari, 2005a), both of these factors are a consequence of deregulation and are expected to have a negative effect on performance because they affect the ability of airports in EPA's to attract new routes and grow and retain existing routes. This study found the effect to be non-significant so there is no evidence that market turbulence or competitive intensity has a negative effect on performance. This might be because environmental factors such as market turbulence and competitive intensity are able to have both positive and negative effects on market growth and it is market growth, not environmental factors, that affects performance. This is supported by evidence that suggests that although deregulation has had negative consequences for the performance of airports in EPA's, it has also had positive consequences by facilitating the growth of leisure markets that have in some cases, acted as a replacement to the loss of traditional services (e.g. see SQW, 2002; Kealey, 2004; Lapin Liitto, 2004; Lundvall, 2005).

Knowing that MO can enhance performance strengthens the need for airports to be market-orientated. However, it does not explain when or how MO affects performance. This information is vital to airports as it will influence when or how they should be developing a

MO. These considerations have been investigated by this study within the context of moderating and mediating factors that affect the relationship between MO and performance. The effect of these factors is discussed in sub-section 6.1.4.

6.1.4 Factors that affect the relationship between MO and performance

6.1.4.1 Moderators

Previous studies suggest that a number of factors are able to moderate the relationship between MO and performance. Some studies (e.g. Diamantopoulos and Hart, 1993; Kumar et al., 1998; Harris, 2001; Kim, 2003) have found that market turbulence and competitive intensity have a positive effect on the relationship between MO and performance. Some studies (e.g. Pelham, 1997a; Matsuno and Mentzer, 2000; Kim, 2003; Wu, 2004; Matsuno et al., 2005) suggest that strategy type can moderate the relationship between MO and performance. Kim (2003) found that market growth has a positive effect on the relationship between MO and performance.

Following the logic of previous studies, six moderators were tested for their impact on the relationship between MO and performance. These were market turbulence, competitive intensity, public focus, leisure focus, market growth, and airport constraints. The first two factors are concerned with the business environment of the airport, the second two factors are concerned with the strategic focus of the airport, and the third two factors are concerned with market-level factors of demand and supply.

Market turbulence was found to have a significant and positive effect on the relationship between MO and performance. This means that the relationship between MO and performance is significantly strengthened when market turbulence (i.e. the rate of change in airline customers and their needs and preferences) is high. This is likely to be because airports that are market-orientated have a better understanding and responsiveness to airline customers than those that are not. They are also more likely to be able to adapt to change

and continually satisfy customers. Their performance is therefore likely to be enhanced by being market-orientated when market turbulence is high. The finding that market turbulence has a significant and positive effect on performance supports the findings of previous studies (e.g. Diamantopoulos and Hart, 1993; Kumar et al., 1998; Harris, 2001; Kim, 2003) but contradicts previous studies that found the effect to be negative (e.g. Slater and Narver, 1994; Greenley, 1995a) or non-significant (e.g. Jaworski and Kohli, 1993; Gray et al., 1999).

A similar assumption was made for competitive intensity (i.e. that the relationship between MO and performance is strengthened when competition between airports is intense). However, this study found the moderating effect of competitive intensity to be non-significant. As can be seen from the Simple-slope analysis in figure 5.8, MO has a fairly similar positive effect on performance when competitive intensity is both high and low. The only difference is that airports that operate in markets characterised by high competitive intensity tend to perform better than those that operate in markets characterised by low competitive intensity. This means that MO encourages competitive advantage and superior performance at airports, irrespective of the intensity of competition. The finding that competitive intensity has a non-significant effect on the relationship between MO and performance supports the findings of previous studies (e.g. Jaworski and Kohli, 1993; Slater and Narver, 1994; Gray et al., 1999; Perry and Shao, 2002; Cadogan et al., 2003) but contradicts previous studies that found the effect to be significant and positive (e.g. Diamantopoulos and Hart, 1993; Kumar et al., 1998; Harris, 2001; Kim, 2003).

In terms of airport strategy, two main types of strategy were investigated for their effect on the relationship between MO and performance: a public service focus versus a commercial service focus; and, a leisure service focus versus a traditional service focus. The assumption made in sub-section 3.1.3 was that a focus on developing public services would weaken the relationship between MO and performance. This is because public services are subsidised and determined by governments as opposed to market forces and at airports that are focused on developing such services, there is likely to be little incentive to be market-

orientated as airports with low levels of MO can still perform well. The Simple-slope analysis in figure 5.8 shows that this is the case because MO does not have any affect on performance when airports are focused on developing public services. However, hypothesis H5 in sub-section 3.1.3 proposed that a focus on public services would weaken the relationship between MO and performance, and as is clear from figure 5.8, this is not the case. In comparison, the effect of MO on performance is strengthened when airports are focused on developing commercial services although the effect is not particularly strong (the estimated marginal means of performance increases from 3.1 for airports with a low MO to 3.6 for airports with a high MO).

Despite the non-significant effect of a public service focus, this study found the effect of a focus on leisure services (as opposed to traditional services) to be significant and positive. The Simple-slope analysis in figure 5.8 shows that the effect of MO on performance at airports with a focus on developing traditional services such as those that are operated by traditional mainline or regional carriers is minimal. In comparison, MO has a significant and positive effect on performance at airports with a focus on developing leisure services such as those that are operated by charter or low-cost carriers.

The effect of leisure services supports the assumptions made in sub-section 3.1.3 that leisure services are extremely market-driven and that because of their propensity to serve point-to-point routes, they are likely to transfer their operations to other airports if they do not prove to be commercially viable and/or if their needs and preferences are not satisfied. This is less likely to be the case for traditional services that provide public services or scheduled hub connections, where the public service orientation or hub feed to onward flights reduces the need for individual routes (i.e. to airports in EPA's) to be commercially viable. Operators of traditional services are less likely to leave an airport if their needs and preferences are not met because the focus of such carriers is likely to be more on network coverage than on the performance of individual routes. This may change as traditional carriers adopt new models in order to compete with leisure carriers and evidence of this taking place is provided by the fact that many traditional mainline carriers are adopting a

low-cost model in short-haul markets and that many traditional regional carriers are transforming into low-cost carriers (the examples of Norwegian in Norway and FlyMe in Sweden were provided in sub-section 4.3.1.7 to emphasise this point).

The finding that a focus on leisure services has a significant and positive effect on performance cannot be compared to previous studies as strategic focus has never been investigated before in this context (it is usually investigated in the context of whether a company is pursuing a low-cost, differentiation or focus strategy). Two other factors that are rarely investigated for their effect on the relationship between MO and performance are the market-level factors of market growth (i.e. demand) and airport constraints (i.e. supply). The moderating effect of both factors was investigated by this study and the effect of both factors was found to be non-significant.

When the direct effect of MO on performance was investigated and controlled for, market growth was found to have a significant and positive effect on performance. This has already been discussed in sub-section 6.1.3. This may lead to the assumption that market growth is able to moderate the relationship between MO and performance. However, the fact that market growth is itself able to affect performance means that this is not the case because even with a low MO, the performance of an airport can be enhanced by high market growth. Similarly, when MO is high, the performance of an airport can be impeded by low market growth. This is illustrated by the Simple-slope analysis in figure 5.8, which shows that both low and high market growth is able to moderate the relationship between MO and performance and that the effect of high market growth is minimal (the estimated marginal means of performance increases from 3.3 for airports with a low MO to 3.7 for airports with a high MO).

The findings for the effect of airport constraints are similar to that of market growth in that they are non-significant. This means that constraints in the supply of airport infrastructure and operations do not significantly weaken the relationship between MO and performance. In fact, as can be seen from the Simple-slope analysis in figure 5.8, although performance is

likely to be better at airports that are not constrained, MO has a strong and positive effect on performance when airports are both constrained and not constrained. This suggests that even constrained airports can use MO to improve performance and the rationale for this might be that whilst constraints may limit the ability for airports to attract new routes and grow some of their existing routes, it does not affect all opportunities for growth and performance can still be enhanced through their understanding and responsiveness to existing or potential airline customers. This was discussed in sub-section 6.1.3 when the direct effect of MO on performance whilst controlling for airport constraints was considered.

In summary, the findings of this study show that only two factors (market turbulence and a focus on developing leisure services) have a significant moderating effect on the relationship between MO and performance and that the effect of both factors is positive. This means that the relationship between MO and performance is particularly strong when market turbulence is high and/or when airports are focused on developing leisure services.

6.1.4.2 Mediators

Previous studies (e.g. Han et al., 1998; Agarwal et al., 2003; Maydeu-Olivares and Lado, 2003) have found that innovation can mediate the relationship between MO and performance. The assumption here is that MO encourages companies to be more innovative, which subsequently improves performance (Agarwal et al., 2003).

Slater and Narver (1995) suggest that service companies can innovate by developing new or improved services, creating new distribution channels, and discovering new approaches to management. These innovations are related to marketing strategies and techniques, as they are largely concerned with elements of the marketing mix. Expanding on this, Halpern (2005; 2007) demonstrates how airports in EPA's can innovate with their marketing mix (e.g. by improving their management processes, modifying their facilities or services, offering flexibility in pricing and developing joint advertising or promotional campaigns).

In light of previous studies, this study investigates the mediating effect of airport marketing innovations on the relationship between MO and performance and measures airport marketing innovations according to the extent to which airports innovate with their marketing mix.

The findings of this study show that airport marketing innovations do have a positive mediating effect on the relationship between MO and performance. This means that MO has a positive effect on performance because airports are more likely to be more innovative in their approach to airport marketing.

Previous studies have investigated different types of innovation in different industries and cultures. For example, Han et al. (1998) found that administrative and technical innovations mediate the relationship between MO and the performance of banks in a Mid-western state of the USA. Maydeu-Olivares and Lado (2003) found that innovation degree and performance (measured according to the rate and success of new products/services) mediate the relationship between MO and the performance of insurance companies in the EU. Agarwal et al. (2003) found that innovation (measured according to the propensity to invest in generating new capabilities and figuring out new ways to serve customers) mediates the relationship between MO and the performance of international hotels. The findings of this study support the findings of previous studies but contribute a new area of investigation in that this study has investigated the effect of marketing innovations on the relationship between MO and the performance of airports in EPA's.

Gray et al. (2000) suggest that innovation is likely to enhance performance when environmental conditions are supportive (i.e. in markets where customer preferences are changing rapidly, where competition is intense, where production lifecycles are shortening and maturing, and/or where differentiation is limited). This has been referred to by Han et al. (1998) as being an innovation-friendly environment and incorporates environmental and market-level factors relating to market turbulence, competitive intensity, demand and supply.

In line with Gray et al. (2000), this study investigated whether environmental support strengthens the relationship between marketing innovations and the performance of airports in EPA's. The findings of this study show that environmental support has a non-significant moderating effect on the relationship between marketing innovations and performance. The Simple-slope analysis in figure 5.11 confirms the non-significant effect because it shows that although environmental support is likely to enhance performance at airports with high marketing innovations, the performance of airports with low marketing innovations is similar in environments that are both supportive and not supportive (estimated marginal means of performance are 3.1 and 3.0 respectively). The non-significant moderating effect of environmental support implies that airports, irrespective of the nature of their environmental or market-level conditions, should adopt innovative marketing practices.

6.2 Managerial implications

The findings of this study have a number of implications for managers of airports in EPA's. These implications will be discussed under three main sub-sections. The first sub-section (6.2.1) will discuss how airport managers can make use of the MO construct. The second sub-section (6.2.2) will discuss different forms of airport governance. The third sub-section (6.2.3) will discuss when and how airports can use MO to improve performance. Case studies and examples from industry will be incorporated into the discussion in order to reflect on how the findings of this study relate to the real world of airport management.

6.2.1 Making use of the MO construct

The findings of this study show that MO is critical to the success of airports in EPA's, at least within the context of airline-related MO and airport marketing performance. This suggests that airports in EPA's must adopt market-driven management practices as a means of satisfying airline customers.

The findings of this study show that market growth is also critical to the success of airports in EPA's and whilst this is something airports have relatively little control over, they can use the elements of MO (i.e. gathering, disseminating and responding to market intelligence) to try to stimulate growth. This proactive approach to market growth has been taken by a number of airports in EPA's in recent years, especially those that have been trying to stimulate growth in inbound tourism and/or the trade of imports and exports. The example of Aberdeen Airport was provided in sub-section 2.3.5.2 and demonstrates how the airport has been proactive in gathering market intelligence on its local catchment area and on the potential for growth. Staff at the airport have collaborated with each other, but also with local stakeholders, in order to gather and disseminate that intelligence. The intelligence has then been used to make necessary changes or improvements to the airport product or service, and to proactively target existing or potential airlines. This proactive approach to market growth is very different to the traditional reactive approach of airports during the regulated era where marketing activities were fairly passive (Graham, 2003a) and where market growth was largely determined by government decisions (Williams, 2002).

Airports wishing to outperform competitors by attracting new routes and growing and retaining existing routes can do so by adopting a MO and should, therefore, seek to continually monitor and improve the way in which they gather, disseminate and respond to market intelligence. The 17 propositions that have been developed for this study as a measure of MO can be used as a diagnostic tool to identify areas where airport MO is weak and where specific improvements are needed. The propositions used to measure MO can evolve over time, adapting to changes in the airport and its business environment, and the propositions can be turned into specific and measurable management targets.

Benchmarks or norms can also be developed and used to periodically monitor airport processes and management behaviour and to measure the effectiveness of any changes (i.e. the impact of increases in expenditure on 'in-house' market research). External

benchmarking can be established in order to provide comparisons with similar or competing airports.

Although this study shows airports that engage in market-orientated activities are likely to perform better than those that do not, simply engaging in market-orientated activities does not ensure that the desired consequences of those activities will be met. For instance, the quality of market intelligence that is gathered and disseminated may be questionable or the response to market intelligence may be inappropriate. Human resource departments can reduce the margin for error by identifying the key skills and management competencies that are required to implement a MO and develop training programmes to improve the organisation-wide understanding of the activities involved in developing a MO. Senior managers can then try to develop a corporate culture that reinforces behaviours that are consistent with MO and can use the MO construct to develop relevant and effective marketing innovations.

Unfortunately, this study did not investigate the effect that specific organisational factors such as senior management factors, interdepartmental dynamics or organisational systems can have on MO (i.e. antecedents to MO). The effect of organisational factors has been investigated by previous MO studies (e.g. Jaworski and Kohli, 1993) and can be used by managers to enhance the MO of their company. However, based on the findings of Advani (1998), it would appear that a senior management emphasis and the use of reward systems can be used to enhance MO at airports.

Investing in activities that can enhance MO such as market research, information and communication systems, staff training and development, a senior management emphasis (i.e. management time) and the use of reward systems sounds like a costly exercise. However, many of these activities are probably already used by airports but not in the context of developing a MO. For instance, airports are likely to gather and disseminate data on operational capabilities and procedures (but not necessarily on markets and their customers), staff are likely to be recruited on the basis of formal operational qualifications

and be trained in procedural etiquette (but may not be recruited from or trained in market sensing and customer service capabilities), senior managers are likely to place an emphasis on operations (but not necessarily on markets and customers), and reward systems are likely to be focused on operational targets (but not necessarily on route development or customer satisfaction targets). Adopting a market-orientated approach to airport management could therefore be adopted at minimal or no extra cost and although their study does not focus on airports, Harris and Piercy (1997) investigate the cost of becoming market-orientated and advocate that MO is free.

In addition to showing that a senior management emphasis and the use of reward systems can be used to enhance MO at airports, Advani (1998) found that private ownership (as opposed to public ownership) enhances MO at airports. The following discussion (subsection 6.2.2) will consider the different forms of ownership at airports in EPA's in terms of the approaches taken to airport governance⁴³, the advantages and disadvantages of different types of governance, and the effect that different types of governance might have on the MO of an airport.

6.2.2 Different forms of airport governance

As can be seen from Appendix D, national ownership models are most common at airports in EPA's and the ownership of such airports is dominated by a small number of very large national airports systems. Some of these national airport systems are owned by government agencies (e.g. the Icelandic CAA and the Greek CAA). However, the trend in recent years has been for governments to appoint state-owned management companies (e.g. Avinor in Norway, LfV in Sweden, Finavia in Finland, ANA in Portugal, and AENA in Spain). The rationale for retaining national ownership is varied. For instance, it supports

⁴³ Governance deals with the processes and systems by which an organisation operates and although most airports in EPA's are owned by a government authority or agency (i.e. the government is the administrator of the processes and systems), different types of management can exist. Modes of governance at airports in EPA's are extremely diverse and to consider ownership (i.e. national, regional and independent) alone would not provide an accurate enough picture of such airports.

the protection of national assets, preserves essential social links for remote communities, ensures the provision of safe operations, and allows less profitable airports or airport developments to be cross-subsidised by those that are more profitable. Similar rationale applies to regionally-owned airport systems such as the one in the Highlands and Islands of Scotland that is managed by HIAL, which is owned and funded by the Scottish Executive.

The appointment of an airport management company appears to be in response to the changing business environment as most of the appointments at airports in EPA's have taken place during or after the deregulation of air transport markets in Europe⁴⁴.

The appointment of an airport management company enables governments to retain overall ownership of their national or regional airport system, whilst encouraging it to be managed in a more market-orientated and business-like manner. However, the nature of the national or regional airport system means that their ability to develop a MO is still likely to be constrained by factors such as centralised decision-making processes, vaguely defined objectives and a susceptibility to changes in political agendas. These considerations are summarised by the business concept of LFV, which is to: "generate added value for its customers and promote air travel by operating cost efficient, safe and well managed airports and air navigation services. The LFV Group will in a business-like and profitable manner contribute to the fulfilment of transport policy objectives" (Luftfartsverket, 2006). The corporate values of creating added value for customers and a business-like and profitable company support the development of a MO. However, they are constrained by the size of the LFV Group and the focus on fulfilling transport policy objectives.

⁴⁴ HIAL was created in 1986, AENA in 1990, ANA in 1998, Avinor in 2003, LFV in 2005 and Finavia in 2006.

One of the main consequences of deregulation was the move towards airport privatisation, which started in the UK in 1987 with the privatisation of a number of airports to create the company that is now known as BAA⁴⁵.

The underlying assumption for airport privatisation is that it leads to greater efficiency, a better quality of service, and a reduction in the need for government expenditure (Bruijne et al., 2006). It can also lead to reduced government control, the ability to diversify (i.e. into commercial activities), and free access to commercial markets. The ability to increase efficiency, provide a better quality of service, and reduce government control can be considered as management behaviours that are conducive to MO and explain why airports that are privately-owned are likely to have relatively high levels of MO. Indeed, Advani (1998) used MO as an indicator of service quality and found that privately-owned airports have significantly higher levels of MO than publicly-owned airports.

Although increasing numbers of airports are being privatised across Europe (Bentley, 2002), very few airports in EPA's have followed the trend. In fact, of the 217 airports in this study only five airports are fully owned by private interests. These are Aberdeen Airport (owned by BAA), Belfast International Airport (owned by TBI), Belfast City Airport (owned by Ferrovial), Linköping Airport (owned by the SAAB motor company) and Malta International Airport (owned by Malta International Airport⁴⁶). These airports are larger airports (i.e. international or community connecting points) that serve large urban areas or industries such as Aberdeen (Scotland's third largest city and the largest oil-related centre in Europe), Belfast (the capital city of Northern Ireland), Linköping (of strategic

⁴⁵ The UK Airport Act was passed in 1986 and mandated the privatisation of a number of airports in the UK. The company created to own and operate the airports is called BAA, formerly known as the British Airports Authority. BAA currently owns and operates seven UK airports (London Heathrow Airport, London Gatwick Airport, London Stansted Airport, Glasgow Airport, Edinburgh Airport, Aberdeen Airport and Southampton Airport) and operates several airports worldwide. In July 2006, BAA was taken over by a consortium led by the Ferrovial Group.

⁴⁶ Malta International Airport was a government-owned company created in 1991 to manage the terminal at Malta International Airport. In 1998, Malta International Airport took responsibility for the entire airport. In 2002, 40% of Malta International Airport was bought by the Malta Mediterranean Link Consortium, which is made up of a number of stakeholders including the owners of Vienna International Airport (Flughafen Wien). A further 20% of Malta International Airport was sold by the government in 2002 and another 20% in 2005.

importance to the SAAB motor company) and Malta (a country and a major tourist destination).

The reason why full privatisations are limited to larger airports is that airports tend to have high fixed costs and therefore generally need to reach a certain threshold (i.e. one million passengers per annum) before they are able to become profitable or take advantage of opportunities to diversify. Airports that fall short of the required threshold may find it difficult to attract private investors and it is likely that they will need to maintain some kind of public support. As a result, a few airports in EPA's have developed mixed ownership models that consist of both private and public interests (e.g. Olbia Costa Smeralda Airport, which is 80% owned by private interests and 20% owned by local interests; Sligo Airport, which is 50% owned by private interests and 50% owned by local interests).

The number of airports with mixed ownership models in EPA's is currently very small but it is likely that the number of airports adopting this type of ownership will increase in the future as it enables local communities to maintain an element of control over their airport whilst raising capital for future developments and encouraging management behaviours that are conducive to MO.

From an airline's point of view, full or partial airport privatisation appears to be of great benefit because it can improve efficiency and quality of service, reduce government control, and improve access to financial markets that can support airport development. However, airport privatisation also comes with a number of disadvantages for airlines such as the desire of the airport to maximise profits and shareholder value, and the potential to develop and abuse a monopoly situation. This means that privately-owned airports may be too profit-focused and may be inclined to raise the prices that they charge to airlines or reduce the quality of services provided. A focus on profit is considered to be an integral part of the MO construct from the cultural perspective of MO (e.g. Narver and Slater, 1990) but, in this situation, the focus on profit could impede MO, as it could result in an increase in prices or a reduced quality of service.

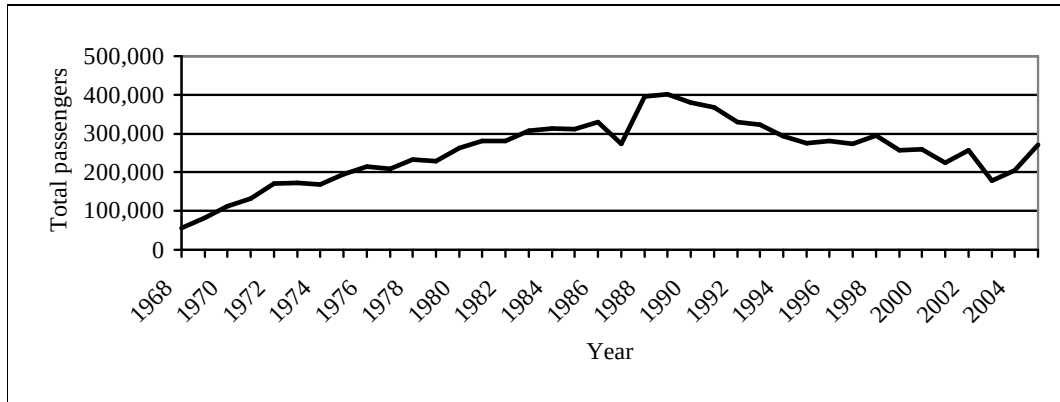
Some governments or local authorities in EPA's have contracted private management companies to take over the management of parts or all of an airport or airports as a Public Private Partnership (PPP). For example, Newquay Airport is owned by Cornwall County Council and managed by Serco⁴⁷. This is similar to the approach taken by owners of national or regional airport systems that have appointed management companies although, in this instance, the airports do not belong to a national or regional airport system and the management company is a private entity. Similarly to mixed ownership models, this approach enables governments to maintain an element of control over their airports whilst encouraging management behaviours that are conducive to MO. Case study 1 is on Grenoble-Isère Airport and provides an example of the impact that a management contract can have on the MO and subsequent performance of an airport that is publicly-owned.

Case study 1 - Grenoble-Isère Airport management contract

Grenoble-Isère Airport is located in the Rhône-Alps mountain region of France. The airport was originally conceived and constructed for the 1968 Winter Olympic Games. The airport is owned by the French Government and was traditionally managed by a local authority (the Isère Departmental Council).

In December 2003, the management of the Grenoble-Isère Airport was entrusted to the Lyon Chamber of Commerce. At the same time, the airport recorded its lowest number of passengers since 1974, attracting a total of just 178,037 passengers in 2003 (Grenoble-Isère Airport, 2006a). The low-point in 2003 was preceded by steadily declining passenger numbers throughout the 1990's and early 2000's. This was characteristic of regional airports in France during the early stages of European deregulation. Passenger numbers at Grenoble-Isère Airport between 1968 and 2005 can be seen in figure 6.1.

⁴⁷ The Serco Group is an international task management company that specialises in facilities management and systems engineering. They were awarded a four-year contract in April 2003 to manage the airport terminal and car park. The contract requires limited capital expenditure from Serco and involves a 50/50 share of the profits between Serco and Cornwall County Council. Service level agreements (i.e. standards of service that must be met by Serco) are built into the contract between Serco and Cornwall County Council.

Figure 6.1 Total passengers at Grenoble-Isère Airport, 1968-2005

Source: Grenoble-Isère Airport (2006a)

In January 2004, the Isère Departmental Council awarded a five-year contract for the management and development of the airport to a privately-owned joint venture called Société d'Exploitation de l'Aéroport de Grenoble (SEAG), the first PPP of its kind for a regional airport in France. SEAG is a 50/50 joint venture between two private partners, Keolis⁴⁸ and Vinci⁴⁹. SEAG immediately set about improving the efficiency of operations at the airport and established a Marketing Department to work on attracting air services.

The Business Area of the airport website⁵⁰ demonstrates the value that the new management company has in gathering, disseminating and responding to market intelligence. It provides comprehensive information for prospective airline customers on the region and its assets, the catchment area, the positioning of the airport, the region's business opportunities (this includes information on the Alpine Arc, the Rhône-Alps answer to the Silicon Valley), market research, airport data and services, and tariffs and fees. The latter includes price incentives that are promoted on the airport website for their ability to cater to all market segments and for being simple, competitive, modern,

⁴⁸ The Keolis Group operates passenger transport systems on behalf of transport authorities in Europe and Canada.

⁴⁹ The Vinci Group began as a construction company but has, in recent years, become a major European concessionaire operating transport infrastructure such as airports, toll roads, car parks, bridges and terminals.

⁵⁰ Grenoble Airport website is at www.grenoble-aeroport.fr.

transparent, non-discriminatory, and consistent with EC recommendations.

The airports current Tariff Regulations (Grenoble-Isère Airport, 2006b) offer a 1 Euro discount per departing passenger for the first year of operation for every new passenger service destination route. The Tariff Regulations also offer a 1 Euro discount per actual incremental departing passenger on existing routes. Marketing innovations such as the price incentives used by Grenoble-Isère Airport aim to improve the marketing performance of the airport by attracting new routes and growing and retaining existing routes.

As can be seen from figure 6.1, passenger numbers at Grenoble-Isère Airport have increased sharply since the management contract was awarded in January 2004 with growth rates of 15% in 2004 and 33% in 2005. The airport served a total of 270,985 passengers in 2005, which is a vast improvement on the low of 178,037 in 2003. The airport has been especially successful in attracting leisure services and currently serves the following scheduled low-cost carriers:

- Ryanair with flights from London Stansted Airport, Dublin Airport, Brussels South Charleroi Airport, Glasgow Prestwick International Airport, Liverpool John Lennon Airport, and Nottingham East Midlands Airport;
- blu-express with flights from Rome Fiumicino Airport;
- easyJet with flights from London Luton Airport, London Gatwick Airport and Bristol Airport;
- SkyEurope with flights from Prague Airport;
- Thomsonfly with flights from Coventry Airport and Bournemouth Airport;
- centralwings with flights from Warsaw Airport; and,
- Wizz Air with flights from Warsaw Airport.

The airport also serves a number of charter carriers such as First Choice Airways, Monarch Airlines and MyTravel. These carriers provide mainly inbound services to the Rhône-Alps

region.

In July 2004, Keolis and Vinci secured a seven-year contract for the management and development of Chambéry Airport, which is also located in the Rhône-Alps mountain region of France. This PPP was awarded by the Savoie Departmental Council.

Jean-Pierre Marchand-Arpoumé, President Directeur Général of the Vinci Group believes that a second wave of PPP's is around the corner for the European airport industry but warns:

“I don't think that there are all that many good opportunities as yet. Air transport generally might go through some difficult times if the oil price remains high for an extended period. Owners will be careful about putting facilities to the market if they could possibly be harmed by skyrocketing oil prices” (Jean-Pierre Marchand-Arpoumé. In Frank-Keynes, 2004; p32).

The quote from Jean-Pierre Marchand-Arpoumé emphasises the fact that private management companies enter into such agreements in order to maximise profits and shareholder value. This means that the management company may be too profit-focused and just as with privately-owned airports, the focus on profit could impede the airport's MO as it could result in an increase in prices or a reduced quality of service. This is why at some airports such as Newquay Airport; the owners of the airport (Cornwall County Council) have set service level agreements for the management company (Serco) to adhere to.

HIAL, the owners of Inverness Airport, used a private management contract called a Private Finance Initiative (PFI) in order to fund the development of a new airport terminal at the end of the 1990's. The PFI at Inverness Airport was similar to the PPP's that are currently used by Grenoble Airport, Chambéry Airport and Newquay Airport. However, the rationale for the PFI at Inverness Airport was more about funding the cost of new

infrastructure as opposed to encouraging market-orientated management practices. Despite this, the PFI at Inverness Airport is worth mentioning because the contract actually acted as a disincentive for HIAL to develop air services to and from the airport.

The PFI contract was awarded in February 1998 to Inverness Airport Terminal Limited (IATL)⁵¹ and allowed IATL 25-years to build and then manage a new terminal at Inverness Airport. The new terminal cost IATL about 9 million British Pounds to build and in return, IATL were paid about 3 British Pounds per arriving and departing passenger by HIAL (Ross, 2005). When the PFI contract was signed, it was envisaged that the costs of the passenger charges paid by HIAL to IATL would be offset by a growth in aeronautical revenues, such as the landing charges that are payable by airlines to HIAL. However, the airport has been focused on attracting low-cost carriers in recent years and has accepted little or no growth in landing charges in order to attract new services. This has meant that even though HIAL has secured a number of new services in recent years, it has been at a significant cost to the company. According to a press release from the Scottish Executive, the PFI passenger charge cost HIAL almost 8.5 million British Pounds during the first six years of the contract and almost 2 million British Pounds in the year 2004/05 (Scottish Executive, 2006).

The structure of the PFI contract acted as a disincentive for HIAL to develop air services to and from the airport and as a result, the Scottish Executive funded a deal in January 2006 for HIAL to buy-out the contract from IATL at a cost of 27.5 million British Pounds (Scottish Executive, 2006).

More recently, airlines appear to be demonstrating a growing interest in airports that are both locally-owned and managed (i.e. by one or a number of local authorities or chambers of commerce). This is because such airports are more likely to have a strong local knowledge, offer wide support from the region and its stakeholders, and be keen to support

⁵¹ IATL is owned by I2 – an investment company that is part-owned by Barclays Bank, Société Générale and 3i.

airport development due to its potential for generating regional economic development (i.e. by creating jobs and attracting tourism and industry). The desire to attract airlines to such airports has often led to reduced or discounted aeronautical charges and/or the provision of marketing support. This offers a greater degree of risk sharing between the airport and its airline customers and has been especially popular with low-cost carriers, the concentration of which seems to be high at airports that are locally-owned and managed (Pagliari, 2005b).

29 regional airports in Sweden are owned and managed by a local authority or a combination of local authorities. However, many of these airports used to belong to the National Airport System, which is currently operated by LFV and consists of 18 airports. For example, LFV sold Halmstad Airport to Halmstad Council in 2001 and transferred management responsibilities to the council in 2006. More recently, LFV has been considering the hand-over of management and development responsibility of three more airports (Norrköping Airport, Jönköping Airport and Karlstad Airport) to their respective local authority. These airports are recording significant losses and are located in areas where other modes of transport are available. LFV feels that it is not in a position to change the downward trend in traffic at these airports and that it should not be the responsibility of the state to manage airports where other modes of transport are available. LFV also feels that the airports may benefit more from being managed at a local level, for many of the reasons that are stated in the previous paragraph.

The first and only significant airport decentralisation programme that has taken place has been outside of Europe, in Canada. The programme was launched in 1994 and involved the phased transfer of 64 regional/local and small airports from the National Airport System to local authorities. The rationale for this was grounded in the idea that: “locally-owned and operated airports are able to function in a more commercial and cost-efficient manner, are more responsive to local needs and are better able to match levels of service to local demand” (Transport Canada, 2006). Transport Canada conducted a study on Canada’s regional/local and small airports in 2004 in order to evaluate the impacts of the decentralisation programme (e.g. see Transport Canada, 2004). The focus of the report is

on the financial performance of airports and their responsiveness to local stakeholders, both of which have experienced neutral or positive changes since decentralisation.

Unfortunately, the report does not consider market-related changes so it is not possible to assess the effect that decentralisation has had on the MO or marketing performance of the airports.

It is worth noting that in Norway, the opposite has been the case in that Norway's network of 27 regional airports used to be owned by local authorities but from 1998, the state took over responsibility (Bråthen and Eriksen, 2006). This was partly because of the desire to harmonise safety standards across all airports but also because, just as fully privatised airports may seek to maximise profits and shareholder value, airports that are fully owned by local authorities may have financial motives that affect their relationship with airline customers. For instance, locally-owned airports may be inclined to use the revenue generated by their airport for other local services such as health and education as opposed to using it for airport development.

Local owners may also be reluctant to use tax payers' money for airport development and instead tax the users of the airport. A recent example of the tensions that can develop is provided by Newquay Airport where Ryanair has been rapidly growing its services from London Stansted Airport. Cornwall County Council (owners of Newquay Airport) introduced a Passenger Surcharge in October 2005 of 5 British Pounds tax per departing passenger, which the council claimed was necessary to help fund a 2.8 million British Pounds expansion programme to improve facilities for the forecast growth in passenger numbers at the airport. However, Ryanair protested against what they considered to be an anti-visitor tax that would simply increase revenue for the council and would increase the cost of visiting the region for their passengers, which they feared could ultimately affect their passenger numbers⁵².

⁵² More details on this story can be found on the BBC news website (e.g. see www.news.bbc.co.uk/1/hi/england/cornwall/4461132.stm)

A model of local ownership combined with private minority interests appears to offer the best opportunity for airports in EPA's that want to develop a MO. This is because local owners (and other local stakeholders) are best placed to understand and respond to changes in the marketplace and are likely to support airport development due to its role in facilitating regional economic development. Contributions from private investors will then enable local owners to access financial markets, ensure that the interests of the users are satisfied, and lead to a more efficient airport operation and a more market-orientated approach to airport management. Full privatisation can also enhance an airport's MO but may lead to an abuse of monopoly power or under-investment, in favour of maximising profit and shareholder value.

Sandefjord Torp Airport is one of only a few airports in Norway that is not owned by the national airport company, Avinor, and provides a good example of an airport that is under local ownership combined with private minority interests. The airport is mainly locally-owned (Vestfold County Municipality 43.3%, Sandefjord Municipality 35.7%, Stokke Municipality 7.5%) but also has a private investor (Vestfold Flyplass Invest 13.5%). The airport has traditionally been popular with charter carriers (as an alternative to Oslo Gardermoen Airport) but in recent years, the airport has experienced rapid growth from low-cost carriers such as Ryanair (with flights from Frankfurt Hahn Airport, London Stansted Airport, Glasgow Prestwick International Airport, Milan Bergamo Airport, Liverpool John Lennon Airport and Newcastle Airport) and Wizz Air (with flights from Katowice Airport). Local ownership enables the airport to maintain links and support from local stakeholders that are keen to be involved in the growth of the airport whilst private interests enable the airport to fund essential airport developments and commercial activities.

Oum et al. (2006) suggest that majority private ownership is preferable to minority private ownership when local and private interests are combined. However, their study was based on how ownership affects the operational and economic performance of the world's major airports, where the potential for a return on investment is likely to be much higher than at

smaller airports in EPA's. As was mentioned earlier in this sub-section, airports generally need to reach a certain threshold before private ownership becomes possible and most of the airports in EPA's will be below that threshold so their ability to attract majority private interests may be limited.

6.2.3 Using MO to improve performance

So far, management implications have been concerned with the direct effect of MO on performance and the advantages and disadvantages of different forms of governance. However, another aspect of this study that has important implications for the managers of airports in EPA's is when and how MO can be used to improve performance.

The findings of this study show that the relationship between MO and performance is particularly strong when market turbulence is high and/or when airports are focused on developing leisure services. Both of these aspects are consequences of deregulation. For instance, studies show that air services to airports in EPA's are increasingly dictated by unpredictable and rapidly changing market forces rather than public service considerations (e.g. Reynolds-Feighan, 1995) and the growth in leisure markets is increasingly replacing the loss of traditional scheduled services at airports in EPA's (e.g. SQW, 2002; Kealey, 2004; Lapin Liitto, 2004). This is not likely to be the case at all airports in EPA's. However, for those airports that do operate in turbulent markets and/or have a focus on developing leisure services, the development of a MO is vital and can significantly enhance their ability to attract new routes and grow and retain existing routes.

Having an understanding of when MO can improve performance is of interest to airport managers. However, having an understanding of how MO can improve performance provides a better understanding of the management practices that can influence performance.

This study tested for the mediating effect of marketing innovations and the findings show that marketing innovations have a positive effect on the relationship between MO and performance. This means that MO has a positive effect on performance because airports are more likely to be innovative in their approach to marketing. Airports should therefore coordinate marketing strategies and tactics that will optimise future performance and should develop a corporate culture that emphasises an innovative approach to marketing. This calls for the need to invest in marketing-related airport activities, with appropriate financial and human resources, and managers should monitor and assess the effectiveness of additional resources or the implementation of different marketing innovations.

The allocation of resources to airport marketing may vary between airports and may be affected by the type of airport ownership. For instance, national or regional ownership allows for greater resources for marketing because of economies of scale. However, it may also mean that marketing efforts are concentrated on the larger airports in the group or may have a national (as opposed to local) perspective. For example, the organisational structure of Avinor indicates that each of the large airports in the group (Bergen Airport, Stavanger Airport, Trondheim Airport, Bodø Airport and Tromsø Airport) has its own marketing department. However, the marketing activities of the 11 medium airports and 29 regional airports are likely to be coordinated centrally or by the management of their respective division. In addition, Avinor conducts a lot of in-house market research on passenger markets (e.g. see Avinor, 2003a; 2003b). However, the research is nationally-based and although locally-based research is likely to be conducted on an ad-hoc basis, the resources available to medium or regional airports to conduct such research are likely to be minimal.

The ability of independent airports to invest in marketing, especially those that are locally-owned, is likely to be limited because of their small economies of scale. However, as was mentioned in sub-section 2.3.5.2, airports that are locally-owned can collaborate more easily with local stakeholders in order to pool resources and establish strategic marketing partnerships.

Evidence suggests that innovations only contribute to performance in markets that are turbulent, where competition is intense, and when markets are maturing and differentiation is limited (Gray et al., 2000) so this study tested whether the relationship between innovation and performance is moderated by an innovation-friendly environment that is contingent on environmental factors (e.g. in markets that are turbulent and where competition is intense) and market-level factors (e.g. when market growth and opportunities for airports to diversify are limited).

The findings of this study provide no evidence to suggest that the relationship between innovation and performance is moderated by an innovation-friendly environment, which means that the relationship will not necessarily be at its strongest when conditions are most supportive. The implication for managers is that they should try to develop innovative marketing practices, irrespective of whether or not they operate in an innovation-friendly environment. They should also try to develop a market-orientated culture with innovative marketing practices in mind, and visa versa.

Many academics and industry observers have been monitoring and advocating the growing interest in airport marketing (e.g. Reantragoon, 1994; Humphreys and Gardner, 1995; Young, 1996; Feldman and Shields, 1998; Ewald, 2001; Jarach, 2001; Graham, 2003a; Schwartz, 2003; Jarach, 2005; Vowles and Mertens, 2005). Although the literature does not specifically refer to MO, it does support the notion that airports increasingly need to develop market-orientated management practices and suggests that the performance of airports is likely to be enhanced by the implementation of innovative marketing practices, which as this study has found, can occur as a result of being market-orientated.

Case study 1 has already provided evidence in support of the effect that MO can have on the performance of airports in EPA's. It also indicated how the relationship between MO and performance can be mediated by innovative marketing practices (e.g. price incentives). However, the main focus of case study 1 was on the effect of airport management contracts. Case study 2 provides the example of airports in Lapland in Finland in order to demonstrate

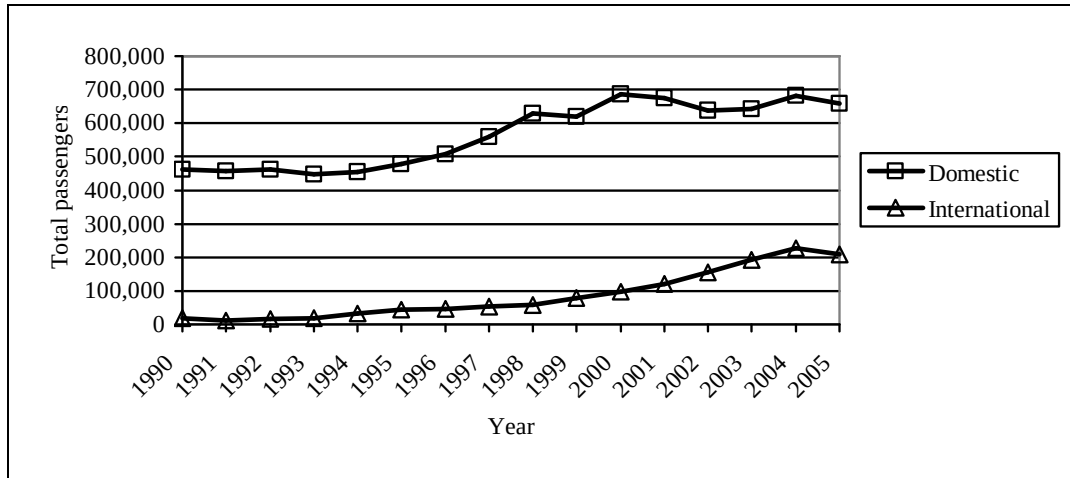
how smaller airports, that are nationally-owned, are able to enhance performance through the use of innovative marketing practices that occur as a result of being market-orientated. The case study also mentions Lakselv Banak Airport in Norway in order to emphasise that market growth is vital in determining the performance of an airport and that although MO and innovative marketing practices can be used to stimulate demand, they do not guarantee success. This is in line with the findings of this study (e.g. see sub-section 5.4.2).

Case study 2 - Market orientated management practices at airports in Lapland

Lapland is the most northern region of Finland. The Arctic Circle runs through the region and most of the regions total area lies north of the Arctic Circle. It is one of Europe's most peripheral areas according to both spatial and demographic peripherality indicators (e.g. see Schürmann and Talaat, 2000).

Finavia, Finland's national airport operator is responsible for the management and development of five airports in Lapland: Rovaniemi Airport; Kittilä Airport; Enontekiö Airport; Ivalo Airport; and, Kemi-Tornio Airport. Each airport provides domestic air services, mainly connecting Lapland to the capital city, Helsinki. However, international air services have demonstrated strong growth during the last 15 years. Passenger numbers at airports in Lapland between 1990 and 2005 can be seen in figure 6.2.

As can be seen from figure 6.2, domestic passenger numbers at airports in Lapland have stagnated in recent years. However, international passenger numbers have increased steadily and have increased their share of Lapland's total airport passengers from 4% in 1990 to 24% in 2005.

Figure 6.2 Total passengers at airports in Lapland, 1990-2005

Source: Finavia (unpublished⁵³)

According to Finavia (2006a), 91% of international passengers at airports in Lapland in 2005 were travelling on leisure services provided by international charter carriers. The dominance of charter carriers is further emphasised by table 6.1, which shows the top 10 airlines in terms of international passengers at airports in Lapland in 2005. All of the airlines featured in table 6.1 are charter carriers serving inbound tourists, mainly from Great Britain (136,313 passengers) but also from France (25,091 passengers) and Ireland (11,134 passengers).

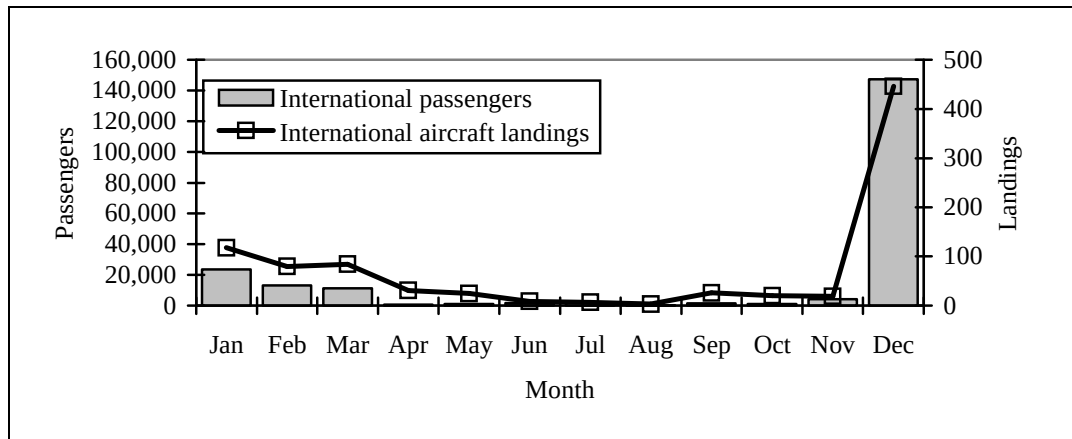
⁵³ Unpublished data was provided by Finavia's statistics department in October 2006. Any references to Finavia (unpublished) refer to such data and the source is therefore not listed in the list of references (Chapter IX of this thesis).

Table 6.1 International passengers at airports in Lapland by airline, 2005

Rank	Airline	Passengers
1	First Choice Airways	51,036
2	Monarch Airlines	18,599
3	Britannia Airways	18,393
4	Thomas Cook Airlines	13,245
5	Excel Airways	11,107
6	Astraeus	7,974
7	Star Europe	6,829
8	MyTravel	6,586
9	Visig Operations Aereas	5,644
10	Avialink DME	5,396

Source: Finavia (unpublished)

Charter carriers typically serve destinations that are able to provide a high-density tourism product such as is offered in Lapland by the Christmas and winter tourism activities. High-density tourism products enable the carriers to fly large aircraft (such as Boeing 757 aircraft that have the capacity for about 200 passengers on each flight) on direct, point-to-point routes from regional centres of large population. The flights typically take place on an infrequent and seasonal basis (i.e. on a particular day of the week and at a particular time of the year). Figure 6.3 indicates the seasonal nature of international traffic at airports in Lapland.

Figure 6.3 International traffic at airports in Lapland, 2005

Source: Finavia (unpublished)

Airports in Lapland served a total of 206,731 international passengers in 2005 (Finavia, 2006a) and as can be seen from figure 6.3, 147,248 (71%) of those passengers arrived or departed Lapland in December. In terms of international aircraft landings, airports in Lapland served a total of 868 international aircraft landings in 2005 (Finavia, 2006a) and as can be seen in figure 6.3, 446 (51%) of those landings took place in December. The reason for a much lower percentage in aircraft landings compared to passengers is that the carriers in December would be operating at full capacity, using large aircraft and therefore providing fewer landings per passenger. At less busy times of the year, operators may use smaller aircraft, providing more landings per passenger.

The ability for airports in Lapland to develop international charter services depends largely on their ability to respond to the needs of airlines and tour operators. Using the data from figure 6.3, this means that airports in Lapland need to be able to handle as many as 147,248 international passengers and 446 international aircraft landings in December as effectively as they handle 205 international passengers and 3 international aircraft landings in August. This is, of course, in addition to the scheduled domestic services that use airports in Lapland on a regular basis. The challenge and the need for flexibility and teamwork at airports in Lapland during peak periods has been emphasised by the Finnish Civil Aviation

Administration who state that:

“during the peak periods, parking aircraft seamlessly and conducting thousands of passengers through terminals designed for small numbers pose an annual challenge for the [Lapland’s] airports. For all this to work we have to have seamless to-the-minute teamwork between the airport’s staff, the airlines, the Border Guard service, Finnish Customs, the tour organisers, the safari and handling companies and others. Terminal services, air traffic controllers and airport maintenance teams need to be especially flexible in order to get the aeroplanes to land and take off on time” (FCAA, 2004; p27).

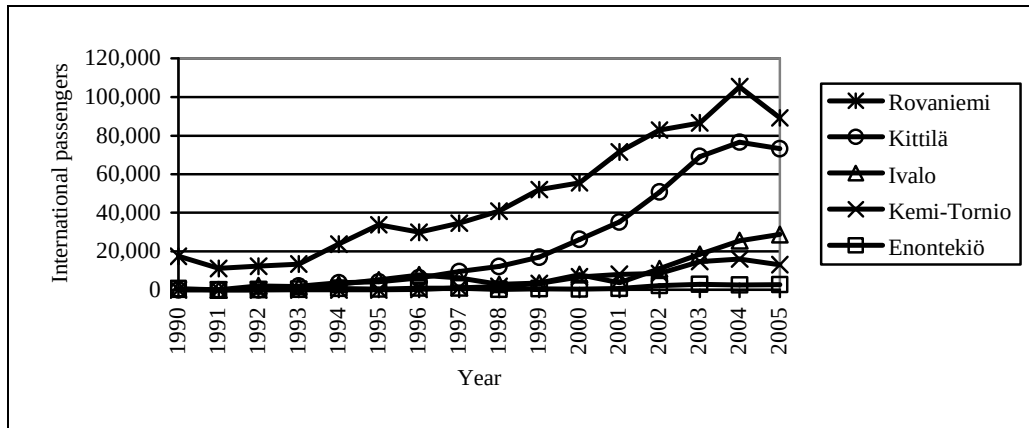
If airports in Lapland are unable to meet the demand and service expectations of their airlines and tour operators, they will effectively constrain the growth and development of international charter traffic and risk losing demand to competing airports and destinations. This has resulted in numerous and ongoing developments in airport infrastructure. For example, according to Finne (2000), improvements in infrastructure took place at Rovaniemi Airport in the early 1990’s with the construction of a new terminal building.

The new terminal, which is called Lapland’s Gate, was completed in 1992 but due to growing demand from international charter carriers, the terminal was enlarged and refurbished in 1999 and the capacity of the terminal building was doubled. In addition, the Finnish Civil Aviation Administration installed a CAT II Instrument Landing System⁵⁴ and upgraded radar and meteorology equipment in 1995 in order to improve the reliability and regularity of air traffic in the harsh and unforgiving Arctic climate. Figure 6.4 illustrates the growth in international passengers at Rovaniemi Airport and it can be seen that growth was particularly strong after each of the improvements in infrastructure had been completed

⁵⁴ An Instrument Landing System provides precise guidance to an aircraft approaching a runway. There are three Instrument Landing System categories: CAT I; CAT II; and, CAT III. CAT III also provides guidance along the runway surface and is sub-divided into CAT IIIA, CAT IIIB and CAT IIIC. A CAT II Instrument Landing System is a precision instrument for approach and landing with a decision height greater than 30 metres but lower than 60 metres above touchdown, and a runway visual range of no less than 350 metres.

(i.e. 1993 to 1995, 1996 to 1999 and 2000 to 2004).

Figure 6.4 International traffic at airports in Lapland, 1990-2005



Source: Finavia (unpublished)

Similarly to at Rovaniemi Airport, large investments in infrastructure have been required at Kittilä Airport in order to facilitate the growing demand from international charter carriers, which has been constrained by limitations in terminal capacity in recent years. According to Finavia (2006b), the airport terminal has been expanded on numerous occasions since it was built in 1982 and is currently being expanded for a seventh time.

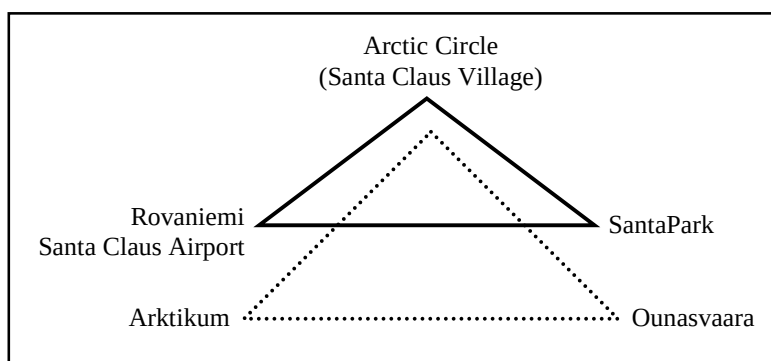
The Finnish Civil Aviation Administration has been responsible for financing the expansions and subsequent running costs at Kittilä Airport. However, because infrastructure is largely unused outside of the Christmas period, it is difficult for them to justify the investments required. Investment has only been made possible with the assistance of other agencies and The Employment and Economic Development Centre for Lapland has been a major investor, providing 2.5 million Euros for an extension in 2005, which had a cost estimate of 5.3 million Euros (Finavia, 2005b). The European Regional Development Fund and the Employment and Economic Development Centre for Lapland are providing a total of 950,000 Euros for the current expansion, which will cost 3.0 million Euros (Finavia, 2006b). The subsequent effect of any investments on employment and

tourism income is seen as justification for the expense incurred by the other agencies.

In addition to their focus on management processes and infrastructure, airports in Lapland have used branding techniques and strategic marketing partnerships in order to attract new routes and grow and retain existing routes. This is demonstrated particularly well by Rovaniemi Airport, which is Lapland's largest airport in terms of total passengers in 2005 (Finavia, 2006a).

Rovaniemi Airport is located 10 kilometres to the northeast of Lapland's administrative capital, Rovaniemi. The airport stands on the Arctic Circle, with the line of latitude running through its grounds. Rovaniemi Airport has been attracting international tourists by air since 1984 when a British Airways Concorde was chartered by a local travel agent to take 100 British tourists on a day trip to visit the self-proclaimed home of Santa Claus on Christmas Day (Rovaniemi Tourist Board, 2006). Since this day, Rovaniemi Airport has had a major sphere of influence on the tourism product of the region and was branded Santa Claus Airport in 1984 (Finne, 2000). The airport bears the Official Airport of Santa Claus trademark within the EU and several other countries (Finavia, 2005a), and has been integrated into the region's marketing strategy for tourism, which can be seen in figure 6.5.

Figure 6.5 Rovaniemi region marketing strategy



Source: Rovaniemi Tourist Board (2004)

The solid triangle in figure 6.5 represents the Christmas Triangle and consists of Rovaniemi

Santa Claus Airport, SantaPark (which is a Christmas-themed amusement centre), and the Arctic Circle where Santa Claus Village is located. Santa Claus Village is a village that is dedicated to the Santa Claus theme and includes Santa Claus Office (where Santa Claus works from), Santa Claus Post Office (where post is sent and received), and numerous souvenir shops, restaurants and activity services. Santa Claus Village is only two kilometres from the airport and can be reached from the airport by foot or by other modes of transport including motor vehicle, reindeer, dog team or sleigh.

The Christmas Triangle is part of the Overall Experience Triangle, which is represented in figure 6.5 by the dotted triangle. The Overall Experience Triangle includes Arktikum (an exhibition entity and museum), the Arctic Circle (with Santa Claus Village) and Ounasvaara (a mountain resort that offers mountain-based activities such as skiing and hiking).

The impact that Rovaniemi Airport has on international tourism can be determined by analysing international traffic data for the airport. According to Finavia (unpublished), Rovaniemi Airport attracted 45,162 international passenger arrivals in 2005. The majority of passenger arrivals were British (24,951 arrivals). However, significant numbers also came from France (6,462 arrivals), Ireland (3,303 arrivals), Russia (2,859 arrivals) and Italy (2,088 arrivals). 98% of the airports international passenger arrivals travelled with international charter carriers and the majority of them travelled on aircraft operated by British charter carriers such as First Choice Airways (12,890 arrivals), Britannia Airways (4,424 arrivals) and Thomas Cook Airlines (3,837 arrivals). Significant contributions were also made by non-British charter carriers including Star Europe from Germany (3,375 arrivals) and Visig Operations Aereas from Spain (2,658 arrivals).

Each of Lapland's airports is increasingly pursuing growth strategies based upon

international charter markets and are branded to tailor for specific markets on the airport operator's website⁵⁵. For instance, in addition to Rovaniemi Santa Claus Airport, there is Kittilä Airport for Ski Slopes and Snowy Playgrounds, Ivalo Airport the Pearl of Lapland, Enontekiö Airport the Airport in the Mountains, and Kemi-Tornio Airport for Golf in the Midnight Sun. The extent to which branding provides an airport with a competitive edge is uncertain (Graham, 2003a). However, in the case of Rovaniemi Airport, branding does appear to have raised the profile of the airport amongst airlines and tour operators (e.g. see Crump, 2004).

Local stakeholders recognise that airports in Lapland form the operational spheres of influence, which along with the tourist centres that they serve, form the starting point of the regional structure for tourism. Their vicinity and provision of air services is a noticeable competition factor and explains why airports such as Rovaniemi Airport feature strongly in the tourism strategy for their region (Regional Council of Lapland, 2003). Working closely with local stakeholders such as local businesses, tourism and regional development agencies enables the airports in Lapland to draw upon and take advantage of a wide pool of resources and enables them to provide airlines or tour operators with a wider overview of the area and the potential of the area. For instance, between 1995 and 2002, the Regional Council of Lapland spent almost 72 million Euros of EU funds on tourism projects in Lapland including 11 million Euros on tourism marketing and distribution channels (Regional Council of Lapland, 2003). Much of this would have contributed to the development of international charter services at airports in Lapland.

Although airport marketing innovations (e.g. improvements in airport management processes and infrastructure, branding, and the use of strategic marketing partnerships) have contributed to the performance of airports in Lapland, market growth (i.e. demand for air services) is still the vital factor that determines the ability of an airport to attract new routes and grow and retain existing routes. Marketing innovations can help airports to

⁵⁵ The airport operator is called Finavia and their Internet address is www.finavia.fi.

compete by stimulating new and existing demand. However, they do not always guarantee success. This is highlighted by the example of Lakselv Banak Airport in Norway, which competes directly with the airports in Lapland for international charter services.

Norway's North Cape has been developed as an international tourist attraction (e.g. see Jacobsen, 1997; 2000). In 1999, it was estimated that 115,000 international tourists that visit North Cape each year, travel from Lapland on day trips and use Ivalo Airport or Rovaniemi Airport as the starting point for their visit (Langedahl, 1999). In response to this, the Norwegian CAA spent an estimated 35 million Norwegian Kroner during the 1990's on upgrading Lakselv Banak Airport, which is about a two hour drive from North Cape, to international status. The aim of this was to encourage 10% of the tourists that use airports in Lapland to use Lakselv Banak Airport instead. It was hoped that this would also encourage tourists to spend longer in the region of North Norway, where North Cape is located. In addition to upgrades in infrastructure, the airport was branded as Lakselv North Cape Airport and was integrated into the tourism strategy for the region. The airport and local stakeholders even established a marketing company called North Cape Airport Services in order to conduct market research and promote the region (Langedahl, 1999).

Lakselv North Cape Airport obtained international status in 1998 and in 2000; the airport attracted 40 international flights and 6,004 international passengers, 100% of which were provided by international charter carriers serving mainly German, French and Spanish tourists (Avinor, 2001). Despite its early promise, the airport (and the region of North Norway) has struggled to compete with its neighbours in Lapland, where tourism infrastructure and the demand for tourism are generally more advanced. In 2005, the airport attracted just 34 international flights and 2,682 international passengers (Avinor, 2006).

6.3 Limitations and recommendations

This study has produced a number of relevant and interesting insights into the relationship between MO and the performance of airports in EPA's. However, as with any study of this magnitude, a number of limitations exist and it is important to recognise the limitations and to make recommendations for future research. Limitations and recommendations relating to this study are listed as follows:

1. The population for this study consists of airports in EPA's, which means that this study is limited not only to Europe but also to peripheral parts of Europe. This was important because of the context of this study (i.e. the impact of deregulation on the market for air services in EPA's). However, it means that the findings of this study are limited to airports in EPA's. In addition, although the response rate for the survey used in this study is acceptable (40%), it means that the findings of this study are based on responses from only 86 airports. Future studies on airport MO should cover airports worldwide and although Advani (1998) investigated antecedents to MO at airports worldwide, no studies have been conducted on the consequences of MO (i.e. the relationship between MO and performance) on airports worldwide.
2. Non-response bias was investigated in this study by comparing the number of airports that responded to the survey with the number of airports in the population and response rates were lower for airports in Southern/Mediterranean Europe, smaller airports, and airports with limited technical capabilities. However, differences in response rates were generally very small and were often influenced by the fact that some categories had such a small population. For instance, 50% of the large international airports in the population responded compared to 35% of the small regional airports. However, the population consisted of just four large international airports and only two responded. This compares to a population of 179 small regional airports of which 63 responded. Similarly, although response rates for airports in Southern/Mediterranean Europe were generally lower than for airports from Northern Europe, it was not always the case.

Some countries in Northern Europe had low response rates (e.g. Finland with 20% and Iceland with 29%) whilst some countries in Southern/Mediterranean Europe had high response rates (e.g. Cyprus with 50% and Malta with 100%). It is therefore difficult to derive any significant conclusions in terms of non-response bias. It is also difficult to assess the impact that non-response bias could have had on the findings of this study. Future studies should therefore investigate the effect of sample characteristics such as geographical location, airport size and airport technical capabilities on MO and on the relationship between MO and performance.

3. Surveys were sent to airport managers, which means that data for this study was collected using a key informant approach (i.e. responses were sought from key airport personnel). This approach was considered to be appropriate for the population and was considered to be an adequate way of producing reliable and valid data. However, future studies on airport MO should use multiple informants in order to test the reliability and validity of the data. In addition, although surveys were sent to airport managers, some of them passed the survey onto a colleague for completion and survey response bias was discovered from respondents working in marketing-related job functions. The significant source of bias was that respondents from marketing-related job functions inflated their responses for variables relating to marketing aspects including market growth and potential, marketing innovations and marketing performance. This means that the results for such respondents are not representative of the sample. However, their responses were still used in this study on the basis that it related to just 13 responses (15% of all responses) and was therefore not likely to have had a significant impact on the findings. Future studies on airport MO should control for marketing job-related bias and should also test for senior management job-related bias as this may also affect responses. Marketing job-related bias and senior management job-related bias was tested by Advani (1998) in his study on airport MO. His study found no evidence of bias. However, the findings of this study suggest that marketing job-related bias does exist.

4. Cross-sectional data was used in this study so the findings only provide an analysis of a current situation (as opposed to a time sequence). This means that whilst the findings lend support to the existence of a prior relationship, the extent to which they provide evidence of a causal relationship is limited. A time-series testing of airport MO should be carried out using a longitudinal framework so that probable causation can be investigated.
5. Nearly all of the independent and dependent variables used in this study were created from responses to a survey; only the ownership variable was created from other means. In addition, nearly all of the variables created by the survey were created using similar measures (i.e. a 4-point or 5-point Likert scale); only the passenger and air service focus variables were created using other measures. The fact that most of the measures were obtained at the same time using similar scaling procedures may have exaggerated the strength of some of the relationships. Alternative methods of data collection or the use of additional statistical analysis may help to reduce this limitation in future studies. Some studies (e.g. Sin et al., 2005) suggest that statistical analysis such as Linear Structural Relationships can be used to handle the problem of obtaining data at the same time using similar scaling procedures. However, the author has not been able to find any studies that have used such statistical analysis.
6. This study did not test for differences in levels of MO at publicly-owned and privately-owned airports so the findings can not be compared to the previous study on airport MO by Advani (1998). However, some basic assumptions and similarities were made on the basis that all of the privately-owned airports in this study came under the independent category. In addition, the limited number of privately-owned airports in the population meant that a number of different types of airport ownership were grouped together (e.g. the independent category used in this study includes airports that are locally-owned (i.e. by local authorities or chambers of commerce) and airports that are owned by a privately-owned or publicly-owned independent operator. This means that the results assume a certain degree of similarity between different forms of

governance, which as was discussed in sub-section 6.2.2, is certainly not the case. Future studies should use the full range of governance forms. However, the problem with this would be that the small number of responses in some categories would mean that the findings for those categories are fairly superficial.

7. This study investigated the effect of airport ownership as an antecedent to MO but did not investigate the effect of other antecedents that can impede or enhance MO such as senior management factors, interdepartmental dynamics and organisational systems. Advani (1998) did study such factors and concluded that MO can be enhanced by a top management emphasis and the use of reward systems that are linked to operational performance targets. An awareness of the antecedents that enhance or impede MO can enable airports to develop management systems that encourage MO, especially at nationally-owned or regionally-owned airports that are constrained by a national or regional management structure. As was mentioned in sub-section 2.3.3, it is not easy to apply such an analysis to airports in EPA's, especially when the research strategy is implemented using a survey. However, this type of analysis should be investigated by future studies using a series of field interviews, which is how Kohli and Jaworski (1990) identified the antecedents to MO in the first place.
8. Apart from the ownership variable, all of the variables used in this study were created from a survey and are based on the perceptions of the respondent, as opposed to absolute values. It may be useful for future studies to attempt to develop constructs that are based on absolute measures. For instance, for the MO construct, this could include questions on the airports expenditure on market research last year, the number of meetings held with the main customer last year, the number of management meetings held last year to discuss market trends and developments, the number of days it takes before information about important changes to the main customer is disseminated, the number of changes made last year in response to requests from the main customer, or the score achieved on a service quality survey. The findings of a survey based on absolute data would provide more accurate and meaningful findings. However,

developing the constructs would be a complex process, respondents may not know the answers to the questions, and respondents may not be willing to divulge such information.

9. Along similar lines to point 7, this study used subjective measures of performance by asking respondents to rate the performance of their airport relative to that of similar or competing airports over the last three years. This is instead of using objective measures of performance such as the change in passenger numbers for a particular time period. Although Balakrishnan (1996) has found that a strong relationship exists between subjective and objective measures of company performance, the relationship has never been tested in the context of the airport industry. In addition, most studies that investigate performance in the airport industry, albeit not in a MO context, use objective measures such as productive efficiency and profitability (e.g. Oum et al., 2006). Future studies on airport MO should attempt to use both subjective and objective measures of performance so that the relationship between the two can be investigated.
10. This study only uses marketing innovations in its measure of airport innovation. Previous studies have used different innovation types. For example, Han et al. (1998) used administrative and technical innovations, Maydeu-Olivares and Lado (2003) used innovation degree and performance measured according to the rate and success of new products/services, and Agarwal et al. (2003) used service innovations measured according to the propensity to invest in generating new capabilities and figuring out new ways to serve customers. Future studies should focus on the relationship between innovation and performance, and should use a range of innovation types in order to investigate which type of innovation has the greatest impact on performance.
11. The context of this study was determined by the effects of deregulation and the assumption that the new deregulated market advocates market-orientated management practices as a means of satisfying airline customers. This meant that the focus of this

study was solely on how airports can use MO to attract new routes and grow and retain existing routes. The narrow and specific focus of this study means that the findings are limited to the airport-airline relationship and whilst the narrow and specific approach meets the needs of this particular study, it means that the findings are not entirely comparable with the previous study on airport MO by Advani (1998), which used MO as an indicator of service quality at airports and investigated both airline and passenger-related MO. The problem facing studies on airport MO is that it is difficult to reflect the real nature of an airport business that typically serves different types of customer (e.g. see table 2.10) and has a range of performance measures (e.g. see Francis et al., 2002). Future studies could try to cover all aspects of the airport business. However, it is likely that such a study would become too large and complex and the findings would be too superficial. A narrow and specific approach seems more appropriate but additional studies are needed in order to develop a more complete picture.

12. Along similar lines to point 10, this study suggests that a stakeholder orientation is important for airports seeking to improve their performance, especially at smaller airports that are publicly-owned. This is because airports that are stakeholder-orientated are more likely to take advantage of a wider pool of resources, develop an integrated approach to regional development, and provide wider support to airlines or tour operators (e.g. by providing market research and marketing support). Smaller airports that are publicly-owned may not have the resources or expertise to do this alone. The benefits of a stakeholder orientation were demonstrated in case study 2 (and also in sub-section 2.3.5.2), which provides the example of airports in Lapland and shows how they benefit from working closely with local stakeholders such as local businesses, tourism and regional development agencies. It may be that the performance of airports in EPA's is determined by the extent to which they are stakeholder-orientated and future studies should investigate whether or not this is the case.

6.4 Chapter summary

Chapter 6 has provided a discussion of the findings of this study and covered three main areas: the main findings of this study (section 6.1); the implications that the findings of this study have for airport managers (section 6.2); and, the limitations of this study and recommendations for future research (section 6.3).

The first section (section 6.1) finds that: the reliability and validity of the MO construct is confirmed and can be applied to the airport industry; levels of MO tend to be fairly high at airports in EPA's and variations between levels of MO at airports can to some extent be explained by the type of airport ownership – independently-owned airports have significantly higher levels of MO than regionally-owned or nationally-owned airports; MO has a positive and direct relationship with performance and the relationship is both significant and causal but the effect of market growth on performance is greater than that of MO; the relationship between MO and performance is strong when market turbulence is high and/or when airports are focused on developing leisure services; and, MO has a positive effect on performance because airports are more likely to be more innovative in their approach to marketing – this applies to all airports, irrespective of whether or not they operate in an innovation-friendly environment.

The second section (section 6.2) suggests that managers wanting to develop a MO should: monitor and improve the way in which they gather, disseminate and respond to market intelligence; use the MO construct as a diagnostic tool to identify areas where improvements are needed; develop benchmarks or norms that can be used to monitor airport processes and management behaviour and to measure the effectiveness of any changes; consider external benchmarking in order to provide comparisons with similar or competing airports; identify the key skills and management competencies that are required to implement a MO and develop training programmes to improve the organisation-wide understanding of the activities involved in developing a MO; develop a corporate culture that reinforces behaviours that are consistent with MO; and, use the MO construct to

develop relevant and effective marketing innovations. Airports that operate in turbulent markets and/or have a focus on developing leisure services are likely to gain most from adopting a MO and the mediating effect of marketing innovations means that airports should develop a corporate culture that emphasises an innovative approach to marketing. A model of local ownership combined with private minority interests or a management contract in the form of a PPP appears to offer the best opportunity for airports in EPA's that want to develop a MO, especially those that have not reached the threshold for which private ownership becomes a viable option.

In terms of methodology and survey responses, the third section (section 6.3) recognises that: this study is limited to airports in EPA's and although the findings are based on 40% of the population, this only equates to 86 airports – future studies should cover airports worldwide; non-response bias was experienced from airports in Southern/Mediterranean Europe, smaller airports, and airports with limited technical capabilities. However, it was difficult to derive any significant conclusions relating to non-response bias or the impact that it could have had on the findings of this study – future studies should investigate the latter by measuring the effect of sample characteristics on MO and on the relationship between MO and performance; data for this study was collected using a key informant approach so the reliability and validity of data is restricted to individual informants – future studies should use a multiple informants approach; survey response bias was discovered from respondents working in marketing-related job functions – future studies should control for marketing job-related bias and should also test for senior management job-related bias; similar measures and scaling procedures were used to collect data and may therefore have exaggerated the strength of some relationships – future studies should use varied methods of data collection or additional statistical analysis to reduce the scope for exaggeration.

In terms of findings, the third section (section 6.3) recognises that: cross-sectional data was used in this study so whilst the findings identify the existence of prior relationships, they provide limited evidence of a causal relationship – future studies should use a longitudinal

framework so that probable causation can be investigated; categories of airport ownership may have been too vague – future studies should consider forms of airport governance (as opposed to airport ownership) but this may reduce the number of airports in each category to an insignificant number; antecedents to MO such as senior management factors, interdepartmental dynamics and organisational systems were not investigated – future studies should include these factors and could investigate their impact on MO using a series of field interviews; most of the variables used in this study are based on the perceptions of the respondent – future studies should try to use absolute values; this study only uses marketing innovations in its measure of airport innovation – future studies should use a range of innovation types in order to investigate which type of innovation has the greatest impact on performance; the focus of this study is limited to airline-related MO and its effect on airport marketing performance – additional studies are needed in order to develop a more complete picture of the relationship between MO and the performance of airports; this study only investigates antecedents to and consequences of MO – future studies, especially on smaller airports that are publicly-owned, should also investigate antecedents to and consequences of a stakeholder orientation.

7. CONCLUSION

The main aim of this study was to investigate the relationship between MO and the performance of airports in EPA's. The rationale for this study was provided in Chapter 1 and is based on the impact that the deregulation of European air transport markets has had on airport management practices.

In summary, airports in EPA's were traditionally operated in a regulated environment, where the provision of air services was, to a large extent, determined by national governments. During the regulated era, the role of the airport was in line with that of a public utility, providing a public service to its local community. European air transport markets were deregulated by April 1997 and this has meant that market forces rather than public service considerations increasingly determine air services to and from airports in EPA's. Such consequences offer both threats and opportunities to airports in EPA's because despite being threatened by the loss or reduction of traditional services that are no longer commercially viable, airports also face opportunities to attract new services that were previously constrained by regulatory barriers.

The new market has important implications for the managers of airports in EPA's as it advocates market-driven management practices as a means of satisfying airline customers. It also implies that airports that adopt a more market-orientated approach than their rivals will perform better.

Chapter 2 provided a review of literature that is relevant to this study and indicated where this study fits into debates around the subject. The review considered three individual strands of literature: the concept of peripherality; the deregulation of European air transport markets; and, the marketing concept. From the review of literature, four research questions were developed and a series of hypotheses were established in order to answer the questions.

The research questions and hypotheses can be seen in Chapter 3 but as a summary, the questions ask: is MO at airports in EPA's affected by airport ownership? Does MO have a positive effect on the performance of airports in EPA's? When does MO have a positive effect on the performance of airports in EPA's? How does MO have a positive effect on the performance of airports in EPA's?

The research methodology for answering the questions and testing the hypotheses was described in Chapter 4, where four main aspects were considered: the research strategy; the population; the design and delivery of the research strategy; and, the methods used to analyse the data and investigate the research questions and hypotheses. This study was identified as belonging to the social sciences area of research as it aims to grasp the social dimensions and consequences of management behaviour. Evidence suggested that the research strategy for this study should be implemented using a questionnaire-based survey that is administered to the managers of all airports in EPA's. EPA's were defined according to a spatial peripherality indicator and perceived degrees of remoteness. The latter includes sparsely populated regions, islands regions and mountain areas. A total of 76 European regions were identified as being peripheral and a population of 217 airports were identified as being located in those regions.

The survey was constructed; mainly using propositions measured by 5-point Likert scales, and was pre-tested on academics and industry experts at two international conferences. A further 17 academics and industry experts were consulted and provided feedback on the survey before it was piloted on nine European airports. A final version of the survey was sent by email to airport managers and was followed up with two repeat mailings. A range of methods was employed to analyse the data including descriptive statistics (e.g. simple bar charts, frequency tables, cross-tabulations and histograms), inferential statistics (e.g. the Independent Samples T-test, Two-Way ANOVA's, and the Sobel Test), and bivariate and multivariate analysis (e.g. Spearman's Rho Correlation analysis and regression analysis).

Usable responses from 86 airports were received and analysed and the findings of that analysis were presented in Chapter 5 and discussed in Chapter 6.

The findings of this study tested each of the hypotheses and answered the four research questions. Firstly, they found that independently-owned airports have significantly higher levels of MO than regionally-owned or nationally-owned airports. Secondly, they found that MO does have a positive effect on performance but indicated that the effect of market growth on performance is greater than that of MO. Thirdly, they found that the effect of MO on performance is likely to be higher at airports that operate in an environment where market turbulence is high and/or when the focus of the airport is on developing leisure services. Fourthly, they found that MO has a positive effect on performance because it makes an airport more innovative in its approach to marketing. It is then this innovative approach that influences superior performance, irrespective of whether or not the airport operates in an innovation-friendly environment.

The findings of this study have contributed to existing theory and have also added to that theory because the relationship between MO and performance, within the context of the airport industry, has not been previously investigated.

In terms of their implications for airports managers, the findings of this study showed that airports wishing to outperform competitors can do so by adopting a MO and should seek to continually monitor and improve the way in which they gather, disseminate and respond to market intelligence. This will be particularly effective for airports that operate in an environment where market turbulence is high and/or when the focus of the airport is on developing leisure services.

The findings of this study also showed that MO has a positive effect on performance because it means that airports are more likely to be innovative in their approach to marketing. This means that airport managers should try to develop a market-orientated culture with innovative marketing practices in mind, and visa versa. The fact that

independently-owned airports have significantly higher levels of MO than regionally-owned or nationally-owned airports suggests that independent ownership is more conducive to the development of a MO.

Industry examples and two short case studies were provided in support of the discussion. The first case study investigated the effect of an airport management contract at Grenoble-Isère Airport, an independently-owned airport that is located in the Rhône-Alps region of France. The case study demonstrated how management contracts can be used by smaller, publicly-owned airports, to stimulate a more market-orientated approach to airport management. It also demonstrated how MO can subsequently have a positive effect on performance. However, the structure of the management contract is an important determinant of its success and as has been demonstrated by the example of the PFI contract at Inverness Airport, management contracts do not always have a positive effect on performance.

The second case study investigated the effect of marketing innovations at a number of nationally-owned airports in Lapland, Finland. The case study demonstrated how airports are able to enhance performance through the use of innovative marketing practices that occur as a result of being market-orientated. However, the case study also used the example of Lakslev Banak Airport in Norway in order to demonstrate how innovative marketing practices do not always guarantee success. It was suggested that market growth is the determining factor for airport performance and this is in line with the findings of this study.

The limitations of this study and recommendations for future research were also discussed in Chapter 6. The most notable limitation of this study was that the findings are restricted to airports in EPA's. It was recommended that future research should be conducted on airports worldwide in order to investigate differences between a wider range of airport types and geographical regions.

Another notable limitation was concerned with the use of airport ownership as an antecedent to MO. It was suggested that future studies should consider forms of airport governance as an antecedent to MO so that the management of the airport can be considered in addition to the nature of airport ownership. The case study on Grenoble-Isère Airport demonstrated the value of airport management contracts and these can be used by airports that are nationally-owned, regionally-owned or independently-owned. Therefore, ownership alone does not provide an accurate enough reflection of the way in which an airport is managed.

Finally, this study only investigated antecedents to and consequences of MO. The case study on airports in Lapland demonstrated the role and importance of a stakeholder orientation and suggested that this is especially important for smaller airports that are publicly-owned. It was suggested that future studies should also investigate antecedents to and consequences of a stakeholder orientation in order to investigate whether this has a greater effect on performance than MO does, or whether the two types of orientation complement each other.

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XI. APPENDICES

Appendix A: Market orientation constructs

A1. Kohli et al. (1993)

Statements	Scale				
	Strongly agree			Strongly disagree	
	5	4	3	2	1
Intelligence generation					
1. In this business unit, we meet with customers at least once a year to find out what products or services they will need in the future					
2. In this business unit, we do a lot of in-house market research					
3. We are slow to detect changes in our customers product preferences					
4. We poll end users at least once a year to assess the quality of our products and services					
5. We are slow to detect fundamental shifts in our industry (e.g. competition, technology, regulation)					
6. We periodically review the likely effect of changes in our business environment (e.g. regulation) on customers					
Intelligence dissemination					
7. We have interdepartmental meetings at least once a quarter to discuss market trends and developments					
8. Marketing personnel in our business unit spend time discussing customers future needs with other functional departments					
9. When something important happens to a major customer or market, the whole business unit knows about it in a short period					
10. Data on customer satisfaction are disseminated at all levels in this business unit on a regular basis					
11. When one department finds out something important about competitors, it is slow to alert other departments					

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Intelligence response					
12. It takes us forever to decide how to respond to our competitors price changes					
13. For one reason or another we tend to ignore changes in our customers product or service needs					
14. We periodically review our product development efforts to ensure that they are in line with what customers want					
15. Several departments get together periodically to plan a response to changes taking place in our business environment					
16. If a major competitor were to launch an intensive campaign targeted at our customers, we would implement a response immediately					
17. The activities of the different departments in this business unit are well co-ordinated					
18. Customer complaints fall on deaf ears in this business unit					
19. Even if we came up with a great marketing plan, we probably would not be able to implement it in a timely fasion					
20. When we find that customers would like us to modify a product or service, the departments involved make converted efforts to do so					

Source: Kohli et al. (1993)

A2. Narver and Slater (1990)

Statements	Scale						
	To an extreme extent			To a very slight extent			Not at all
	7	6	5	4	3	2	1
Customer orientation							
1. Customer commitment							
2. Create customer value							
3. Understand customer needs							
4. Customer satisfaction objectives							
5. Measure customer satisfaction							
6. After-sales service							

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Competitor orientation							
7. Salespeople share competitor information							
8. Respond rapidly to competitors actions							
9. Top managers discuss competitors strategies							
10. Target opportunities for competitive advantage							
Inter-functional coordination							
11. Inter-functional customer calls							
12. Information shared among functions							
13. Functional integration in strategy							
14. All functions contribute to customer value							
15. Share resources with other business units							

Source: Narver and Slater (1990)

A3. Deshpandé et al. (1993)

Statements	Scale				
	Strongly agree			Strongly disagree	
	5	4	3	2	1
Customer orientation					
1. We have routine or regular measures of customer service					
2. Our product and service development is based on good market and customer information					
3. We know our competitors well					
4. We have a good sense of how our customers value our products and services					
5. We are more customer-focused than our competitors					
6. We compete primarily based on product or service differentiation					
7. The customers interest should always come first, ahead of the owners					
8. Our products/services are the best in the business					
9. I believe this business exists primarily to serve customers					

Source: Deshpandé et al. (1993)

A4. Deshpandé and Farley (1998)

Statements	Scale				
	Strongly agree			Strongly disagree	
	5	4	3	2	1
1. Our business objectives are driven by customer satisfaction					
2. We constantly monitor our level of commitment and orientation to serving customer needs					
3. We freely communicate information about our successful and unsuccessful customer experiences across all business functions					
4. Our strategy for competitive advantage is based on our understanding of customers needs					
5. We measure customer satisfaction systematically and frequently					
6. We have routine measures or regular measures of customer service					
7. We are more customer focused than our competitors					
8. I believe that business exists primarily to service customers					
9. We poll end users at least once a year to assess the quality of our products and services					
10. Data on customer satisfaction are disseminated at all levels in this business unit on a regular basis					

Source: Deshpandé and Farley (1998)

Appendix B: NUTS II regions

Country	Code	NUTS II region	Centroid
Austria	AT11	Burgenland	Eisenstadt
Austria	AT12	Niederösterreich	St.Pölten
Austria	AT13	Wien	Wien
Austria	AT21	Kärnten	Klagenfurt
Austria	AT22	Steiermark	Graz
Austria	AT31	Oberösterreich	Linz
Austria	AT32	Salzburg	Salzburg
Austria	AT33	Tirol	Innsbruck
Austria	AT34	Vorarlberg	Dornbirn
Belgium	BE10	Région de Bruxelles	Bruxelles
Belgium	BE21	Prov. Antwerpen	Antwerpen
Belgium	BE22	Prov. Limburg (B)	Hasselt
Belgium	BE23	Prov. Oost-Vlaanderen	Gent
Belgium	BE24	Prov. Vlaams-Brabant	Leuven
Belgium	BE25	Prov. West-Vlaanderen	Brugge
Belgium	BE31	Prov. Brabant Wallon	Wavre
Belgium	BE32	Prov. Hainaut	Charleroi
Belgium	BE33	Prov. Liège	Liege
Belgium	BE34	Prov. Luxembourg (B)	Arlon
Belgium	BE35	Prov. Namur	Namur
Bulgaria	BG01	North	Varna
Bulgaria	BG02	Central	Plovidiv
Bulgaria	BG03	South	Sofia
Switzerland	CH01	Région lémanique	Genève
Switzerland	CH02	Espace Mittelland	Bern
Switzerland	CH03	Nordwestschweiz	Basel-Stadt
Switzerland	CH04	Zürich	Zürich
Switzerland	CH05	Ostschweiz	Schaffhausen
Switzerland	CH06	Zentralschweiz	Luzern
Switzerland	CH07	Ticino	Ticino
Cyprus	CY00	Kypros / Kibris	Kypros

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Czech Republic	CZ01	Praha	Praha
Czech Republic	CZ02	Stredni Cechy	Stredocesky
Czech Republic	CZ03	Jihozapad	Plzensky
Czech Republic	CZ04	Severozapad	Ustecky
Czech Republic	CZ05	Severovychod	Kralovehradecky
Czech Republic	CZ06	Jihovychod	Jihomoravsky
Czech Republic	CZ07	Stredni Morava	Olomoucky
Czech Republic	CZ08	Moravskoslezsko	Moravskoslezsky
Germany	DE11	Stuttgart	Stuttgart
Germany	DE12	Karlsruhe	Mannheim
Germany	DE13	Freiburg	Freiburg i.Br.
Germany	DE14	Tübingen	Tübingen
Germany	DE21	Oberbayern	München
Germany	DE22	Niederbayern	Landshut
Germany	DE23	Oberpfalz	Regensburg
Germany	DE24	Oberfranken	Bamberg
Germany	DE25	Mittelfranken	Nürnberg
Germany	DE26	Unterfranken	Würzburg
Germany	DE27	Schwaben	Augsburg
Germany	DE30	Berlin	Berlin
Germany	DE40	Brandenburg	Potsdam
Germany	DE50	Bremen	Bremen
Germany	DE60	Hamburg	Hamburg
Germany	DE71	Darmstadt	Frankfurt am Main
Germany	DE72	Gießen	Giessen
Germany	DE73	Kassel	Kassel
Germany	DE80	Mecklenburg-Vorpommern	Rostock
Germany	DE91	Braunschweig	Braunschweig
Germany	DE92	Hannover	Hannover
Germany	DE93	Lüneburg	Lüneburg
Germany	DE94	Weser-Ems	Oldenburg
Germany	DEA1	Düsseldorf	Düsseldorf
Germany	DEA2	Köln	Köln
Germany	DEA3	Münster	Münster
Germany	DEA4	Detmold	Bielefeld

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Germany	DEA5	Arnsberg	Dortmund
Germany	DEB1	Koblenz	Koblenz
Germany	DEB2	Trier	Trier
Germany	DEB3	Rhein Hessen-Pfalz	Mainz
Germany	DEC0	Saarland	Saarbrücken
Germany	DED1	Chemnitz	Chemnitz
Germany	DED2	Dresden	Dresden
Germany	DED3	Leipzig	Leipzig
Germany	DEE1	Dessau	Dessau
Germany	DEE2	Halle	Halle
Germany	DEE3	Magdeburg	Magdeburg
Germany	DEF0	Schleswig-Holstein	Kiel
Germany	DEG0	Thüringen	Erfurt
Denmark	DK00	Danmark	København
Estonia	EE00	Eesti	Tallinn
Spain	ES11	Galicia	Santiago
Spain	ES12	Principado de Asturias	Oviedo
Spain	ES13	Cantabria	Santander
Spain	ES21	País Vasco	Bilbao
Spain	ES22	Comunidad Foral de Navarra	Pamplona
Spain	ES23	La Rioja	Logrono
Spain	ES24	Aragón	Zaragoza
Spain	ES30	Comunidad de Madrid	Madrid
Spain	ES41	Castilla y León	Valladolid
Spain	ES42	Castilla-La Mancha	Toledo
Spain	ES43	Extremadura	Mérida
Spain	ES51	Cataluña	Barcelona
Spain	ES52	Comunidad Valenciana	Valencia
Spain	ES53	Illes Balears	Palma de Mallorca
Spain	ES61	Andalucía	Sevilla
Spain	ES62	Región de Murcia	Murcia
Finland	FI13	Itä-Suomi	Kuopio
Finland	FI14	Väli-Suomi	Jyväskylä
Finland	FI15	Pohjois-Suomi	Oulu
Finland	FI16	Uusimaa	Helsinki

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Finland	FI17	Etelä-Suomi	Tampere
Finland	FI20	Åland	Maarianhamina
France	FR10	Île de France	Paris
France	FR21	Champagne-Ardenne	Reims
France	FR22	Picardie	Amiens
France	FR23	Haute-Normandie	Le Havre
France	FR24	Centre	Orleans
France	FR25	Basse-Normandie	Caen
France	FR26	Bourgogne	Dijon
France	FR30	Nord - Pas-de-Calais	Lille
France	FR41	Lorraine	Metz
France	FR42	Alsace	Strasbourg
France	FR43	Franche-Comté	Besancon
France	FR51	Pays de la Loire	Nantes
France	FR52	Bretagne	Brest
France	FR53	Poitou-Charentes	Poitiers
France	FR61	Aquitaine	Bordeaux
France	FR62	Midi-Pyrénées	Toulouse
France	FR63	Limousin	Limoges
France	FR71	Rhône-Alpes	Lyon
France	FR72	Auvergne	Clermont-Ferrand
France	FR81	Languedoc-Roussillon	Montpellier
France	FR82	Provence-Alpes-Côte d'Azur	Marseille
France	FR83	Corse	Ajaccio
Greece	GR11	Anatoliki Makedonia, Thraki	Kavala
Greece	GR12	Kentriki Makedonia	Thessaloniki
Greece	GR13	Dytiki Makedonia	Kozani
Greece	GR14	Thessalia	Larissa
Greece	GR21	Ipeiros	Ioannina
Greece	GR22	Ionia Nisia	Kerkyra
Greece	GR23	Dytiki Ellada	Patrai
Greece	GR24	Stereia Ellada	Lamia
Greece	GR25	Peloponnisos	Tripolis
Greece	GR30	Attiki	Athinai
Greece	GR41	Voreio Aigaio	Mytilini

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Greece	GR42	Notio Aigaio	Ermoupolis
Greece	GR43	Kriti	Irakleion
Hungary	HU01	Kozep-Magyarország	Budapest
Hungary	HU02	Kozep-Dunantul	Komarom-Esztergom
Hungary	HU03	Nyugat-Dunantul	Gyor-Moson-Sopron
Hungary	HU04	Del-Dunantul	Baranya
Hungary	HU05	Eszak-Magyarország	Borsod-Abaúj-Zemplen
Hungary	HU06	Eszak-Alföld	Szabolcs-Szatmár-Bereg
Hungary	HU07	Del-Alföld	Csongrád
Ireland	IE01	Border, Midland & Western	Galway
Ireland	IE02	Southern and Eastern	Dublin
Iceland	IS00	Ísland	Reykjavík
Italy	IT11	Piemonte	Torino
Italy	IT12	Valle d'Aosta	Aosta
Italy	IT13	Liguria	Genova
Italy	IT20	Lombardia	Milano
Italy	IT31	Trentino-Alto Adige	Bolzano
Italy	IT32	Veneto	Venezia
Italy	IT33	Friuli-Venezia Giulia	Triesta
Italy	IT40	Emilia-Romagna	Bologna
Italy	IT51	Toscana	Firenze
Italy	IT52	Umbria	Perugia
Italy	IT53	Marche	Ancona
Italy	IT60	Lazio	Roma
Italy	IT71	Abruzzo	Pescara
Italy	IT72	Molise	Campobasso
Italy	IT80	Campania	Napoli
Italy	IT91	Puglia	Bari
Italy	IT92	Basilicata	Potenza
Italy	IT93	Calabria	Reggio
Italy	ITA	Sicilia	Palermo
Italy	ITB	Sardegna	Cagliari
Liechtenstein	LI00	Liechtenstein	Liechtenstein
Lithuania	LT00	Lietuva	Vilniaus
Luxembourg	LU00	Luxembourg (Grand-Duché)	Luxembourg

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Latvia	LV00	Latvija	Riga
Malta	MA00	Malta	Malta
Netherlands	NL11	Groningen	Groningen
Netherlands	NL12	Friesland	Leeuwarden
Netherlands	NL13	Drenthe	Emmen
Netherlands	NL21	Overijssel	Enschede
Netherlands	NL22	Gelderland	Apeldoorn
Netherlands	NL23	Flevoland	Lelystad
Netherlands	NL31	Utrecht	Utrecht
Netherlands	NL32	Noord-Holland	Amsterdam
Netherlands	NL33	Zuid-Holland	Rotterdam
Netherlands	NL34	Zeeland	Middelburg
Netherlands	NL41	Noord-Brabant	Eindhoven
Netherlands	NL42	Limburg (NL)	Maastricht
Norway	NO01	Oslo og Akershus	Oslo
Norway	NO02	Hedmark og Oppland	Lillehammer
Norway	NO03	Sør-Østlandet	Skien
Norway	NO04	Agder og Rogaland	Stavanger
Norway	NO05	Vestlandet	Bergen
Norway	NO06	Trøndelag	Trondheim
Norway	NO07	Nord-Norge	Tromsø
Poland	PL01	Dolnoslaskie	M. Wroclaw
Poland	PL02	Kujawsko-Pomorskie	Torunsko-wloclawski
Poland	PL03	Lubelskie	Lubelski
Poland	PL04	Lubuskie	Zielonogorski
Poland	PL05	Lodzkie	M. Lodz
Poland	PL06	Malopolskie	M. Krakow
Poland	PL07	Mazowieckie	M. Warszawa
Poland	PL08	Opolskie	Opolski
Poland	PL09	Podkarpackie	Rzeszowsko-tarnobrzesci
Poland	PL0A	Podlaskie	Lomzynski
Poland	PL0B	Pomorskie	Gdansk-Gdynia-Sopot
Poland	PL0C	Slaskie	Centralny slaski
Poland	PL0D	Swietokrzyskie	Swietokrzyski
Poland	PL0E	Warminsko-Mazurskie	Elblaski

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Poland	PL0F	Wielkopolskie	M. Poznan
Poland	PL0G	Zachodniopomorskie	Szczecinski
Portugal	PT11	Norte	Porto
Portugal	PT12	Centro (P)	Coimbra
Portugal	PT13	Lisboa E Vale do Tejo	Lisboa
Portugal	PT14	Alentejo	Evora
Portugal	PT15	Algarve	Faro
Romania	RO01	Nord-Est	Iasi
Romania	RO02	Sud-Est	Galati
Romania	RO03	Sud	Prahova
Romania	RO04	Sud-Vest	Dolj
Romania	RO05	Vest	Timis
Romania	RO06	Nord-Vest	Cluj
Romania	RO07	Centru	Brasov
Romania	RO08	Bucuresti	Bucuresti
Sweden	SE01	Stockholm	Stockholm
Sweden	SE02	Östra Mellansverige	Uppsala
Sweden	SE04	Sydsverige	Malmö
Sweden	SE06	Norra Mellansverige	Gävle
Sweden	SE07	Mellersta Norrland	Sundsvall
Sweden	SE08	Övre Norrland	Umea
Sweden	SE09	Småland med öarna	Jönköping
Sweden	SE0A	Västsverige	Göteborg
Slovenia	SI00	Slovenija	Ljubljana
Slovak Republic	SK01	Bratislavsky kraj	Bratislavsky kraj
Slovak Republic	SK02	Zapadne Slovensko	Trenciansky kraj
Slovak Republic	SK03	Stredne Slovensko	Zilinsky kraj
Slovak Republic	SK04	Vychodne Slovensko	Kosicky kraj
United Kingdom	UKC1	Tees Valley & Durham	Middlesborough
United Kingdom	UKC2	Northumberland and Tyne & Wear	Newcastle upon Tyne
United Kingdom	UKD1	Cumbria	Carlisle
United Kingdom	UKD2	Cheshire	Warrington
United Kingdom	UKD3	Greater Manchester	Manchester
United Kingdom	UKD4	Lancashire	Blackpool
United Kingdom	UKD5	Merseyside	Liverpool

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United Kingdom	UKE1	East Riding and North Lincolnshire	Kingston upon Hull
United Kingdom	UKE2	North Yorkshire	Harrogate
United Kingdom	UKE3	South Yorkshire	Sheffield
United Kingdom	UKE4	West Yorkshire	Leeds
United Kingdom	UKF1	Derbyshire and Nottinghamshire	Nottingham
United Kingdom	UKF2	Leicestershire, Rutland, Northamptonshire	Leicester
United Kingdom	UKF3	Lincolnshire	Lincoln
United Kingdom	UKG1	Herefordshire, Worcestershire, Warwickshire	Warwick
United Kingdom	UKG2	Shropshire and Staffordshire	Newcastle-under-Lyne
United Kingdom	UKG3	West Midlands	Birmingham
United Kingdom	UKH1	East Anglia	Cambridge
United Kingdom	UKH2	Bedfordshire and Hertfordshire	Luton
United Kingdom	UKH3	Essex	Southend-on-Sea
United Kingdom	UKI1	Inner London	London
United Kingdom	UKI2	Outer London	London
United Kingdom	UKJ1	Berkshire, Buckinghamshire, Oxfordshire	Reading
United Kingdom	UKJ2	Surrey, East and West Sussex	Brighton
United Kingdom	UKJ3	Hampshire and Isle of Wight	Southampton
United Kingdom	UKJ4	Kent	Maidstone
United Kingdom	UKK1	Gloucestershire, Wiltshire, North Somerset	Bristol
United Kingdom	UKK2	Dorset and Somerset	Bournemouth
United Kingdom	UKK3	Cornwall and Isles of Scilly	Newquay
United Kingdom	UKK4	Devon	Plymouth
United Kingdom	UKL1	West Wales and The Valleys	Cardiff
United Kingdom	UKL2	East Wales	Wrexham
United Kingdom	UKM1	North Eastern Scotland	Aberdeen
United Kingdom	UKM2	Eastern Scotland	Edinburgh
United Kingdom	UKM3	South Western Scotland	Glasgow
United Kingdom	UKM4	Highlands and Islands	Inverness
United Kingdom	UKN0	Northern Ireland	Belfast

Appendix C: Peripherality index and population density

Code	NUTS II region	Centroid	Index	Density
IS00	Ísland	Rekyavik	400	3
CY	Kypros / Kibris	Kypros	349	81
NO07	Nord-Norge	Tromso	256	4
GR42	Notio Aigaio	Ermoupolis	236	56
GR43	Kriti	Iraklion	233	71
GR41	Voreio Aigaio	Mytilini	227	53
FI15	Pohjois-Suomi	Oulu	220	5
FI13	Itä-Suomi	Kuopio	202	10
FI14	Väli-Suomi	Jyväskylä	199	31
SE08	Övre Norrland	Umea	199	3
NO06	Trøndelag	Trondheim	188	10
FI17	Etelä-Suomi	Tampere	185	35
GR22	Ionia Nisia	Kerkyra	180	91
NO05	Vestlandet	Bergen	180	17
FI16	Uusimaa	Helsinki	176	204
MA	Malta	Malta	176	1,234
GR25	Peloponnisos	Tripolis	174	39
SE07	Mellersta Norrland	Sundsvall	173	5
FI20	Åland	Maarianhamina	170	17
GR23	Dytiki Ellada	Patrai	169	64
GR30	Attiki	Athinai	168	1,022
GR24	Stereia Ellada	Lamia	163	36
GR21	Ipeiros	Ioannina	161	36
EE	Eesti	Tallinn	158	30
GR11	Anatoliki Makedonia, Thraki	Kavala	158	42
PT15	Algarve	Faro	154	28
GR14	Thessalia	Larissa	153	53
NO02	Hedmark og Oppland	Lillehammer	150	7
RO02	Sud-Est	Galati	148	82
GR12	Kentriki Makedonia	Thessaloniki	147	100
GR13	Dytiki Makedonia	Kozani	147	31

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PT13	Lisboa E Vale do Tejo	Lisboa	146	101
PT14	Alentejo	Evora	146	216
SE01	Stockholm	Stockholm	145	279
SE06	Norra Mellansverige	Gävle	144	13
ITA	Sicilia	Palermo	143	198
BG2	Central	Plovdiv	142	333
IE01	Border, Midland & Western	Galway	142	30
BG3	South	Sofia	140	333
ES61	Andalucía	Sevilla	140	83
UKM4	Highlands and Islands	Inverness	140	9
LV	Latvija	Riga	139	37
NO01	Oslo og Akershus	Oslo	139	195
NO03	Sør-Østlandet	Skien	139	25
ES53	Illes Balears	Palma de Mallorca	138	158
ITB	Sardegna	Cagliari	138	68
RO01	Nord-Est	Iasi	138	104
RO03	Sud	Prahova	137	101
RO08	Bucuresti	Bucuresti	137	1252
UKN	Northern Ireland	Belfast	137	119
NO04	Agder og Rogaland	Stavanger	136	26
PT11	Norte	Porto	136	171
SE02	Östra Mellansverige	Uppsala	136	39
PT12	Centro (P)	Coimbra	135	76
ES11	Galicia	Santiago	134	92
IE02	Southern and Eastern	Dublin	134	75
ES43	Extremadura	Mérida	132	26
BG1	North	Varna	131	333
UKM1	North Eastern Scotland	Aberdeen	128	69
LT	Lietuva	Vilniaus	127	57
RO07	Centru	Brasov	127	78
RO04	Sud-Vest	Dolj	126	82
SE09	Småland med öarna	Jönköping	123	24
ES42	Castilla-La Mancha	Toledo	120	22
ES12	Principado de Asturias	Oviedo	118	100
ES62	Región de Murcia	Murcia	117	99

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IT93	Calabria	Reggio	117	136
UKM2	Eastern Scotland	Edinburgh	117	106
ES30	Comunidad de Madrid	Madrid	115	644
UKM3	South Western Scotland	Glasgow	115	176
ES41	Castilla y León	Valladolid	113	26
RO06	Nord-Vest	Cluj	112	83
SE0A	Västsverige	Göteborg	112	60
ES52	Comunidad Valenciana	Valencia	110	173
FR83	Corse	Ajaccio	110	30
PL0A	Podlaskie	Lomzynski	109	61
UKD1	Cumbria	Carlisle	108	72
RO05	Vest	Timis	107	64
ES13	Cantabria	Santander	106	99
IT91	Puglia	Bari	104	211
PL03	Lubelskie	Lubelski	104	89
SE04	Sydsverige	Malmö	104	91
UKC2	Northumberland and Tyne & Wear	Newcastle upon Tyne	104	249
UKK3	Cornwall and Isles of Scilly	Newquay	104	140
IT92	Basilicata	Potenza	103	61
PL0B	Pomorskie	Gdansk-Gdynia-Sopot	102	120
UKC1	Tees Valley & Durham	Middlesborough	102	373
ES23	La Rioja	Logrono	101	53
ES24	Aragón	Zaragoza	101	25
UKD4	Lancashire	Blackpool	100	460
PL09	Podkarpackie	Rzeszowsko-tarnobrzeki	99	119
PL0E	Warminsko-Mazurskie	Elblaski	99	61
UKD5	Merseyside	Liverpool	99	2,087
IT72	Molise	Campobasso	98	74
IT80	Campania	Napoli	98	425
UKD2	Cheshire	Warrington	98	421
UKD3	Greater Manchester	Manchester	98	1,934
UKE2	North Yorkshire	Harrogate	98	90
PL07	Mazowieckie	M. Warszawa	97	142
UKL1	West Wales and The Valleys	Cardiff	97	141
UKE1	East Riding and North Lincolnshire	Kingston upon Hull	96	237

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UKE4	West Yorkshire	Leeds	96	1,018
UKK4	Devon	Plymouth	96	160
ES21	País Vasco	Bilbao	95	284
ES22	Comunidad Foral de Navarra	Pamplona	95	52
PL0D	Swietokrzyskie	Swietokrzyski	95	113
SK04	Vychodne Slovensko	Kosicky kraj	95	99
UKL2	East Wales	Wrexham	95	137
ES51	Cataluña	Barcelona	94	193
HU06	Eszak-Alfold	Szabolcs-Szatmar-Bereg	94	86
PL02	Kujawsko-Pomorskie	Torunsko-wloclawski	94	117
UKE3	South Yorkshire	Sheffield	94	812
UKG2	Shropshire and Staffordshire	Newcastle-under-Lyne	93	239
DK	Danmark	København	92	124
PL05	Lodzkie	M. Lodz	92	145
UKF1	Derbyshire and Nottinghamshire	Nottingham	92	412
UKF3	Lincolnshire	Lincoln	92	108
UKK2	Dorset and Somerset	Bournemouth	92	194
PL06	Malopolskie	M. Krakow	91	213
HU04	Del-Dunantul	Baranya	90	69
HU05	Eszak-Magyarorszag	Borsod-Abauj-Zemplen	90	94
UKG1	Herefordshire, Worcestershire and Warwickshire	Warwick	90	206
UKG3	West Midlands	Birmingham	90	2,848
UKK1	Gloucestershire, Wiltshire and North Somerset	Bristol	90	284
HU07	Del-Alfold	Csongrad	89	73
IT60	Lazio	Roma	89	307
IT71	Abruzzo	Pescara	89	119
FR52	Bretagne	Brest	88	108
UKF2	Leicestershire, Rutland and Northamptonshire	Leicester	88	314
PL0C	Slaskie	Centralny slaski	87	395
CZ08	Moravskoslezsko	Moravskoslezsky	86	231
UKH1	East Anglia	Cambridge	86	173
UKJ3	Hampshire and Isle of Wight	Southampton	86	424
IT52	Umbria	Perugia	85	99
IT53	Marche	Ancona	85	151
PL08	Opolskie	Opolski	85	115

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PL0F	Wielkopolskie	M. Poznan	85	113
SK03	Stredne Slovensko	Zilinsky kraj	85	84
FR61	Aquitaine	Bordeaux	84	71
FR62	Midi-Pyrénées	Toulouse	84	57
UKJ1	Berkshire, Buckinghamshire and Oxfordshire	Reading	84	364
HU01	Közép-Magyarország	Budapest	83	410
UKH2	Bedfordshire and Hertfordshire	Luton	83	554
HU02	Közép-Dunántúl	Komárom-Esztergom	82	98
PL0G	Zachodniopomorskie	Szczeciński	82	76
UKH3	Essex	Southend-on-Sea	82	438
UKJ2	Surrey, East and West Sussex	Brighton	82	467
CZ07	Střední Morava	Olomoucký	81	136
PL01	Dolnośląskie	M. Wrocław	81	149
PL04	Lubuskie	Zielonogórski	81	73
UKI1	Inner London	London	81	8,494
UKI2	Outer London	London	81	3,469
FR53	Poitou-Charentes	Poitiers	80	64
FR82	Provence-Alpes-Côte d'Azur	Marseille	80	145
FR63	Limousin	Limoges	79	42
IT51	Toscana	Firenze	79	154
SK02	Západné Slovensko	Trenciansky kraj	79	125
CZ05	Severovýchod	Královéhradecký	78	120
FR51	Pays de la Loire	Nantes	78	101
FR81	Languedoc-Roussillon	Montpellier	78	85
HU03	Nyugat-Dunántúl	Győr-Ménfőcsanak-Sopron	78	88
UKJ4	Kent	Maidstone	78	422
CZ06	Jihovýchod	Jihomoravský	77	119
FR25	Basse-Normandie	Caen	77	81
SI	Slovenija	Ljubljana	77	98
DE8	Mecklenburg-Vorpommern	Rostock	76	77
FR23	Haute-Normandie	Le Havre	76	145
DEF	Schleswig-Holstein	Kiel	75	176
IT13	Liguria	Genova	75	300
IT32	Veneto	Venezia	75	246
IT33	Friuli-Venezia Giulia	Trieste	75	151

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IT40	Emilia-Romagna	Bologna	75	181
SK01	Bratislavský kraj	Bratislavský kraj	75	301
AT11	Burgenland	Eisenstadt	74	70
CZ02	Střední Čechy	Středočeský	74	101
FR72	Auvergne	Clermont-Ferrand	74	50
IT11	Piemonte	Torino	74	169
AT12	Niederösterreich	St.Pölten	73	80
AT22	Steiermark	Graz	73	73
CZ01	Praha	Praha	73	2,388
IT12	Valle d'Aosta	Aosta	73	37
IT31	Trentino-Alto Adige	Bolzano	73	69
AT13	Wien	Wien	72	3,876
AT21	Kärnten	Klagenfurt	72	59
CZ03	Jihozápad	Plzeňský	72	67
CZ04	Severozápad	Ústecký	72	131
DE4	Brandenburg	Potsdam	72	88
FR24	Centre	Orleans	72	63
IT20	Lombardia	Milano	72	381
NL12	Friesland	Leeuwarden	72	187
DE3	Berlin	Berlin	71	3,796
DE6	Hamburg	Hamburg	71	2,264
NL11	Groningen	Groningen	71	241
CH07	Ticino	Ticino	70	109
DE93	Lüneburg	Lüneburg	70	107
DED2	Dresden	Dresden	70	217
FR71	Rhône-Alpes	Lyon	70	130
NL13	Drenthe	Emmen	70	178
NL23	Flevoland	Lelystad	70	227
NL32	Noord-Holland	Amsterdam	70	951
AT31	Oberösterreich	Linz	69	115
AT32	Salzburg	Salzburg	69	72
CH01	Région lémanique	Genève	69	152
DE5	Bremen	Bremen	69	1,636
DE94	Weser-Ems	Oldenburg	69	162
DEE3	Magdeburg	Magdeburg	69	103

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NL33	Zuid-Holland	Rotterdam	69	1,189
NL34	Zeeland	Middelburg	69	207
AT33	Tirol	Innsbruck	68	53
DED3	Leipzig	Leipzig	68	249
DEE1	Dessau	Dessau	68	128
NL21	Overijssel	Enschede	68	324
NL31	Utrecht	Utrecht	68	816
BE25	Prov. West-Vlaanderen	Brugge	67	360
CH02	Espace Mittelland	Bern	67	167
CH06	Zentralschweiz	Luzern	67	152
DE91	Braunschweig	Braunschweig	67	206
DE92	Hannover	Hannover	67	238
DED1	Chemnitz	Chemnitz	67	267
FR10	Île de France	Paris	67	916
FR22	Picardie	Amiens	67	96
FR26	Bourgogne	Dijon	67	51
LI	Liechtenstein	Liechtenstein	67	213
NL22	Gelderland	Apeldoorn	67	387
AT34	Vorarlberg	Dornbirn	66	134
BE23	Prov. Oost-Vlaanderen	Gent	66	457
BE24	Prov. Vlaams-Brabant	Leuven	66	483
BE32	Prov. Hainaut	Charleroi	66	338
CH05	Ostschweiz	Schaffhausen	66	91
DE22	Niederbayern	Landshut	66	114
DEA4	Detmold	Bielefeld	66	315
DEE2	Halle	Halle	66	196
FR30	Nord - Pas-de-Calais	Lille	66	323
FR43	Franche-Comté	Besancon	66	69
NL41	Noord-Brabant	Eindhoven	66	480
BE10	Région de Bruxelles	Bruxelles	65	5,959
BE21	Prov. Antwerpen	Antwerpen	65	574
BE22	Prov. Limburg (B)	Hasselt	65	327
BE31	Prov. Brabant Wallon	Wavre	65	322
BE34	Prov. Luxembourg (B)	Arlon	65	56
BE35	Prov. Namur	Namur	65	121

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CH03	Nordwestschweiz	Basel-Stadt	65	412
CH04	Zürich	Zürich	65	722
DE21	Oberbayern	München	65	231
DEA3	Münster	Münster	65	378
DEG	Thüringen	Erfurt	65	151
FR21	Champagne-Ardenne	Reims	65	52
NL42	Limburg (NL)	Maastricht	65	528
BE33	Prov. Liège	Liege	64	264
DE14	Tübingen	Tübingen	64	198
DE23	Oberpfalz	Regensburg	64	111
DE24	Oberfranken	Bamberg	64	154
DE27	Schwaben	Augsburg	64	175
DE73	Kassel	Kassel	64	153
DEA1	Düsseldorf	Düsseldorf	64	994
DEA5	Arnsberg	Dortmund	64	476
DE11	Stuttgart	Stuttgart	63	372
DE13	Freiburg	Freiburg i.Br.	63	228
DE26	Unterfranken	Würzburg	63	156
DEA2	Köln	Köln	63	580
DEB1	Koblenz	Koblenz	63	188
DEB2	Trier	Trier	63	104
FR41	Lorraine	Metz	63	98
DE12	Karlsruhe	Mannheim	62	387
DE25	Mittelfranken	Nürnberg	62	233
DE71	Darmstadt	Frankfurt am Main	62	501
DE72	Gießen	Giessen	62	197
DEC	Saarland	Saarbrücken	62	416
FR42	Alsace	Strasbourg	62	212
LU	Luxembourg (Grand-Duché)	Luxembourg	62	169
DEB3	Rhein Hessen-Pfalz	Mainz	61	292

Appendix D: Airports in EPA's

No	Code	Airport	IATA	TEN-T cat	Use	Customs	IFR	Runway	Runway	Owner
1	ATa	Salzburg	SZG	Community	Civ	Yes	Yes	Paved	2,743	Independent
2	ATa	Innsbruck	INN	Regional	Civ	Yes	Yes	Paved	1,981	Independent
3	CH	Sion	SIR	Regional	Civ	PTO	Yes	Paved	1,981	Independent
4	CH	St Moritz	SMV	Regional	Civ	PTO	No	Paved	1,798	Independent
5	CI	Guernsey	GCI	Regional	Civ	Yes	Yes	Paved	1,463	National
6	CI	Jersey	JER	Regional	Civ	Yes	Yes	Paved	1,706	National
7	CI	Alderney	ACI	Regional	Civ	Yes	Yes	Paved	880	National
8	CY00	Larnaka	LCA	Community	Civ	Yes	Yes	Paved	3,000	National
9	CY00	Paphos	PFO	Community	Civ	Yes	Yes	Paved	2,700	National
10	DE	Friedrichshafen	FDH	Regional	Civ	Yes	Yes	Paved	2,347	Independent
11	DK007	Bornholm	RNN	Regional	Civ	O/R	Yes	Paved	2,000	National
12	ES11	Santiago	SCQ	Community	Civ	Yes	Yes	Paved	3,200	National
13	ES11	A Coruna	LCG	Regional	Civ	No	Yes	Paved	1,940	National
14	ES11	Vigo	VGO	Regional	Civ	No	Yes	Paved	2,400	National
15	ES13	Santander	SDR	Regional	Civ	Yes	Yes	Paved	2,400	National
16	ES24	Zaragoza	ZAZ	Regional	Civ	Yes	Yes	Paved	3,718	National
17	ES41	Valladolid	VLL	Regional	Civ	Yes	Yes	Paved	3,000	National
18	ES43	Badajoz	BJZ	Regional	Civ	O/R	Yes	Paved	2,850	National
19	ES53	Menorca	MAH	Community	Civ	Yes	Yes	Paved	2,350	National
20	ES53	Palma	PMI	International	Civ	Yes	Yes	Paved	3,270	National
21	ES53	Ibiza	IBZ	Community	Civ	Yes	Yes	Paved	2,800	National
22	ES61	Malaga	AGP	International	Civ	Yes	Yes	Paved	3,200	National
23	ES61	Sevilla	SVQ	Community	Civ	Yes	Yes	Paved	3,360	National
24	ES61	Jerez	XRY	Regional	Civ	Yes	Yes	Paved	2,300	National
25	ES61	Granada	GRX	Regional	Civ	Yes	Yes	Paved	2,900	National
26	ES61	Gibraltar	GIB	Regional	Mil	PTO	Yes	Paved	1,829	National
27	FI	Vágar	FAE	Community	Civ	O/R	Yes	Paved	1,250	National
28	FI13	Kajaani	KAJ	Regional	Civ	O/R	Yes	Paved	2,500	National
29	FI13	Kuopio	KUO	Regional	Civ	O/R	Yes	Paved	2,800	National
30	FI13	Joensuu	JOE	Regional	Civ	Yes	Yes	Paved	2,500	National
31	FI13	Savonlinna	SVL	Regional	Civ	Yes	Yes	Paved	2,300	National
32	FI13	Varkaus	VRK	Regional	Civ	Yes	Yes	Paved	2,000	National
33	FI13	Mikkeli	MIK	Regional	Civ	No	Yes	Paved	1,700	Independent
34	FI14	Tampere	TMP	Regional	Civ	Yes	Yes	Paved	2,700	National

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35	FI14	Pori	POR	Regional	Civ	O/R	Yes	Paved	2,000	National
36	FI14	Jyväskylä	JYV	Regional	Civ	O/R	Yes	Paved	2,601	National
37	FI14	Vaasa	VAA	Regional	Civ	Yes	Yes	Paved	2,500	National
38	FI14	Seinäjohti	SJY	Regional	Civ	No	Yes	Paved	1,540	Independent
39	FI15	Kuusamo	KOK	Regional	Civ	O/R	Yes	Paved	2,500	National
40	FI15	Kuusamo	KAO	Regional	Civ	O/R	Yes	Paved	2,500	National
41	FI15	Kemi-Tornio	KEM	Regional	Civ	O/R	Yes	Paved	2,500	National
42	FI15	Oulu	OUL	Community	Civ	O/R	Yes	Paved	2,500	National
43	FI15	Ivalo	IVL	Regional	Civ	Yes	Yes	Paved	2,500	National
44	FI15	Enontekiö	ENF	Regional	Civ	O/R	Yes	Paved	2,000	National
45	FI15	Kittilä	KTU	Regional	Civ	No	Yes	Paved	2,500	National
46	FI15	Rovaniemi	RVN	Regional	Civ	O/R	Yes	Paved	3,000	National
47	FI20	Mariehamn	MHQ	Regional	Civ	Yes	Yes	Paved	1,900	National
48	FR83	Calvi	CLY	Regional	Civ	PTO	Yes	Paved	2,310	Independent
49	FR83	Bastia	BIA	Regional	Civ	Yes	Yes	Paved	2,520	Independent
50	FR83	Ajaccio	AJA	Community	Civ	Yes	Yes	Paved	2,418	Independent
51	FR83	Figari	FSC	Regional	Civ	O/R	Yes	Paved	2,480	Independent
52	FRa	Pau	PUF	Regional	Civ	Yes	Yes	Paved	2,499	Independent
53	FRa	Tarbes	LDE	Regional	Civ	PTO	Yes	Paved	2,987	Independent
54	FRa	Perpignan	PGF	Regional	Civ	Yes	Yes	Paved	2,499	Independent
55	FRb	Nîmes	FNI	Regional	Civ	Yes	Yes	Paved	2,438	Independent
56	FRb	Rodez	RDZ	Regional	Civ	O/R	Yes	Paved	2,012	Independent
57	FRc	Grenoble	GNB	Regional	Civ	PTO	Yes	Paved	3,080	Independent
58	GR11	Kavala	KVA	Regional	Civ	O/R	No	Paved	3,000	National
59	GR11	Alexandroupolis	AXD	Regional	Civ	Yes	Yes	Paved	2,600	National
60	GR13	Kastoria	KSO	Regional	Civ	No	Yes	Paved	1,630	National
61	GR13	Kozani	KZI	Regional	Civ	No	Yes	Paved	1,830	National
62	GR14	Skiathos	JSI	Regional	Civ	No	Yes	Paved	1,610	National
63	GR21	Ioannina	IOA	Regional	Civ	No	Yes	Paved	2,400	National
64	GR21	Preveza	PVK	Regional	Mil	No	Yes	Paved	2,969	National
65	GR22	Kerkira	CFU	Community	Civ	Yes	Yes	Paved	2,375	National
66	GR22	Kefallinia	EFL	Regional	Civ	Yes	Yes	Paved	2,440	National
67	GR22	Zakynthos	ZTH	Regional	Civ	Yes	Yes	Paved	2,220	National
68	GR23	Araxos	GPA	Regional	Civ	No	Yes	Paved	2,990	National
69	GR24	Skiros	SKU	Regional	Civ	No	No	Paved	3,000	National
70	GR24	Kithira	KIT	Regional	Civ	No	Yes	Paved	1,480	National
71	GR25	Kalamata	KLX	Regional	Civ	No	No	Paved	2,661	National
72	GR41	Limnos	LXS	Regional	Civ	Yes	Yes	Paved	3,000	National

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73	GR41	Mitilini	MJT	Regional	Civ	Yes	Yes	Paved	2,414	National
74	GR41	Chios	JKH	Regional	Civ	No	Yes	Paved	1,500	National
75	GR41	Samos	SMI	Regional	Civ	Yes	Yes	Paved	2,100	National
76	GR41	Ikaria	JKK	Regional	Civ	Yes	No	Paved	1,310	National
77	GR42	Kastelorizo	KZS	Regional	Civ	No	No	Paved	799	National
78	GR42	Rhodos	RHO	Community	Civ	Yes	Yes	Paved	3,260	National
79	GR42	Karpathos	AOK	Regional	Civ	No	Yes	Paved	2,100	National
80	GR42	Kasos	KSJ	Regional	Civ	No	No	Paved	980	National
81	GR42	Astypalaia	JTY	Regional	Civ	No	No	Paved	980	National
82	GR42	Leros	LRS	Regional	Civ	No	No	Paved	1,015	National
83	GR42	Kos	KGS	Community	Civ	O/R	Yes	Paved	2,400	National
84	GR42	Santorini	JTR	Regional	Civ	No	Yes	Paved	2,120	National
85	GR42	Milos	MLO	Regional	Civ	No	Yes	Paved	800	National
86	GR42	Paros	PAS	Regional	Civ	No	Yes	Paved	710	National
87	GR42	Naxos	JNX	Regional	Civ	No	No	Paved	900	National
88	GR42	Mykonos	JMK	Regional	Civ	No	Yes	Paved	1,900	National
89	GR42	Syros	JSY	Regional	Civ	No	No	Paved	1,080	National
90	GR43	Sitia	JSH	Regional	Civ	No	No	Paved	730	National
91	GR43	Chania	CHQ	Community	Mil	Yes	Yes	Paved	3,600	National
92	IM	Isle of Man	IOM	Regional	Civ	O/R	Yes	Paved	1,737	National
93	IE01	Sligo	SXL	Regional	Civ	O/R	Yes	Paved	1,200	Independent
94	IE01	Donegal	CFN	Regional	Civ	No	Yes	Paved	1,500	Independent
95	IE01	Galway	GWY	Regional	Civ	O/R	Yes	Paved	1,350	Independent
96	IE01	Knock International	NOC	Regional	Civ	Yes	Yes	Paved	2,300	Independent
97	IE02	Dublin	DUB	International	Civ	Yes	Yes	Paved	2,637	Independent
98	IE02	Waterford	WAT	Regional	Civ	O/R	Yes	Paved	1,433	Independent
99	IE02	Cork	ORK	Community	Civ	Yes	Yes	Paved	2,134	Independent
100	IE02	Kerry	KIR	Regional	Civ	O/R	Yes	Paved	2,000	Independent
101	IE02	Shannon	SNN	Community	Civ	Yes	Yes	Paved	3,200	Independent
102	IS00	Isafjordur	IFJ	Regional	Civ	O/R	Yes	Unpaved	1,400	National
103	IS00	Keflavik	KEF	Community	Civ	Yes	Yes	Paved	3,065	National
104	IS00	Reykjavik	RKV	Regional	Civ	Yes	Yes	Paved	1,825	National
105	IS00	Vestmannaeyjar	VEY	Regional	Civ	No	Yes	Unpaved	1,205	National
106	IS00	Akureyri	AEY	Regional	Civ	O/R	Yes	Paved	1,940	National
107	IS00	Egilsstadir	EGS	Regional	Civ	Yes	Yes	Paved	2,000	National
108	IS00	Hofn	HFN	Regional	Civ	O/R	Yes	Paved	1,228	National
109	ITA	Palermo	PMO	Community	Civ	O/R	No	Paved	3,420	Independent
110	ITA	Catania	CTA	Community	Civ	Yes	Yes	Paved	2,550	Independent

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111	ITB	Olbia	OLB	Community	Civ	PTO	Yes	Paved	2,445	Independent
112	ITB	Alghero	AHO	Regional	Civ	Yes	Yes	Paved	3,000	Independent
113	ITB	Cagliari	CAG	Community	Civ	PTO	Yes	Paved	2,800	Independent
114	ITb	Genoa	GOA	Community	Civ	Yes	Yes	Paved	3,018	Independent
115	ITa	Lamenzia	SUF	Regional	Civ	O/R	Yes	Paved	2,377	Independent
116	MA00	Malta	MLA	Community	Civ	Yes	Yes	Paved	3,544	Independent
117	NO03	Sandefjord	TRF	Regional	Civ	O/R	Yes	Paved	2,940	Independent
118	NO04	Kristiansand	KRS	Regional	Civ	O/R	Yes	Paved	1,990	National
119	NO04	Stavanger	SVG	Community	Civ	Yes	Yes	Paved	2,555	National
120	NO04	Haugesund	HAU	Regional	Civ	O/R	Yes	Paved	1,720	National
121	NO05	Stord	SRP	Regional	Civ	O/R	Yes	Paved	1,200	Independent
122	NO05	Bergen	BGO	Community	Civ	Yes	Yes	Paved	2,905	National
123	NO05	Sogndal	SOG	Regional	Civ	No	Yes	Paved	943	National
124	NO05	Sandane	SDN	Regional	Civ	No	Yes	Paved	840	National
125	NO05	Floro	FRO	Regional	Civ	No	Yes	Paved	860	National
126	NO05	Forde	FDE	Regional	Civ	No	Yes	Paved	940	National
127	NO05	Alesund	AES	Regional	Civ	O/R	Yes	Paved	2,314	National
128	NO05	Molde	MOL	Regional	Civ	No	Yes	Paved	1,691	National
129	NO05	Kristiansund	KSU	Regional	Civ	O/R	Yes	Paved	1,840	National
130	NO06	Trondheim	TRD	Community	Civ	O/R	Yes	Paved	2,762	National
131	NO06	Røros	RRS	Regional	Civ	O/R	Yes	Paved	1,720	National
132	NO06	Namsos	OSY	Regional	Civ	No	Yes	Paved	838	National
133	NO06	Rørвик	RVK	Regional	Civ	No	Yes	Paved	880	National
134	NO07	Sandnesjøen	SSJ	Regional	Civ	No	Yes	Paved	1,087	National
135	NO07	Brønnøysund	BNN	Regional	Civ	No	Yes	Paved	1,439	National
136	NO07	Mo i Rana	MQN	Regional	Civ	No	Yes	Paved	841	National
137	NO07	Mosjøen	MJF	Regional	Civ	No	Yes	Paved	880	National
138	NO07	Bodø	BOO	Community	Civ	O/R	Yes	Paved	2,992	National
139	NO07	Harstad	EVE	Regional	Civ	O/R	Yes	Paved	2,815	National
140	NO07	Narvik	NVK	Regional	Civ	O/R	Yes	Paved	884	National
141	NO07	Bardufoss	BDU	Regional	Civ	No	Yes	Paved	2,440	National
142	NO07	Rost	RET	Regional	Civ	No	Yes	Paved	880	National
143	NO07	Svolvær	SVJ	Regional	Civ	No	Yes	Paved	860	National
144	NO07	Leknes	LKN	Regional	Civ	No	Yes	Paved	878	National
145	NO07	Stokmarknes	SKN	Regional	Civ	No	Yes	Paved	870	National
146	NO07	Andøya	ANX	Regional	Mil	No	Yes	Paved	2,468	National
147	NO07	Tromsø	TOS	Community	Civ	O/R	Yes	Paved	2,392	National
148	NO07	Alta	ALF	Regional	Civ	O/R	Yes	Paved	2,087	National

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149	NO07	Hasvik	HAA	Regional	Civ	No	Yes	Unpaved	974	National
150	NO07	Hammerfest	HFT	Regional	Civ	No	Yes	Paved	882	National
151	NO07	Lakselv	LKL	Regional	Mil	O/R	Yes	Paved	2,784	National
152	NO07	Honningsvag	HVG	Regional	Civ	No	Yes	Paved	879	National
153	NO07	Mehamn	MEH	Regional	Civ	No	Yes	Paved	853	National
154	NO07	Berlevag	BVG	Regional	Civ	No	Yes	Paved	880	National
155	NO07	Batsfjord	BJF	Regional	Civ	No	Yes	Paved	830	National
156	NO07	Kirkenes	KKN	Regional	Civ	O/R	Yes	Paved	1,890	National
157	NO07	Vardø	VAW	Regional	Civ	No	Yes	Paved	1,130	National
158	NO07	Vadsø	VDS	Regional	Civ	No	Yes	Paved	800	National
159	NO07	Svalbard	LRY	Regional	Civ	No	Yes	Paved	2,140	National
160	PT15	Faro	FAO	International	Civ	Yes	Yes	Paved	2,490	National
161	SE02	Västerås	VST	Regional	Civ	O/R	Yes	Paved	2,501	Independent
162	SE02	Örebro	ORB	Regional	Civ	PTO	Yes	Paved	2,302	Independent
163	SE02	Norrköping	NRK	Regional	Civ	O/R	Yes	Paved	2,203	National
164	SE02	Linköping	LDK	Regional	Civ	O/R	Yes	Paved	1,990	Independent
165	SE02	Borlänge	BLE	Regional	Civ	PTO	Yes	Paved	2,312	Independent
166	SE04	Malmö	MMX	Community	Civ	Yes	Yes	Paved	2,800	National
167	SE04	Ronneby	RNB	Regional	Civ	O/R	Yes	Paved	2,342	National
168	SE04	Angelholm	AGH	Regional	Civ	O/R	Yes	Paved	1,997	National
169	SE04	Kristianstad	KID	Regional	Civ	PTO	Yes	Paved	2,195	Independent
170	SE06	Söderhamn	SOO	Regional	Civ	O/R	Yes	Paved	2,524	Independent
171	SE06	Mora	MXX	Regional	Civ	Yes	Yes	Paved	1,814	Independent
172	SE06	Karlstad	KSD	Regional	Civ	Yes	Yes	Paved	2,516	National
173	SE06	Gävle	GVK	Regional	Civ	O/R	Yes	Paved	2,000	Independent
174	SE06	Pajala	PJA	Regional	Civ	O/R	Yes	Paved	1,402	Independent
175	SE06	Torsby	TYF	Regional	Civ	O/R	Yes	Paved	1,524	Independent
176	SE07	Ornskoldsvik	OER	Regional	Civ	O/R	Yes	Paved	1,804	National
177	SE07	Kramfors	KRF	Regional	Civ	No	Yes	Paved	2,001	Independent
178	SE07	Sundsvall	SDL	Regional	Civ	PTO	Yes	Paved	1,900	National
179	SE07	Ostersund	OSD	Regional	Civ	O/R	Yes	Paved	2,300	National
180	SE07	Sveg	EVG	Regional	Civ	No	Yes	Paved	1,350	Independent
181	SE08	Arvidsjaur	AJR	Regional	Civ	No	Yes	Paved	2,000	Independent
182	SE08	Hemavan	HMV	Regional	Civ	O/R	Yes	Paved	1,300	Independent
183	SE08	Storuman	SQO	Regional	Civ	No	Yes	Paved	2,283	Independent
184	SE08	Lycksele	LYC	Regional	Civ	No	Yes	Paved	1,552	Independent
185	SE08	Vilhelmina	VHM	Regional	Civ	No	Yes	Paved	1,502	Independent
186	SE08	Skelleftea	SFT	Regional	Civ	No	Yes	Paved	1,800	National

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187	SE08	Umea	UME	Regional	Civ	O/R	Yes	Paved	2,000	National
188	SE08	Kiruna	KRN	Regional	Civ	O/R	Yes	Paved	2,500	National
189	SE08	Gallivare	GEV	Regional	Civ	No	Yes	Paved	1,714	Independent
190	SE08	Lulea	LLA	Community	Civ	O/R	Yes	Paved	2,195	National
191	SE09	Visby	VBV	Regional	Civ	O/R	Yes	Paved	2,000	National
192	SE09	Oskarshamn	OSK	Regional	Civ	O/R	Yes	Paved	1,145	Independent
193	SE09	Hultsfred	HLF	Regional	Civ	No	Yes	Paved	1,945	Independent
194	SE09	Kalmar	KLR	Regional	Civ	PTO	Yes	Paved	2,050	National
195	SE09	Växjö	VXO	Regional	Civ	PTO	Yes	Paved	2,103	Independent
196	SE09	Jönköping	JKG	Regional	Civ	PTO	Yes	Paved	2,203	National
197	SE0A	Lidköping	LDK	Regional	Civ	O/R	Yes	Paved	1,990	Independent
198	SE0A	Göteborg Ladvetter	GOT	Community	Civ	Yes	Yes	Paved	3,299	National
199	SE0A	Göteborg City	GSE	Community	Civ	Yes	Yes	Paved	1,920	Independent
200	SE0A	Halmstad	HAD	Regional	Civ	PTO	Yes	Paved	2,268	National
201	SE0A	Trollhatten	THN	Regional	Civ	O/R	Yes	Paved	1,707	Independent
202	UKK3	Newquay	NQY	Regional	Mil	O/R	Yes	Paved	2,745	Independent
203	UKK3	St Mary's	ISC	Regional	Civ	O/R	Yes	Paved	600	Independent
204	UKM1	Aberdeen	ABZ	Community	Civ	Yes	Yes	Paved	1,829	Independent
205	UKM4	Islay	ILY	Regional	Civ	No	No	Paved	1,545	Regional
206	UKM4	Tiree	TRE	Regional	Civ	No	No	Paved	1,472	Regional
207	UKM4	Barra	BRR	Regional	Civ	No	No	Unpaved	1,500	Regional
208	UKM4	Benbecula	BEB	Regional	Civ	No	Yes	Paved	1,656	Regional
209	UKM4	Stornoway	SYV	Regional	Civ	O/R	Yes	Paved	2,200	Regional
210	UKM4	Kirkwall	KOI	Regional	Civ	O/R	Yes	Paved	1,432	Regional
211	UKM4	Sumburgh	LSI	Regional	Civ	O/R	Yes	Paved	1,426	Regional
212	UKM4	Campbeltown	CAL	Regional	Civ	No	No	Paved	2,896	Regional
213	UKM4	Inverness	INV	Regional	Civ	O/R	Yes	Paved	1,887	Regional
214	UKM4	Wick	WIC	Regional	Civ	O/R	Yes	Paved	1,825	Regional
215	UKN	Belfast International	BFS	Community	Civ	O/R	Yes	Paved	2,777	Independent
216	UKN	Belfast City	BHD	Regional	Civ	O/R	Yes	Paved	1,829	Independent
217	UKN	City of Derry	LDY	Regional	Civ	O/R	Yes	Paved	1,852	Independent

Key:

Use: Civ = civilian; Mil = military.

Customs: PTO = part-time only; O/R = on request.

IFR = Instrument Flight Rules.

Appendix E: Draft surveys for consultation

E1. Draft survey for consultation round 1



SURVEY ON AIRPORT MARKET ORIENTATION

August 2005

Dear Sir/Madam

This survey forms part of a project being conducted on the market orientation of airports in Europe's remoter regions, the focus of which is on passenger services. The survey is for academic purposes and the information that you provide will be treated in strict confidence. The survey has been sent to 217 airports in 17 different countries. Responses from individual airports will not be identified in any analysis.

The survey should take no more than 10 minutes to complete. It is recommended that the survey is completed by the Airport Manager or a senior member of staff who is responsible for marketing-related activities at your airport.

The survey can be completed by computer and sent back as an attachment, by email. Alternatively, the survey can be printed out, completed by hand and sent back by post or by fax. Contact details are provided at the bottom of this page.

The survey should be returned **by 25th September 2005**.

If you have problems completing the survey, or would like any help, then please call Nigel at London Metropolitan University on +44 (0)20 7320 1543 or send an e-mail to n.halpern@londonmet.ac.uk.

Yours sincerely
Nigel Halpern
Principal Lecturer, Aviation Management

Nigel Halpern, Centre for Civil Aviation, London Metropolitan University, 84 Moorgate, London EC2M 6SQ, England.
Tel: +44 (0)20 7320 1543. Fax: +44 (0)20 7320 1465. Email: n.halpern@londonmet.ac.uk.

XI. Appendices

UNLESS OTHERWISE DIRECTED, PLACE AN 'X' IN ONE BOX FOR EACH STATEMENT

A. GENERAL INFORMATION

1. AIRPORT NAME

Please STATE the name of your airport.

--

If you work for a company that manages several airports, please indicate which one airport you are most familiar with and answer all questions with reference to **this airport**.

2. YOUR JOB

Please place an 'X' in the box of the ONE category that best describes your job at the airport/airport company.

- Senior Management (with a background mainly in operations or engineering)
- Senior Management (with a background mainly in marketing or commercial activities)
- Senior Management (with a background mainly in the civil service, military or transport policy)
- Operations / engineering
- Marketing / commercial
- Public affairs / government relations / policy & planning
- Other (please specify):

3. AIRPORT TRAFFIC

My airport is focused on developing....

- Subsidised 'lifeline' services for the local community e.g. public service obligations
- Business linkages that improve access to domestic & overseas customers & markets
- International services that facilitate inbound &/or outbound tourism

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know

B. MARKET ORIENTATION

4. GATHERING MARKET INTELLIGENCE

My airport periodically....

- Conducts 'in-house' market research on its catchment area & potential demand
- Surveys passengers to assess product & service quality
- Meets with airlines & trade e.g. tour operators to discuss their needs & preferences
- Gathers intelligence on competing airports or modes of transport
- Monitors the likely effect of changes in the business environment e.g. regulations, travel trends & the economy on its customers

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know

5. SHARING MARKET INTELLIGENCE

At my airport, it is normal that....

- We hold interdepartmental meetings to discuss market trends & developments
- We publish & circulate the findings of passenger surveys to all staff
- We hold interdepartmental meetings to discuss customers & their needs
- Staff spend time talking 'informally' about customers & their needs
- Comments made by customers to airport workers are passed on to management

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know

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6. RESPONDING TO MARKET INTELLIGENCE

My airport tends to.....

- Use market research to target specific airlines & trade
- Respond quickly to changes in passenger preferences
- Alter services & facilities to reflect the needs & preferences of airlines & trade
- Be quick at targeting opportunities to gain competitive advantage
- Adopt interdepartmental strategies to respond to the changing business environment

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know

C. THE AIRPORT ENVIRONMENT

7. MARKET TURBULENCE

At my airport.....

- Airlines often change or cancel routes or frequency on an annual basis
- Airlines are very sensitive to changes in price e.g. airport user charges
- We cater to the same airlines & trade partners that we used to in the past
- Changes in travel trends & behaviour frequently affect annual passenger numbers

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know

8. COMPETITIVE ENVIRONMENT

My airport.....

- Competes fiercely with a neighbouring airport/mode of transport for passengers
- Competes fiercely with other airports/modes of transport for inbound traffic
- Feels that the development of other airports or modes of transport pose a real threat
- Will lose traffic to competitors if it fails to satisfy its airlines or trade partners

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know

9. PRICE REGULATION

At my airport, regulations mean that.....

- Airport user charges are set by an independent authority e.g. Government or CAA
- Payments must be made to airlines if service standards/quality fall below a set level

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know

10. MARKET CHARACTERISTICS

In relation to my airport.....

- The catchment area & potential demand offers significant opportunities for growth
- The market for air services in our region is growing rapidly e.g. over 5% per year

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know

11. AIRPORT INFRASTRUCTURE

My airport.....

- Is operating at full capacity & cannot handle more passenger traffic
- Can't attract certain types of aircraft e.g. because of runway limitations
- Is constrained by environmental considerations e.g. noise & operating limits
- Is constrained by operational conditions e.g. frequent adverse weather
- Finds it difficult to raise money for infrastructure improvements
- Relies mainly on public money to finance infrastructure developments

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know

D. THE AIRPORT ORGANISATION

12. MANAGEMENT & ORGANISATIONAL CULTURE

Managers at my airport.....

- Often tell staff that airport survival depends on adapting to market trends
- Often tell staff that customers are the most important thing to the airport
- Strongly believe that financial risks are worth taking for higher rewards
- Frequently encourage new and innovative strategies, knowing some may fail
- Feel that they are free to make most of the business decisions relating to the airport
- Feel that national or local government makes many decisions on the airports behalf

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know

13. HUMAN & FINANCIAL RESOURCES

At my airport.....

- The payment or promotion of managers is linked to operational or financial targets
- We have enough staff with a deep knowledge & experience in marketing
- Our management is mainly customer (as opposed to operations) orientated
- Market research is considered to be an extremely expensive exercise
- We are not spending enough on marketing

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know

14. PARTNERSHIPS & SUPPORT

At my airport.....

- Route development is strongly supported by public & private stakeholders
- Strong working relationships are maintained with public & private stakeholders
- Government &/or regional development agencies help fund new or existing routes
- Social & ethical responsibilities often stop good commercial decisions being made
- Business decisions are based mainly on commercial (as opposed to public service) considerations

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know

E. AIRPORT PERFORMANCE

15. AIRPORT PERFORMANCE

How do you feel your airport performed last year in relation to similar &/or competing airports?

- Number of successful new passenger services
- Retention of existing passenger services
- Market share
- Pre-tax profit (or loss) before subsidy

Much better	Better	No different	Worse	Much worse	Don't know

THANK YOU FOR COMPLETING THE SURVEY

Please return the survey as an email attachment or by post or fax to:

Nigel Halpern, Centre for Civil Aviation, London Metropolitan University, 84 Moorgate, London EC2M 6SQ, England.

Tel: +44 (0)20 7320 1543. Fax: +44 (0)20 7320 1465. Email: n.halpern@londonmet.ac.uk.

E2. Draft survey for consultation round 2



SURVEY ON AIRPORT MARKET ORIENTATION

September 2005

Dear Sir/Madam

This survey forms part of a project being conducted on the market orientation of airports in Europe's remoter regions, the focus of which is on airline passenger services. The survey has been sent to 217 airports in 17 different countries. Responses from individual airports will not be identified in any analysis.

The survey should take no more than 5 minutes to complete. It is recommended that the survey is completed by the Airport Manager or a senior member of staff who is responsible for marketing-related activities at your airport.

The survey can be completed by computer and sent back as an email attachment. Alternatively, the survey can be printed, completed by hand and sent back by post or fax. Contact details are provided at the bottom of this page.

The survey should be returned **by 25th October 2005**.

If you have problems completing the survey, or would like any help, then please call Nigel at London Metropolitan University on +44 (0)20 7320 1543 or send an e-mail to n.halpern@londonmet.ac.uk.

Yours sincerely
Nigel Halpern
Principal Lecturer, Aviation Management

Nigel Halpern, Centre for Civil Aviation, London Metropolitan University, 84 Moorgate, London EC2M 6SQ, England.
Tel: +44 (0)20 7320 1543. Fax: +44 (0)20 7320 1465. Email: n.halpern@londonmet.ac.uk.

A. GENERAL AIRPORT INFORMATION

1. AIRPORT NAME

State the name of your airport.

--

If you work for a company that manages several airports, please indicate which one airport you are most familiar with and answer all questions with reference to **this airport**.

2. AIRPORT PASSENGER SERVICES

Which of the following types of passenger service is your airport most focused on developing? Place an 'X' in one box.

- Subsidised 'lifeline' services for the local community e.g. Public Service Obligations (PSO's)
- Scheduled services operated by 'full-service' carriers (e.g. traditional mainline or regional carriers)
- Scheduled services operated by 'low-cost' carriers
- Charter services that facilitate inbound or outbound tourism

3. AIRPORT STRATEGY

Has your airport at any time over the last 3 years been trying to do any of the following? Place an 'X' in one box for each statement.

	Yes	No	Don't know
Attract new routes	☐	☐	☐
Grow existing routes	☐	☐	☐
Retain existing routes	☐	☐	☐

FOR THE REMAINDER OF THIS SURVEY, PLACE AN 'X' IN ONE BOX FOR EACH STATEMENT
Please note that the term 'airline' applies to airlines &/or trade customers such as tour operators

B. THE AIRPORT ENVIRONMENT

4. MARKET TURBULENCE & COMPETITIVE INTENSITY

At my airport.....

- Airlines often change or cancel routes or frequency on an annual basis
- Airlines are very sensitive to changes in price (e.g. in airport user charges)
- We cater to the same airlines as we did 3 years ago
- We compete fiercely with other airports for airlines
- We will lose out to competitors if we fail to satisfy our airlines

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐

5. DEMAND & SUPPLY

At my airport.....

- Potential demand offers significant opportunities for growth in our region
- The market for air services in our region grew rapidly last year (e.g. by over 5%)
- Future growth is constrained by infrastructure (e.g. runway/terminal limitations)
- Future growth is constrained by operating conditions (e.g. operating limits or frequent adverse weather)

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐

C. AIRPORT MARKET ORIENTATION

6. GATHERING MARKET INTELLIGENCE

At my airport.....

- We meet airlines at least annually to discuss their future needs
- We conduct a lot of 'in-house' market research
- We are slow to identify changes in the preferences of our airlines
- We are slow to identify major changes in our industry (e.g. technology)
- We regularly monitor the likely effect of changes in the business environment (e.g. travel trends & the economy) on our airlines

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know

7. SHARING MARKET INTELLIGENCE

At my airport.....

- We have interdepartmental meetings at least 4 times a year to discuss market trends & developments
- Marketing (or senior) staff spend time discussing the future needs of our airlines with staff in other departments
- Staff at all levels are quick to find out when something important happens to one of our major airlines
- When one department identifies an important change in the business environment, it is slow to alert other departments

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know

8. RESPONDING TO MARKET INTELLIGENCE

At my airport.....

- We review service standards at least annually to ensure that they are in line with what our airlines expect
- Several departments get together at least 4 times a year to plan a response to changes taking place in our business environment
- Even if we came up with a great marketing plan, we would probably be slow to implement it
- When we find out that our airlines would like us to modify an aspect of our service or facilities, we make a determined effort to do so
- For one reason or another, we tend to ignore changes in the needs of our airlines
- The activities of different departments at this airport are well co-ordinated
- We would respond quickly if a competitor targeted one of our airlines

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know

D. AIRPORT MARKETING INNOVATIONS

9. AIRPORT MARKETING INNOVATIONS

To what extent has your airport developed new ways to market itself to airlines over the last 3 years in terms of....

- Modifying facilities or services (e.g. to reduce costs or improve efficiency, access, or flexibility for airlines)
- Promoting a recognised airport brand (e.g. a distinctive name, logo, design or symbol)
- Targeting airlines for new routes (directly or at exhibitions such as 'Routes')
- Providing and presenting airlines with market research to prove market potential
- Lobbying government to remove regulatory obstacles (e.g. ban on night flights)
- Using strategic marketing partnerships (e.g. collaborations with local business or tourism)
- Offering flexibility on pricing (e.g. discounts or incentives)
- Developing joint advertising or promotional campaigns (e.g. offering marketing support)
- Providing travel planning support to passengers (e.g. through an airport website)
- Improving management processes (e.g. by appointing a member of staff to act as a point of contact and provide assistance to new or expanding airlines)

To a great extent	To some extent	Very little	Not at all	Don't know

E. AIRPORT PERFORMANCE

10. AIRPORT PERFORMANCE

How do you feel your airport has performed over the last 3 years compared to similar or competing airports in terms of....

- The number of successful new routes
- The growth of existing routes
- The retention of existing routes

Much better	Better	No different	Worse	Much worse	Don't know

THANK YOU FOR COMPLETING THE SURVEY

Please return the survey as an email attachment or by post or fax to:

Nigel Halpern, Centre for Civil Aviation, London Metropolitan University, 84 Moorgate, London EC2M 6SQ, England.
Tel: +44 (0)20 7320 1543. Fax: +44 (0)20 7320 1465. Email: n.halpern@londonmet.ac.uk.

Appendix F: Comments from the survey consultation & pilot survey

F1. Comments from consultation round 1

Comments
A few suggestions (mostly cosmetic) to your survey. I think it looks good, assuming that you have done a pretest of the propositions you included. One question I have is about the construct measured by those propositions in D. 12 (Management & Organizational Culture). It appears that those propositions are tapping on a few different aspects of organizational culture. I am just curious. (Note organizational culture is difficult to pin down.). Good luck.
Overall, I thought that the questionnaire looked reasonable – the questions themselves seem to make sense and are clearly grounded in much of the existing research in this area. I haven't got the original Kohli and Jaworski MO scale to hand but you've clearly used a shortened version – this isn't an issue per se, but when it comes to the thesis and subsequent publication, you might need to think carefully about how to justify this. I know length is a consideration but you might want to think about arguments surrounding proposition redundancy perhaps? Five point scales are reasonably standard – many studies start off with 7 point scales and then find that piloting pushes them towards 5 point scales because respondents are more comfortable. I guess that this, again, is an issue to think through. In terms of specifics, I have the following thoughts: • Questions 6(a) and (c) refer to airlines and trade – I wonder whether it makes sense to group the two together – is it possible that the airports might respond to one but not the other – and would they respond equally to both? Obviously you face a trade-off between additional length and greater specificity so the final decision must depend on how similar these two target groups are. • In the section on the competition, is there any need to include a specific question on the extent to which consumers have a feasible choice of airports? I know this is implicit in the questions on competition

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but wondered whether you wished to make this explicit?

- Many of the standard MO studies (building particularly on Kohli and Jaworski) include a ‘formalisation/centralisation’. You seem to have excluded this – is it worth re-considering? Again, I’m conscious of space issues but it has been demonstrated to be important in some contexts. Maybe you feel that the scale of the operation is such that this is less significant.

In short, I can’t see any major issues or concerns but would simply note that you will need to think carefully about justifying decisions to exclude certain propositions/constructs.

This seems OK. I have a couple of comments.

- In the covering letter it seems a bit presumptuous of you to impose a “return by” date. I suggest you drop this.
- Section 5 proposition 2. I suggest you replace “to all staff” with “to staff across all the airport’s departments”.
- Section 8 last proposition. “lose” not loose.
- Section 12. It is conventional to have more than one proposition to capture “innovative culture”.

Good luck with the research.

It’s an interesting topic and my pleasure to comment it! My concerns are below.

- Sampling: will you send it to every airport just one questionnaire or not? If just one, how to test Q2 tests for Senior Management & Marketing bias? If more than one? How to combine them? And I do not think Operations/engineering can understand MO.
- You have the data about airport size and ownership. Will you control other “control variables”? ex: public or private?
- Q7-9 investigates external factors (market turbulence, competition & price regulation). Maybe too many propositions? Will you delete some constructs?

Attached file please find a good paper in “Journal of Marketing”. Just for your reference! Good Luck!

I have taken a quick look at your survey, and find it to be of good quality. I really don’t have many comments. Just a few.

- “loose” should be spelt as “lose”.
- Some of the questions tend to ask for informants’ opinions (e.g., spending enough on marketing etc.). It may be better to stay away from these opinions of adequacy and instead measure the amount spent as

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much as possible.

- Similarly, better to not ask informants about cause and effect in an proposition as much as possible (e.g., regulations stop certain activities from taking place – better to ask the extent of regulations and the extent of activities and relate the two statistically).
- It would be desirable to collect as much ‘objective’ information regarding outcomes such as performance as possible in addition to judgmental data.

I hope this is of some use to you. I wish you well with your research!

Thank you for the above. Good luck with the project.

I would ask at Q.3 whether the airports target low cost airlines. As you know from my articles this appears to me to be the quickest way airports can increase their pax. Given the low yields you might explore whether there is any future in the strategy. Or can non-aeronautical revenues fund airports?

It looks really good – my only comment is that do you want a section for further bits and bobs that you haven’t addressed in the survey? Sometimes you get really useful info in this section and you could if you wanted to use it for ideas for future interviews etc.

A good survey. Short and to the point. I would perhaps add something like, ‘Growth is hampered by political indecision’ in section 5.

I have had a look at your questionnaire – you cover some very interesting issues.

I just have some minor points really relating to the clarity/interpretation of the questions. Some of these may just be my personal preference – which you may choose to ignore – but anyway here they are.

- You use both ‘overseas’ and ‘international’ here – would it not be more consistent to stick with just one word?
- Will all airports know what ‘periodically’ means? They may interpret it differently – I think you have to be more precise.
- Will all airports interpret ‘customers’ in the same way (e.g. passengers? airlines? both?).
- With publish/circulate findings of surveys to all staff – couldn’t you get negative responses if surveys are not undertaken OR if they are not circulated – how are you going to distinguish between the two?
- I feel ‘past’ is rather vague and perhaps you could be more specific.
- I’m not sure why you use ‘passengers’ in one question and ‘traffic’ in another. Is this significant and if so perhaps it should be explained?
- Do you really mean ‘set’ here (or do you mean ‘controlled’ as in the UK etc).
- Again it might be useful to have some kind of time horizon with the second part of this question.

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- Will all airports know what you mean by stakeholders? (It might be an idea to list a few for illustrative reasons).
- I'm not quite sure about the 'market share' question. Are you asking them whether their market share grew more than the other airports – perhaps it should be reworded something like market share growth or development. Or you could just be asking them about the relative size of their market share?

I hope these are useful. Good luck with the research.

Thanks for the questionnaire. I have had a look. Only one minor suggestion on my part.

In Q9 I guess you should say “set and approved by an independent authority.....”

I think the questionnaire is the correct length and should not take long to fill-in. Hopefully it will receive a positive response.

F2. Comments from consultation round 2

Comments
Many thanks. The survey looks very interesting and I would certainly like to see the results. The only suggestion I would make is that you include Air Freight amongst the business areas which the airport may be trying to develop.
The following are some thoughts. • Is your airport past growth constrained by? ▪ a) the dominate airline(s) in your region (not being interested in your airport) ▪ b) the dominate airport(s) in your region (taking your traffic away) ▪ c) lack of awareness of your catchment area potential by less dominant carriers and start-ups ▪ d) Other - please specify • The main reason that airports get over-looked is because the dominant carriers in the region see no purpose to their development etc. This has been the case in the UK because BA operates it's hub at LHR / LGW / MAN / BHX ... this has destroyed other airport growth opps etc. • Can your airport see a brighter future when the regulatory environment allows 'open skies' etc? And further de-regulation? Has the EU intra de-regulation affected your airport? How? This may be worth testing but overall your questions look really good!

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Very good job, go ahead with your survey.

Please find enclosed the survey with a few comments. They are given with the Norwegian context in mind.

- Q2. There may be multiple focus areas. Perhaps you should allow for 2 priorities? Something like this: ‘Two boxes can be filled in. Place 1 for the top priority, 2 for the second priority’.
- Q2. Perhaps also one category more: ‘Charter services facilitating local companies’. The Norwegian petroleum industry uses charter a lot.
- Q4.2. Airport user charges may give other responses from the airlines than changes in e.g. fuel prices – airport user charges may affect the choice of airport. Perhaps you may want to consider the level of precision here).
- Q4.3. Perhaps this question excludes airports to report whether additional airlines have entered the market? The Norwegian context: as you know, most of the airports in remoter areas (I mean remote remoter areas!) serve PSO routes with only one airline. If you have such airports on your respondent list, this question may be perceived as irrelevant.
- Q5.1. what kinds of activities do the airport tend to stimulate? I see that this may become rather extensive, but I expect a lot of responses to be “strongly agree” unless you force the respondents to be more specific.
- Q5.3. You may perhaps want to separate between runway/terminals and ANS because the cost implications are different in most cases. ANS equipment like ILS is often much less expensive than e.g. extended runways.
- Q5.4. Perhaps which ones? Some can be dealt with, while others are effective long run constraints).
- Q7.2. In remoter areas In Norway, I expect that “departments” may sound a bit ambitious because of the size of the airports. Do you perhaps mean departments elsewhere? Like e.g. Avinor’s central office here in Norway?
- Q7.4. See previous comment. It would be interesting to know how this information flow runs within Avinor's organisation
- Q8.2. Again: the term “department” needs clarification, I think.
- Q9.5. Lobbying activities may be done as a coordinated action from the central administration (Avinor). There are different obstacles, like night flights, financing of airport extensions and ANS equipment and so on. The Government, the CAA and Avinor have different roles in allocating funds and posing regulations. That is why I feel that you may want to increase the level of precision here. Perhaps more focus on “What are the main obstacles to the development of this airport?”
- Q10.2. Increased number of departures? Increased payload? PSO routes are normally strongly regulated)

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This is an exiting project and the respondents may want to tell you a lot. It is a high attention towards these matters at the moment. Good luck.

For me its looks as an interesting an easy to answer type of form. Since market orientation is a main issue here, however, I am missing something more about the priorities, policy and measures relative to service performance of the airport as well as customer-related priorities, f.ex. About complaints, responsiveness to customers, etc. Also about implementation of strategies, for example how to make use of market intelligence information. Staff training, service culture and service organisation are also other issues. This might exceed the capacity of the form and probably you have some clear idea about what you want to know.

- In question 9 f.ex. New options could be added after the sentence starting with Modifying. These options could be about systematically improving service quality etc.
- In question 4 alternative transportation (bus, train) could be added.
- In question 5, last option (e.g. operating limits or frequent adverse weather): I perceive them as two factors of quite different nature; the latter is not controllable at all (at least by established airports).

Well, these were some comments - hopefully not too late, and freely to be taken into consideration.

The instrument looks very good. However, the survey is asking a lot from the participants because the responses require some detailed analyses from airport staff to be correct. I would expect your response rate to be low for this reason. I would suggest you state that the results will be shared with those that participate. There has to be something in it for them. Otherwise, it's like pulling teeth. I have recently been bombarded with similar surveys from Doctoral candidates concerning aviation education. They also said it would take 5 minutes. Actually, I had to find five different people to fully answer these surveys. Generally, I needed to take 30 to 40 minutes of my time to get it right. The answers do not come that easily. But, you have got to get this information in order to find some relevant correlations and significant outcomes. Keep in mind; if your participants take only 5 minutes to complete the form, chances are your data will be worth about 5 minutes of their time, which will generally lead you to find the survey close to worthless. So I suggest you not say how long this will take. Make every effort to suggest they take time and do it right (in other such words).

Section E - stay away from "How do you feel" I would state this as: "Please indicate how your airport has performed.....". Make them get the data you need.

The layout is excellent. You should be able to tabulate the data in a meaningful way.

F3. Comments from the pilot survey

Comments
1. Took a look at the questionnaire and tried to answer it. It is pretty good. Do not have any further suggestions. 2. We send back your questionnaire fulfilled. We will very pleased if you can send us, when possible, a copy with the results of your research. 3. Please find enclosed the completed questionnaire. No problems were experienced in completing it. 4. I have answered your survey and am looking forward to the result. 5. Enclosed are our answers to your survey. 6. Please find attached. No problems. 7. Please find attached completed survey. 8. See attached file. Awaiting summary results. 9. Survey attached.

Appendix G: Final survey



SURVEY ON AIRPORT MARKET ORIENTATION

Month, Year

Dear Sir/Madam

This survey forms part of a project being conducted on the market orientation of airports in Europe's peripheral areas, the focus of which is on airline passenger services. The survey has been sent to 217 airports in 17 different countries. Responses from individual airports will not be identified in any analysis and results will be shared with participating airports.

The survey should be completed by the Airport Manager or a senior member of staff who is responsible for marketing-related activities at your airport.

The survey can be completed by computer and sent back as an email attachment. Alternatively, the survey can be printed, completed by hand and sent back by post or fax. Contact details are provided at the bottom of this page.

The survey should be returned by **Date**.

If you have problems completing the survey, or would like any help, then please call Nigel at London Metropolitan University on +44 (0)20 7320 1543 or send an e-mail to n.halpern@londonmet.ac.uk.

Yours sincerely

Nigel Halpern
Principal Lecturer, Aviation Management

Nigel Halpern, Centre for Civil Aviation, London Metropolitan University, 84 Moorgate, London EC2M 6SQ, England.
Tel: +44 (0)20 7320 1543. Fax: +44 (0)20 7320 1465. Email: n.halpern@londonmet.ac.uk.

A. GENERAL AIRPORT INFORMATION

1. AIRPORT NAME

State the name of your airport.

If you work for a company that manages several airports, please indicate which one airport you are most familiar with and answer all questions with reference to **this airport**.

2. AIRPORT PASSENGER SERVICES

Which of the following types of passenger service has provided the majority of passengers at your airport during the last 3 years? Place an 'X' in one box.

Subsidised passenger services (e.g. Public Service Obligations: PSO's)

Commercial passenger services

3. AIRPORT PASSENGER SERVICES

Which of the following types of passenger service has your airport been most focused on developing over the last 3 years? Place an 'X' in one box **however**, if your airport has multiple priorities, rank the priorities with 1 being the most important.

Scheduled services operated by 'full-service' carriers (e.g. traditional mainline or regional carriers)

Scheduled services operated by 'low-cost' carriers

Charter services that support inbound or outbound tourism

FOR THE REMAINDER OF THIS SURVEY, place an 'X' in one box for each statement

Please note that the term 'airline' applies to airlines &/or trade customers such as tour operators and local industry

B. THE AIRPORT ENVIRONMENT

4. MARKET TURBULENCE & COMPETITIVE INTENSITY

At my airport.....

Airlines change or cancel routes, frequency or seat capacity on an annual basis

We cater to the same airlines as we did 3 years ago

We compete fiercely with other airports for airlines

We will lose out to competitors if we fail to satisfy our airlines

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know

5. DEMAND & SUPPLY

In relation to my airport.....

Potential demand for air services in the region offers significant opportunities

The market for air services in our region grew rapidly last year (e.g. by over 5%)

Future growth is constrained by infrastructure (e.g. runway, lighting, terminal)

Future growth is constrained by operating conditions (e.g. limits, weather)

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know

C. AIRPORT MARKET ORIENTATION

6. GATHERING MARKET INTELLIGENCE

At my airport.....

- We meet airlines at least annually to discuss their future needs
- We conduct a lot of 'in-house' market research
- We are slow to identify changes in the preferences of our airlines
- We are slow to identify major changes in our industry (e.g. technology)
- We regularly monitor the likely effect of changes in the business environment (e.g. travel trends & the economy) on our airlines

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know

7. SHARING MARKET INTELLIGENCE

At my airport.....

- Managers meet at least 4 times a year to discuss market trends & developments
- Managers spend time discussing the future needs of our airlines
- High levels of communication are maintained between managers and other staff
- Staff at all levels are quick to find out when something important happens to one of our main airline customers
- Managers tend to be slow in alerting other managers of important changes in the business environment

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know

8. RESPONDING TO MARKET INTELLIGENCE

At my airport.....

- We review service standards at least annually to ensure that they are in line with what our airlines expect
- Managers meet at least 4 times a year to plan a response to changes taking place in our business environment
- Even if we came up with a great marketing plan, we would probably be slow to implement it
- When we find out that our airlines would like us to modify an aspect of our service or facilities, we make a determined effort to do so
- For one reason or another, we tend to ignore changes in the needs of our airlines
- The activities of different staff are well co-ordinated
- We would respond quickly if a competitor targeted one of our airlines

Strongly agree	Tend to agree	Neither	Tend to disagree	Strongly disagree	Don't know

D. AIRPORT MARKETING INNOVATIONS

9. AIRPORT MARKETING INNOVATIONS

To what extent has your airport developed new ways to market itself to airlines during the last 3 years in terms of....

- Modifying facilities or services (e.g. to reduce costs or improve efficiency)
- Promoting a recognised airport brand (e.g. a distinctive name, logo, design or symbol)
- Targeting airlines for new routes (directly or at exhibitions such as 'Routes')
- Providing and presenting airlines with market research to prove market potential
- Lobbying for the removal of obstacles to further development (e.g. ban on night flights)
- Using strategic marketing partnerships (e.g. collaborations with local business or tourism)
- Offering flexibility on pricing (e.g. discounts or incentives)
- Developing joint advertising or promotional campaigns (e.g. offering marketing support)
- Providing travel planning support to passengers (e.g. through an airport website)
- Improving management processes (e.g. by appointing a member of staff to act as a point of contact and provide assistance to new or expanding airlines)

Great extent	Some extent	Very little	Not at all	Don't know

E. AIRPORT PERFORMANCE

10. AIRPORT PERFORMANCE

How has your airport performed during the last 3 years compared to similar or competing airports in terms of....

- Attracting new routes
- Growing existing routes (i.e. growth in passenger numbers on existing routes)
- Retaining existing routes

Much better	Better	No different	Worse	Much worse	Don't know

THANK YOU FOR COMPLETING THE SURVEY

Please return the survey as an email attachment or by post or fax to:

Nigel Halpern, Centre for Civil Aviation, London Metropolitan University, 84 Moorgate, London EC2M 6SQ, England.

Tel: +44 (0)20 7320 1543. Fax: +44 (0)20 7320 1465. Email: n.halpern@londonmet.ac.uk.

Appendix H: Survey responses

No	Code	Airport	Timing			Method		
			1st	2nd	3rd	Email	Post	Fax
1	ATa	Salzburg	√			√		
2	CI	Jersey		√			√	
3	CI	Guernsey	√			√		
4	CH	Sion	√			√		
5	CY00	Larnaka		√			√	
6	DE	Friedrichshafen			√		√	
7	DK007	Bornholm		√		√		
8	ES13	Santander			√		√	
9	ES24	Zaragoza			√		√	
10	ES53	Menorca	√			√		
11	ES53	Ibiza			√		√	
12	ES61	Gibraltar	√			√		
13	FI14	Jyväskylä	√			√		
14	FI14	Seinäjoki			√	√		
15	FI1A	Kuusamo		√		√		
16	FI1A	Oulu			√		√	
17	FRb	Rodez			√			√
18	FRc	Grenoble	√			√		
19	GR11	Kavala		√		√		
20	GR21	Ioannina	√			√		
21	GR22	Kefallinia			√			√
22	GR22	Zakynthos			√			√
23	GR23	Araxos	√			√		
24	GR41	Limnos	√			√		
25	GR42	Rhodos	√					√
26	GR42	Kos	√					√
27	GR43	Sitia			√			√
28	GR43	Chania		√				√
29	IE01	Sligo			√	√		
30	IE01	Galway			√			√

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31	IE02	Dublin	√			√		
32	IE02	Waterford		√			√	
33	IE02	Cork		√			√	
34	IE02	Kerry		√			√	
35	IE02	Shannon		√			√	
36	IS00	Keflavik	√			√		
37	IS00	Akureyri	√			√		
38	ITB	Olbia		√		√		
39	MA00	Malta	√			√		
40	NO04	Kristiansand			√	√		
41	NO05	Bergen			√		√	
42	NO05	Ålesund	√			√		
43	NO05	Kristiansund	√			√		
44	NO06	Trondheim	√			√		
45	NO06	Røros			√		√	
46	NO07	Mo i Rana	√			√		
47	NO07	Bodø		√		√		
48	NO07	Harstad		√		√		
49	NO07	Røst	√			√		
50	NO07	Stokmarknes		√		√		
51	NO07	Andøya		√		√		
52	NO07	Tromsø		√				√
53	NO07	Lakselv			√		√	
54	NO07	Båtsfjord			√			√
55	NO07	Kirkenes		√		√		
56	NO07	Vardø	√			√		
57	NO07	Vadsø	√			√		
58	NO07	Svalbard	√			√		
59	PT15	Faro	√			√		
60	SE02	Västerås		√			√	
61	SE02	Norrköping		√		√		
62	SE02	Linköping City	√			√		
63	SE04	Ronneby			√		√	
64	SE04	Kristianstad		√			√	
65	SE06	Mora			√		√	

XI. Appendices

66	SE06	Pajala		√		√		
67	SE07	Kramfors			√		√	
68	SE07	Östersund		√		√		
69	SE07	Sveg			√		√	
70	SE08	Luleå		√		√		
71	SE09	Växjö			√		√	
72	SE09	Jönköping			√		√	
73	SE0A	Trollhättan	√			√		
74	SE0A	Göteborg Landvetter		√		√		
75	SE0A	Göteborg City		√		√		
76	SE0A	Halmstad			√			√
77	UKK30	St Mary's		√			√	
78	UKM1	Aberdeen		√			√	
79	UKM4	Islay	√				√	
80	UKM4	Tiree		√		√		
81	UKM4	Benbecula		√			√	
82	UKM4	Stornoway	√				√	
83	UKM4	Sumburgh			√			√
84	UKM4	Inverness	√				√	
85	UKM4	Wick	√				√	
86	UKN	Belfast City			√	√		
Total			31	29	26	45	29	12

