

**URBAN TRANSPORT NETWORKS AND OVERSEAS
VISITORS: ANALYSIS OF THE FACTORS AFFECTING
USAGE AND THE IMPLICATIONS FOR DESTINATION
MANAGEMENT**

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MANAGEMENT**

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This thesis is dedicated to Harry.

LIST OF ABBREVIATIONS

Abbreviation	Full Text
CS	Customer Satisfaction
ECT	European Cities Tourism
ETC	English Tourism Council
GMPTA	Greater Manchester Passenger Transport Authority
GMPTE	Greater Manchester Passenger Transport Executive
ICTs	Informing and Communicating Technologies
IP	Importance-Performance
KMO	Kaiser-Meyer-Olkin
K-S	Kolmogorov-Smirnov
NCI	Non Critical Incident
PCA	Principal Components Analysis
SQ	Service Quality
S-W	Shapiro-Wilk
TIC	Tourist Information Centre
TDR	Tourist Destination Region
UK	United Kingdom
UN	United Nations
VFR	Visiting Friends and Relatives
WTO	World Tourism Organisation
WTTC	World Travel and Tourism Council

ABSTRACT

Whilst transport has repeatedly been identified as an integral component in the tourism system, the relationship between urban public transport networks and visitor behaviour at urban destinations remains largely unexplored. Furthermore, tourist transport is rarely the subject of the same quality benchmarking techniques that are applied to other elements of the tourism product.

The thesis reviews the use of service quality and customer satisfaction measures in urban tourism and urban public transport, highlighting dimensions of urban public transport quality which may be of particular relevance to overseas visitors at urban destinations. The results of a survey of overseas visitors to Greater Manchester, employing both quantitative and qualitative data collection techniques, are subsequently presented, identifying factors affecting the use of public transport by overseas visitors to Greater Manchester. Attributes of public transport service quality, revealed by the research to be of importance in measuring overseas visitors' satisfaction with urban public transport performance in Greater Manchester, are reduced by means of principal components analysis to reveal the underlying dimensions of overseas visitors' satisfaction with Manchester's public transport system. An ensuing regression analysis reveals the relationships between the dimensions of public transport performance, overall satisfaction with public transport and satisfaction with Manchester as a visitor destination. Additionally, an importance-performance analysis is employed to uncover the strengths and weaknesses of public transport service in Manchester from an overseas visitor perspective. The implications for destination management are discussed.

CHAPTER 1

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

The aim of this study was to fill a notable gap in the existing literature by examining the impact of urban public transport systems on the tourist experience of overseas visitors, their travel behaviour at the destination and their perceptions of the city as a tourist destination. Whilst destination choice and visitor satisfaction are usually argued to be determined by such primary elements as cultural and entertainment facilities and the socio-cultural characteristics of a destination, the role of urban public transport on the tourist experience may have been underestimated thus far. A high proportion of international visitors to the United Kingdom (UK) arrive without their own private vehicle and, as air travel becomes a more popular means of travelling between cities, that number is growing. Many overseas visitors are therefore dependant on available public transport whilst in the UK. However, the transport and information requirements of international visitors may differ greatly from those of domestic visitors and local residents for whom the public transport is principally designed to cater. At a time of increasing competition between urban tourism destinations, the provision of adequate tourist transport for the visitor may assume a new level of importance. Where destinations are offering similar primary and secondary elements of the urban tourism product at a similar price, superior conditional elements may be an important differentiating factor.

1.2 Background

Incoming tourism is of enormous economic significance to the UK. As an important cultural, heritage and sporting centre and a major global economic force, the UK currently receives around 26 million visitors each year (BTA, 2002). Furthermore, both arrivals and departures are on an upward trajectory. Tourism is of major importance to the UK economy, both in terms of the amount of employment it creates and because of its impact on the Balance of Payments. In 2000, overseas visitors to the UK spent more than £12.5 billion, supporting the jobs of over 2 million people in tourism-related industries in the UK (DCMS, 2003). Visits to the top twenty urban destinations in the UK accounted for 19 million of the total 26 million visits by overseas visits to the UK in 2000 (BTA, 2002). These figures demonstrate that urban tourism is the principal form of tourism in the UK.

Since the 1980s there has been increasing recognition of the importance of tourism to UK cities (Law, 1993). The growing emphasis on urban tourism as an area of economic growth for cities has come about through the realisation that urban tourism acts as an important catalyst for the economic, social and physical regeneration of a city, creating benefits for residents of a city as well as for industries located there. Moreover, tourism is perceived as an environmentally friendly yet labour intensive industry which can benefit cities through income and job creation, particularly in the wake of the decline of traditional economic activities (Law, 1993).

1.3 Statement of the Problem

Whilst a number of UK cities, such as London, Canterbury and York, benefit from the advantage of a historically interesting and attractive built environment and a close association with aspects of British heritage, other cities such as Manchester, Birmingham and Liverpool, whose heritage is industrial and/or related to popular culture, have had to work harder to attract visitors. Such cities have traditionally attracted business visitors from overseas and some visiting friends and relatives (VFR) tourists but have struggled to catch the attention of leisure visitors. However, the rewards of urban regeneration through tourism are potentially greater for these cities as they have been able to partially liberate themselves from their poor, industrial image. Nonetheless, such cities are often less able to compete in the increasingly competitive market of urban destinations. The absence of a conventional, heritage-based tourism product (typically an internationally important historic built environment) to attract the visitor renders the provision of excellence in other elements of the tourism product perhaps more important. Thus, if transport (among other aspects) can be shown to be a contributing factor to destination satisfaction, the provision of an integrated public transport network which is designed to cater for the visitor may be a means of increasing competitive advantage for urban destinations.

At the same time, many of Britain's urban areas, and in particular its historic cities, are struggling to cope with large amounts of traffic and congestion, especially within the inner city (see Orbaşlı and Shaw, 2003). There is therefore a strong argument for increasing the use of public transport for leisure journeys which are non-essential

and arguably more amenable to modal switch. However, where visitors are to be encouraged to use public transport rather than private, the available public transport supply must be able to cater for visitor needs. The areas of the city to which visitors typically require access may not coincide with those which are best served by a public transport system designed for local users. Moreover, there may be barriers to public transport use experienced by overseas visitors which are different to those identified for local users. In particular, the specific information needs of overseas visitors with regard to public transport use remain uncharted. The identification of potential barriers to public transport use and of the specific information requirements of overseas visitors can assist in the design of a visitor friendly public transport system as part of a holistic destination management process.

1.4 Research Objectives

The specific objectives of the research were as follows:

- To identify the factors which affect visitors' use of urban public transport at overseas destinations;
- To measure the importance of these factors to a sample of overseas visitors to Greater Manchester;
- To measure the performance of the Greater Manchester public transport network from an overseas visitor perspective;
- To identify the extent to which satisfaction with public transport in Greater Manchester affects destination satisfaction for overseas visitors;
- To identify the types and sources of public transport information that are required by overseas visitors to Greater Manchester and their level of usefulness.

On a more general level, the research aimed to unite the studies of transport service quality (SQ) and visitor satisfaction. Hitherto, studies of public transport SQ have focussed on the attitudes of local users to existing public transport provision. Whilst these studies are productive in achieving their aim of informing the quality provision

of public transport, there has so far been a failure to address the attitudes of urban visitors to public transport provision. The thesis aimed to address precisely this issue.

At the same time, the role of transport in visitor satisfaction with destinations has been largely overlooked. Whilst a number of studies have identified accessibility as a factor in destination satisfaction and choice (e.g. Haywood and Muller, 1988; Avgoustis and Achana, 2002), there have been no detailed studies of the relationship between satisfaction with public transport and destination satisfaction. Moreover, the attributes of public transport which visitors use to measure satisfaction remain unexplored.

Thus, three main hypotheses of the study can be identified:

1. Overseas visitors measure satisfaction with urban public transport according to different attributes and underlying dimensions than local users;
2. Overseas visitors have different public transport information needs to local users;
3. Satisfaction with public transport is a contributing factor to destination satisfaction.

1.5 Justification for the Research

Within the field of urban tourism research, Ashworth (1992) and Pearce (2001a) argue for a greater theoretical and methodological understanding of urban tourism. Whilst integrative frameworks for the study of urban tourism have been proposed (Tyler, 2000; Pearce, 2001a), the problems of quantifying urban visitor impact and behaviour have not been resolved. Meanwhile, the need for a greater understanding of the demand side of urban tourism has been stressed with particular reference to the behaviour of visitors within cities (Pearce, 2001a).

In performing a more in-depth study of destination based transport than has previously been undertaken, the research will contribute to the creation of a framework for the study of overseas visitors' travel behaviour at urban destinations. In addition to producing results specific to the destination in question, the validity of the measurement instrument will be examined in order to refine the methodology for future research.

Furthermore, the research attempts to combine aspects of previous research from different disciplines, namely tourism, marketing and transportation research. Attribute based measures of transport satisfaction used in studies of local users' attitudes towards transport SQ are applied to overseas visitors and analysed using customer satisfaction (CS) techniques developed within the marketing and tourism fields. From a local perspective, by investigating areas of satisfaction and dissatisfaction with public transport from the standpoint of the overseas visitor, the research aims to determine measures which might assist in promoting modal switch to public transport at the destination in question. Such measures would not only increase satisfaction with public transport (and potentially with the destination) from a visitor perspective, but would potentially assist in the reduction of congestion and pollution. Moreover, some of these measures may hopefully be generalisable to other urban visitor destinations with similar concerns.

1.6 Research Paradigm and Framework

As stated above, there have been calls for contributions to the theoretical and methodological framework of urban tourism research (Ashworth, 1992; Pearce,

2001a). And it is not only within the area of urban tourism research that such a framework is perceived to be lacking; Stabler (1991) argues that research within the tourism field in general has been weakened due to the lack of established theoretical frameworks. A systems based approach to urban tourism research is arguably better placed to contribute to such a methodological framework, through improving understanding of connections and relationships within the system. Moreover, Foster (1999) argues that phenomena in tourism cannot be studied in isolation from the context in which they occur, thus advances towards systemic thinking are required to facilitate the development of tourism research.

Assumptions of the post-positivist paradigm dominate the research, in particular the philosophy of critical realism which claims to study external reality whilst accepting that all observation is susceptible to error and theories are open to constant revision (Trochim, 2002). The post-positivist conviction that all measurement is fallible advocates the use of multiple measures and observations in an attempt to reduce error. The use of a combination of qualitative and quantitative techniques is important to the critical realist in the examination of both observable and non-observable causal conditions. Moreover, a structuralist, systems-based approach is considered relevant for the study of causation in tourism and other social sciences, since it enables examination of the relationships and structures within which objects and individuals operate and exist (Foster, 1999). Thus, the research uses a mixed method approach of both qualitative and quantitative techniques within a systems framework, the goal being an understanding of the relationship between urban public transport and overseas visitors' travel behaviour.

Gaps in the literature and the fact that the research is exploratory supported an initial qualitative approach. The initial phase of primary data was therefore collected by means of semi-structured interviews eliciting information on the relationship between public transport and the urban tourist experience. Following analysis of the data obtained from these interviews a questionnaire survey was conducted, partially to assist in validating the conceptual framework established from the interview data, but also to permit more detailed analysis of the relationships between the variables involved. A series of statistical tests were employed in order to examine these relationships.

1.7 Definitions

Richards (1996: 20) identifies two means of classifying tourism: technical definitions and conceptual definitions. Technical definitions are formulated to establish parameters for the collection of tourism statistics in order to enable statistics from various sources to be meaningfully compared. World Tourism Organisation (WTO) definitions are now widely accepted for this purpose (see WTO, 1994; 1995). Conceptual tourism definitions are concerned with describing the phenomenon of tourism. There has been some debate as to whether it is useful to prescribe standard definitions of tourism concepts for tourism research as a whole, or whether it is more useful to assign concepts to tourism terms in order to suit individual research projects. Chadwick (1994) suggests that the precise scope of tourism definitions needs to be adjusted according to the objectives of each individual study. Accordingly, this requires the creation and adoption of conceptual definitions and a specific terminology for any tourism study. Such a terminology should indicate the hierarchy and relationship between terms in the field and the concepts they represent.

However, McIntosh *et al.* (1995) argue that the fact that existing definitions in the literature of tourism research have been aimed at fitting special situations and the particular needs of individual researchers has hampered the study of tourism as a discipline. Cooper *et al.* (1993) also charge the lack of agreement over definitions employed within tourism policy, practice and research with being a hindrance to achieving rigour and focus in the field. Whilst this argument is acknowledged, it is nonetheless necessary to outline the parameters of the concepts dealt with in this project.

The primary research targets only overseas visitors to Greater Manchester. The WTO makes a distinction between international visitors and international tourists. As can be seen from the definitions below (adapted from the WTO, 1995) not all international visitors are considered to be tourists. Furthermore, the WTO does not include international day visitors in its classification of international tourists.

- **International Visitor:** Person visiting a country where they do not normally reside for no longer than 12 months and without being remunerated from within the country they are visiting. This category includes refugees, embassy staff, members of armed forces etc.
- **International Tourist:** Temporary visitor to a country for more than 24 hours (one night spent in country). Motive for travel can be either leisure or business.

For the purposes of this study all international visitors to Greater Manchester were targeted irrespective of purpose of visit or minimum length of stay. However, the WTO guidelines on maximum length of stay and remuneration from within the country were adopted in order to exclude migrant workers or permanent residents from overseas. Thus, for the purpose of the research, the following definition of an *overseas visitor* has been employed:

- Temporary visitor from overseas to the Greater Manchester region for a period of less than 12 months and who has not been remunerated from within the UK.

It is further necessary to provide a spatial definition of the Greater Manchester region. Whilst there are clear geographic and administrative boundaries to the Greater Manchester region, it is not realistic to delimit tourism activity according to these boundaries. Moreover, the research is concerned with the relationship between visitor behaviour and Greater Manchester's public transport system. Whilst the vast majority of services operated under the auspices of Greater Manchester Passenger Transport Executive (GMPTE) are within the administrative boundary of the Greater Manchester region, there is some fuzziness around the boundaries of the region, particularly around the area of Manchester airport. In other words, whilst all public transport services within the administrative boundaries of Greater Manchester are operated under the auspices of GMPTE, not all GMPTE services operate within the Greater Manchester boundary. Thus, in order to introduce a definitive geographical boundary for the research, the administrative boundary of the Greater Manchester region has been adopted as an opportune zone within which to conduct the research.

The third term which requires definition is that of *urban public transport*. As stated above, the transport network under study falls inside the Greater Manchester metropolitan area and can therefore be regarded as urban. However, it is further necessary to define the modes of transport that will be investigated. Whilst taxis can be argued to be a public mode of transport since they are open to public use, studies of SQ and CS with public transport have typically ignored this mode of transport. Furthermore, taxis differ from other modes of transport in that they do not serve

specific routes and thus arguably have more in common with the private car in terms of accessibility and convenience. Moreover, in Greater Manchester taxis are not regulated by GMPTE and are therefore removed from the destination transport management process which the research aims to inform. For the above reasons, taxis are excluded from the definition of urban public transport for the purpose of this research. The term *urban public transport* is used exclusively to cover the three modes of public transport operated under the GMPTE administration; bus, tram and train. However, it is recognised that a study of visitor satisfaction with taxi provision in Greater Manchester could also produce results of value to transport management at the destination.

1.8 Outline of the Thesis

The thesis consists of 6 main chapters. This introduction is followed by Chapter 2, which examines the theoretical background to the relationship between urban tourism and public transport. The chapter sets the research in context by examining supply and demand factors of urban tourism within the spatial context of the city and identifying the role of public transport in the urban tourism product. The chapter concludes with a discussion of the peculiarities of Manchester as an urban visitor destination and the features of the city's public transport system. Chapter 3 attempts to place public transport SQ within the context of modal choice, examining the role of attributes of SQ in choice of transport mode and reviewing the attributes and methods used to measure SQ and CS with public transport by local users. The chapter then argues that overseas visitors have different attitudes than local users with regard to these attributes. The chapter also incorporates an appraisal of

methodologies used to measure CS and SQ within the marketing and tourism disciplines.

Chapter 4 presents details of the research paradigm and the strategies employed for the primary research, providing a comprehensive discussion of how the qualitative and quantitative research was operationalised. The characteristics of the sample are expounded and an introduction is given to the methods of analysis used to evaluate the hypotheses. In Chapter 5, the empirical findings of the research are discussed in four main sections. Descriptive statistics and bivariate relationship testing form the first section. An importance-performance analysis comprises the second section. In the third and fourth sections, factor analysis and multiple regression analysis are used respectively to uncover underlying dimensions and relationships among the variables. The final Chapter 6 considers the major conclusions from the primary research, outlines implications for destination management and offers suggestions for future research, building on the findings of the thesis.

CHAPTER 2

TRANSPORT IN THE URBAN TOURISM SYSTEM

2.1 Introduction

Chapter 1 outlined the rationale for the research and identified the following three principal hypotheses of the research:

- To investigate whether overseas visitors measure satisfaction with urban public transport according to different attributes and underlying dimensions than local users;
- To establish whether overseas visitors have different public transport information needs to local users;
- To ascertain whether satisfaction with public transport is a contributing factor to destination satisfaction.

The purpose of Chapters 2 and 3 is to present a comprehensive review of the literature which pertains to the main themes of the research. Whilst Chapter 3 is dedicated to a discussion of the literature on mode of transport choice and public transport SQ, Chapter 2 examines the urban tourism system and the role of public transport within that system. The chapter initially aims to explore the ways in which urban tourism has been defined before discussing the importance of urban tourism and the characteristics of urban tourism supply and demand. There follows a detailed discussion of urban public transport and its potential role in urban visitor behaviour and destination satisfaction. The quality management of urban public transport is discussed within the context of tourism and sustainability. The chapter concludes with an account of the characteristics of Manchester as an urban visitor destination and the features of Manchester's urban public transport system.

2.2 Defining Urban Tourism

Law (2002:4) claims that ‘the term urban tourism simply denotes tourism in urban areas’. This definition coincides with Ashworth’s (1992) spatial categorisation of urban tourism and is perhaps the most logical definition. However, attempts at defining the phenomenon of urban tourism have tended to focus on the supply and demand side characteristics of urban tourism which differentiate it from other types of tourism, perhaps in an attempt to justify urban tourism as a separate field of study. Schofield (2001) considers that the characteristics cities have in common can help explain their role as major tourist destinations. This latter type of definition is arguably most useful, since the characteristics and facilitators of urban tourism are important factors in giving meaning to the term. These attributes will be discussed in more detail below.

Several classifications of tourist cities exist within the literature. Page (1995:17) presents the following typology of urban tourist destinations which he qualifies by stating that it is only a ‘partial view’:

- Capital cities;
- Metropolitan centres and walled historic cities;
- Large historic cities;
- Inner city areas;
- Revitalised waterfront areas;
- Industrial cities;
- Seaside resorts;
- Purpose built integrated tourist resorts;
- Tourist-entertainment complexes;
- Specialised tourist service centres;
- Cultural/art cities.

Within this typology, Manchester is classified as an inner city area and is in fact the

destination that Page (1995) uses to exemplify the classification. However, Law (2002) notes that there are problems with this typology, not least that the justification for the classification is not clear. By placing Manchester in the category of inner city area, there is a suggestion that tourism is restricted to the city centre which, given the attraction of the Quays and the Manchester United football ground at Old Trafford, is clearly not the case.

A further, supply side classification of tourist cities into four types was proposed by Law (1996) on the basis of the facilities and attractions tourist cities possess. This classification is presented as Figure 2.1.

Figure 2.1 - Typology of Cities that Attract Tourism

Capital cities: Examples are London and Paris. They have major administrative and/or business roles which attract visitors. In addition they are home to national museums of world standing and historic monuments and buildings. Consequently they are important for both business and leisure tourism and attract visitors from a large geographical area.

Industrial cities: Examples are Baltimore and Manchester. These cities are the product of industrial development and usually have significant commercial roles. Their size in terms of population has meant that many facilities attractive to tourists have also developed. However, their industrial character and image is a barrier for the evolution of their tourism industry, and business tourism remains most significant for hotel-staying visitors. Geographically their leisure visitors are drawn mainly from the region or state in which they are situated.

High-amenity cities: Examples are Munich and San Francisco. These cities have a wide range of amenities such as natural scenery, attractions and entertainment, whilst at the same time possessing important business functions. They attract both business and leisure visitors, often from a wide area.

Major attractive cities: Examples are Florence and Miami. This category includes cities which, whilst multi-functional, are also perceived to be tourist cities either of a resort or historic nature. These cities are mainly visited by leisure tourists who are often drawn from a distance.

Source: Law (1996).

Law recognises that such a classification of cities is troublesome due to the difficulties in defining boundaries for the significance of tourist functions. Nonetheless, the classification is more detailed than that constructed by Page (1995) and the category in which Manchester has been placed less contentious, although it is arguable whether large population and an important commercial role are specific to industrial cities.

A third typology describing three basic types of tourist city is presented by Fainstein and Judd (1999):

- Resort cities created expressly for visitor consumption;
- Tourist historic cities which are attractive to tourists because of their history and culture;
- Converted cities where tourist activity is restricted to certain areas of the city which have normally been adapted for that purpose.

In the case of the above typology, Manchester clearly falls into the final category since important leisure areas of the city, such as Castlefield, the Northern Quarter, the Gay Village and the Quays, are rejuvenated, former industrial areas of the city. In addition, Fainstein and Judd's (1999) classification seems to extend beyond the city centre. A failing of the above classification, as highlighted by Law (2002), is the absence of any differentiation on the basis of size. Guidance is given on this matter by the European Cities Tourism (ECT) organisation, a collective of tourist boards from 80 European cities, which requires cities to have the following characteristics in order to qualify for membership of the organisation (ECT, 2003):

- More than 100,000 inhabitants;
- More than 3,000 hotel beds;
- Conference facilities;
- A significant monumental and historic heritage;
- Regular important cultural events.

Whilst it is not clear whether the criteria above relate to the whole metropolitan area or just to the city centre, Manchester meets all of these standards and can thus be considered an urban tourist destination. However, it should be evident that a historic city of scarcely 100,000 inhabitants will have quite different destination management requirements to a primarily industrial city, such as Manchester, with a much larger population. It is equally noteworthy that the above criteria do not require members to have achieved a certain level of visitation. This may be due to the difficulties of obtaining such data; indeed one of the key undertakings of ECT is to standardise the collection of data throughout member cities (see Wöber 1997; Wagner, 2002).

2.3 The Development of Urban Tourism Research

Blank (1994:181) claims '*every city* has a tourism industry; this is the first and most important fact about urban tourism'. Cities are natural focal points for the agglomeration of people. The large population of cities leads to a concentration of activities and facilities which, in turn, attract a conflux of visitors for both leisure and business purposes (Shaw and Williams, 1994; Law, 1996). As well as attracting visitors in their own right, cities also represent major travel nodes within the country or region within which they are situated, not only rendering them easy to reach, but also lending them a gateway function. Furthermore, as areas of high population density and centres of migration, they attract a high level of VFR tourists (Blank, 1994; Law 1996). Cities thus have a history of attracting visitors, making a significant contribution to international and domestic tourism, particularly in the developed world.

Despite the apparent importance of tourism in cities, it is only since the beginning of the 1990s that a coherent body of urban tourism research has emerged. Pearce (2001a) notes that much of the early work within the field was carried out by geographers and was rather piecemeal. A range of explanations have been put forward for the apparent neglect of urban tourism. The difficulty of isolating tourist activities from those of the local population has been highlighted as a deterrent to urban tourism research (Ashworth and Tunbridge, 1990; Ashworth, 1992). Shaw and Williams (1994) and Blank (1994) further attribute difficulties in describing urban tourism to the diversity of the phenomenon, pointing out that urban destinations are heterogeneous in size, location, function and age and that each urban destination possesses a unique set of facilities. Ashworth (1992) attributes the lack of focus in urban tourism to a *double* neglect, claiming that tourism researchers have tended to focus on more traditional rural or coastal leisure tourism destinations, while those involved in urban studies have ignored the tourist function of cities. The difficulties involved in establishing the precise characteristics of urban tourism and the activities of urban tourists is also argued to have led to considerable underestimates of the economic, social and geographic importance of urban tourism (Blank and Petkovich, 1987). Moreover, Schofield (2001) contends that the variety of activities and experiences that the urban tourist undertakes may be underestimated due to the traditional focus on cultural and heritage attractions and retail activities.

Particularly over the last decade, urban tourism has emerged as a ‘significant and distinctive field of study’ (Pearce, 2001a: 926) as the number of people taking

holidays in cities has increased¹. A variety of concerns have instigated this surge in interest in urban tourism research. Firstly, urban tourism is argued to fulfil a valuable role as a means of economic and physical regeneration, particularly in less traditional tourist cities with an industrial history (Shaw and Williams, 1994). Secondly, the rise in the number of tourists taking short breaks and, accordingly, the number of cities marketing themselves as short break destinations has created a greater need for effective destination management. On the one hand, large numbers of tourists in small historic cities necessitate a defensive sustainable tourism management strategy to protect the built and human environment at the destination. On the other hand, post-industrial cities which have made large investments in improving their tourist appeal require quality management strategies to ensure the delivery of a superior tourism product which will allow them to compete in a saturated market. In either case, the destination management process must be informed through pivotal research, and it is this which has driven the ‘explosion of publications on urban tourism’ during the 1990s (Law, 2002:7).

2.4 The Characteristics of Urban Tourism

It was argued above that urban tourism is most meaningfully defined in terms of its intrinsic supply and demand side characteristics. Ashworth (1992:3-4) poses the question ‘what is particularly urban about urban tourism?’. From a demand side perspective, it has been theorised that the urban visitor market is different in terms of its socio-demographic characteristics to other types of tourism (Page, 1995; Law 2002). Likewise, analyses of the supply side characteristics of urban tourism have

¹ Mintel (2000) estimates that the number of city breaks taken by UK residents, both at home and abroad, has risen from less than 11 million in 1996 to over 13 million in 2002 and project a further 15% growth by 2006.

attempted to identify the elements of the urban tourism product which make the phenomenon unique (e.g. Jansen-Verbeke, 1988).

2.4.1 Demand Side Characteristics – The Urban Visitor Market

A variety of typologies have been constructed to explain the demand side of urban tourism, although it is acknowledged that the demand for urban tourism is poorly understood (Blank and Petkovitch, 1987). Page (1997) suggests a typology of the urban visitor according to motivation for visit which includes VFR visitors, business travellers, conference and exhibition visitors, educational tourists, cultural and heritage tourists, religious travellers (pilgrims), hallmark event visitors, leisure shoppers and day visitors. Urban destinations are known to attract a high number of VFR and business visitors due to high population density and the concentration of commercial activities in cities. However, whilst a city may differ from its hinterland in terms of visitor motivation, it may equally differ from other urban destinations with quite different supply side characteristics.

Other demand side typologies have classified urban visitors according to use/non-use of certain facilities (Ashworth and Tunbridge, 1990). It is argued that, in the case of historic cities, ‘intentional users’ are motivated by the historic character of the city whereas for ‘incidental users’ the historic character is irrelevant (Ashworth and Tunbridge, 1990:119-120). Cultural and heritage tourists, religious travellers, hallmark event visitors and leisure shoppers normally have an element of choice as regards their destination and the decision is motivated by how the activities and facilities available at the destination equate with the type of experience they are

seeking as leisure tourists. These are the ‘intentional users’ referred to by Ashworth and Tunbridge (1990:120). Business, conference and exhibition visitors, on the other hand, have little, if any, influence on their choice of destination and thus may be classified as ‘incidental users’. VFR and educational tourists fall somewhere in between the two poles since travel motivation may be ambiguous. It is often unclear whether visiting friends and relatives provokes the main desire to visit the city. Likewise for educational visitors, the choice of destination may be as much to do with the attractiveness of a city as its educational facilities. However, it is acknowledged that the diverse nature of urban tourism and the range of facilities available to the tourist mean that the distinction between visitor motivations may be fuzzy (Blank and Petkovitch, 1980; Ashworth and Tunbridge, 1990).

Nonetheless, there appear to be attributes of urban tourism demand which allow it to be differentiated from other types of tourism. For example, urban tourism is characterised by short stays of one to three nights and attracts a high proportion of day visitors (Law, 2002). Mintel (2000) reports that major cities are the most popular short break destinations for UK travellers accounting for 29% of all short breaks in 2000. Urban tourism is also less seasonal than tourism at other destinations, often by design. The hosting of conferences, exhibitions and events is encouraged as a means of increasing visitor numbers outside of the peak visitation period. Furthermore it is generally accepted that urban tourists have different motivations for travel than tourists at other destinations and take part in a wider range of activities (Ashworth, 1989; Law, 1996).

Page (1995) notes that most of the data on urban visitor motivation is based on

research which is destination specific and that the significance of motivational factors differs according to the destination and its attractions. Nonetheless, he summarises the main motives for visiting urban areas as follows:

- Visiting friends and relatives;
- Business;
- Conference and exhibition;
- Education;
- Culture and heritage;
- Religious travellers;
- Hallmark events;
- Leisure shopping.

Law (1993) broadly divides tourists into two main types (business and leisure) on the basis of purpose of trip. Whilst it may be feasible to include VFR visitors in the leisure category, they will be dealt with separately for the purpose of this chapter, since their behaviour, expenditure patterns and motivation for travel contrast with those of non-VFR leisure tourists. Taking the above categories of leisure visitors, business visitors and VFR, it is possible to examine the attraction of cities for these different categories and their respective role in the rise of urban tourism. Level of economic impact for a destination city varies between the three different categories, despite the fact that the tourist activities of all three categories are interlinked.

2.4.1.1 The Urban Leisure Visitor

The general increase in leisure time, personal disposable income and consumer spending has led to a rise in travel and, more specifically, in the total number of secondary holidays (Mintel, 2002). Whilst the vast majority of city breaks are domestic, the expansion of low cost airlines, particularly on routes between the UK and Western Europe, has led to rapid growth in the number of foreign city breaks, a

rise which has been further stimulated by the use of the internet to purchase travel products, in particular airline tickets (Intel, 2002). Furthermore, there is anecdotal evidence that the introduction of the Euro in January 2002 has removed barriers to travel through reducing the expense of currency exchange and is of particular benefit to those who travel most. From a UK perspective, however, the introduction of the Euro is likely to pose a threat, rather than an opportunity to the number of incoming visitors from other EU countries.

Law (1996) suggests that an increase in leisure time and income is likely to lead to free time being used more actively for amusement and entertainment, rather than relaxation. The range of facilities and activities available in cities make urban conurbations a likely destination for such trips. In addition, improved access to the media and higher levels of education have raised the profile and popularity of cultural and heritage activities and events, often clustered in urban areas. For example, Foley (1996) found that visits to the British Museum in London increased by 123% between 1981 and 1996. Moreover, visits to the UK's museums and galleries have risen dramatically since the removal of entrance charges in December 2001 (Gibbons, 2002). Cultural tourism is seen as a positive development for urban destinations as it is particularly suited to short-break city-based tourism and broadens the tourist season (Williams and Shaw, 1991). In addition, arts and culture are considered economically important for urban tourism as they bestow prestige, a positive image and publicity on cities (Whitt, 1988). An ageing population with a high degree of disposable income is likely to favour cultural tourism, whereas young people are attracted to the range of entertainment and events in cities (Masser *et al.*, 1994; Law, 1996).

Indeed, the economic impact of leisure tourism in cities is thought to vary greatly between young tourists travelling on a budget, and ‘empty nesters’ with a greater amount of disposable income and for whom expensive restaurants and a trip to the theatre are an important part of the holiday package. Whitt (1988) considers arts and cultural tourists to be affluent and thus likely to be high spenders. The overall economic importance of cultural tourism to cities has been demonstrated by the example of the European City of Culture programme, by means of which cities such as Glasgow have marketed themselves as international cultural centres in a bid to attract tourists (Zeppel and Hall, 1992). Myerscough (1991) found that the £22 million expenditure costs of the city of Glasgow in its year as European City of Culture (1990) were more than offset by tourist expenditure of over £32 million. Nor does this amount take into consideration the long-term publicity benefits accrued. Since visitors to cities are attracted by the range of activities available and many cultural and heritage attractions charge an entrance fee, urban leisure visitor expenditure may be expected to be higher on average than, for example, expenditure in coastal resorts where fewer activities are undertaken which must be paid for. Ashworth (1995), however, accredits cultural tourism’s relatively high daily expenditure (compared with other forms of tourism) to the fact that it is predominantly hotel-based. In comparison with business tourists, leisure visitor spend tends to be less because accommodation providers offer discounted weekend packages for short break visitors (Law, 1993).

Major sports events also play a role in attracting a variety of leisure tourists to cities. In the UK in recent years, cities such as Manchester and Sheffield have benefited economically from hosting such events as the World Student Games in 1991, Euro

'96 and the Commonwealth Games 2002 (Foley, 1991, Dobson *et al.*, 1996).² The hosting of such events is normally viewed as a long term investment as it raises the profile of the city via media coverage. A more regular inflow of tourists has been the aim of cities such as Manchester and Liverpool who have sought to use football for tourism, through sports-weekend breaks (Law, 1992).

2.4.1.2 The Urban Business Visitor

Law (1996) notes that business tourism is often regarded as a contradiction in terms and has, in the past, been overlooked by tourism research, although it represents a large segment of the urban tourism market. Whilst the ratio of leisure to business visitors a city attracts is determined by various factors relating not only to the attractions and facilities it offers, but also to its marketing strategies and the spatial, socio-economic and cultural attributes of the city, it is nonetheless possible to state that the main flows of business visitors are between large commercial centres, the majority of which are large and often capital cities. Indeed Law (2002:25) notes that 'places lower down the urban hierarchy and with branch plant characteristics in their manufacturing and service economy will attract much smaller flows, far less than from the population size one might expect'.

However, business visitors are mainly attracted to urban areas by necessity rather than choice due to their role as commercial centres of regions or countries. Nonetheless business visitors create a demand for quality accommodation in cities and encourage the provision of more and better scheduled airline services to and

² Whilst it is too early for any comprehensive study of the financial impact of the Commonwealth Games in Manchester to have been completed, it has been reported that ticket sales exceeded revenue targets by more than three million pounds (BBC, 2002).

from cities, fostering an international character and playing a role in attracting leisure visitors (Cattan, 1995; Law, 1996). Conferences and exhibitions are necessarily held in cities due to the resources available there, including the advanced infrastructure and the availability of both accommodation and conference and exhibition facilities. The conference and exhibition business is a key part of urban tourism (Law, 1993). Since business visitors are less susceptible to destination marketing, city tourism marketing efforts focus heavily on conference and exhibition tourism, particularly since this type of visitor is typically high spending (Law, 1998). Whilst Bradley *et al.* (2002) found that the quality of meetings venues was more important than city image in choosing the location of a conference, nonetheless two thirds of respondents in their study ranked city image as important or very important. Therefore, the same leisure and entertainment facilities which attract the leisure tourist may play a major role in choosing a conference site.

Business visitors typically create higher than average expenditure and are the mainstay of the hotel and airline businesses (Law, 2002). Of primary importance is the fact that the business visitor is less likely to be financing his own trip and the incentive to economise is therefore reduced (Davidson, 1992). Business tourists thus provide the staple income for accommodation providers in cities and cut price packages are offered to leisure tourists at times when business and conference demand falls away. Further expenditure occurs in the form of rental of space and facilities for conferences and exhibitions. Vidal-Hall (1996) estimates that Britain's leading conference cities earn £1 billion a year from this source. Between 1989 and 1992 the UK was the world's third most popular country for international conferences (Rockett and Smillie, 1994).

2.4.1.3 VFR Visitors at Urban Destinations

Law (2002) notes that VFR visitor flows are correlated with population size and that large urban destinations thus attract greater numbers of VFR tourists than any other type of destination. Indeed, travel to visit friends and relatives has been found to constitute the principal reason for travel to many US hinterland cities (Blank, 1996). However, it is likely that many of the attributes that motivate leisure tourists to visit urban destinations also apply to VFR visitors. Thus, there may be greater motivation to visit friends or relatives who reside at an attractive destination. Certainly the same factors that have eased travel opportunities for leisure visitors also apply to VFR visitors, so that their numbers have been augmented by, for example, cheaper and more regular flights between cities.

The continuing migration to cities combined with the UK's Commonwealth past has led to most UK cities having a population that includes a rich variety of ethnic origins. Such a multi-cultural society is likely to attract more friends and relatives from further a field who may stay for longer periods. Educational tourism also has a role to play here as relatives and friends visit students studying in foreign cities. It remains difficult to quantify the economic impact of VFR tourism, although it is likely to be lower than that of other leisure and business tourists due to the dependence on the host; visitors staying with friends and relatives have no accommodation expenditure and are less likely to eat out as often or to have general living expenditure. Furthermore, Page (1997) notes that VFR visitors are often excluded from data collection exercises, particularly when these are focused on accommodation providers.

As intimated above, classifications of urban visitors by type of visit are by no means mutually exclusive; indeed a leisure tourist may choose to holiday at an urban destination precisely because the range of facilities enables him to participate in several types of tourism at the same location (Blank, 1994; Page, 1995; Law, 1996). Moreover, travel motivation cannot be considered homogenous among urban tourists. Purpose of travel differs greatly from one city to another (Blank, 1994). The decision to visit a particular city may well depend on the facilities that exist there. It should, however, be borne in mind that, particularly in the case of sports and cultural tourism, attractions may not be permanent and the prime motivator in visiting a city may be to attend a temporary event such as an exhibition or a sports match. Alternatively the heritage of a city may be the primary motivator in attracting tourists. European capitals such as Paris, London and Rome attract a large number of leisure visitors because of their historic interest, as well as attracting business visitors through their role as commercial centres. Furthermore, attractions are ‘rarely produced for, or used exclusively by, tourists’ but also serve local residents of the conurbation (Ashworth and Tunbridge, 1990:52). Often the range of facilities can exist only because the population of a city is large enough to support it (Law, 1996). As Ashworth (1989:39) sums up: ‘On the demand side, any one sort of facility is only one element in the tourism package consumed, and on the supply side the tourist is only one element in the market for the service’ (Ashworth, 1989:39).

2.4.2 Urban Tourism Supply

Evidently different cities offer different attractions and facilities for all types of user. However, one of the pioneering attempts to classify urban tourism supply advocated a systems approach (Jansen-Verbeke, 1988) designed to assist in supply side

analyses of urban tourism. Jansen-Verbeke (1988) equates the inner city environment to a tourist product.

“Before interrelationships can be analysed, the elements of the system need to be identified. The inner city environment is to be seen as ‘product’ offered to tourists” (Jansen-Verbeke, 188:66).

Figure 2.2 - The Inner City as a Leisure Product (Supply-side)

Activity Place Cultural facilities (theatre, concert movies, galleries) Entertainment facilities (casino, luna park, bingo) Events and festivities Exhibitions, craftworks	<u>Primary Elements</u>	Leisure Setting Physical setting Historical pattern Monuments, buildings Art objects Parks, green spaces Waterfronts, canals, harbour Socio-cultural characteristics Liveliness of the place Language, local customs, folklore Way of life
	<u>Secondary Elements</u>	
	Catering facilities Shopping facilities Markets	
	<u>Conditional Elements</u>	
	Accessibility Parking facilities Touristic infrastructure Information bureau, signposts, guides	

Source: Jansen-Verbeke (1988)

Jansen-Verbeke’s (1988) classification of the inner city as a leisure/tourist product, presented in Figure 2.2, divides the urban tourism product into ‘primary’ and ‘secondary’ elements which correspond to Ashworth’s (1984) ‘formal’ and ‘informal’ recreation functions of urban facilities. Jansen-Verbeke (1988) sees the

attraction of the urban leisure product as being both as an ‘activity place’ and a ‘leisure setting’.

2.4.2.1 The City as an Activity Place

Features of the city as an ‘activity place’ include facilities such as theatres, museums, art galleries, sports and amusement facilities, however temporary exhibitions and events are also incorporated. Jansen-Verbeke (1988) defines the city as an activity place in reference to the fact that the city is the heart of a wide range of cultural activities (from art galleries to fun parks) and that these facilities are used by both tourists and residents ‘to spend leisure time in all kinds of recreational activities’ (Jansen-Verbeke, 1988:53). Although some of the primary elements of the activity place are permanent attractions, such as museums and art galleries, tourists are equally attracted to cities by temporary events and exhibitions. Indeed, Townsend (1992) found that urban areas experience fewer visitors to museums per head of the population than rural areas do. Furthermore, whereas the physical and socio-cultural features of a city which constitute the city as a leisure setting are permanent and are not likely to invite a return visit, the attractions of an activity place are more likely to be updated in order to attract return visitors. Arts festivals, for example, serve as major attractions for city regions, attracting a well-educated and high-income market segment (Zeppel and Hall, 1992). Ashworth (1995) points to traditional arts events (e.g. Salzburg and Edinburgh) as the primary attraction for large numbers of foreign tourists and stresses the major contribution such events make to the local economies of cities. In the case of such cultural events, the physical and socio-cultural features of the city, although still enjoyed by the visitor, largely lose their importance as a tourist motivator.

2.4.2.2 The City as a Leisure Setting

The primary elements classified as belonging to the city as a leisure setting include those permanent physical and socio-cultural features of the city which act as tourist attractors. The importance of heritage as an urban tourism motivator is incontestable. Zeppel and Hall (1992:50) cite heritage as ‘the main strength of British tourism’. Ashworth and Tunbridge (1990) not only argue that the primary elements of the city as a leisure setting (the city’s historic resources) are the single most important attraction for tourists, but also claim that this makes tourist-historic cities the world’s most important tourism resorts.

‘The inherited built environment of historical architecture and urban morphology, associations with historical events and personalities and the accumulations of cultural artefacts and associations with artistic achievements and individuals are the raw materials from which the tourist-historic city is created’ (Ashworth and Tunbridge, 1990:59).

Although tourists may flock in large numbers to visit an event, it is normally the physical attributes of a city which attract a regular influx of visitors both throughout the year and from year to year. Cities which cannot be considered among the great heritage sites of the world may experience difficulties attracting visitors without running events, despite the fact that the secondary elements of their tourism function may be as good as or better than those of other cities with a rich heritage. At the same time, it is possible for the historic resources of a city to be used as secondary attractions by certain visitors, such as those attending conferences and exhibitions who make incidental use of leisure and heritage attractions (Law, 1998). Furthermore, a wide variety of heritage is marketed to urban tourists. Law and Tuppen (1986) refer to the selling of ‘industrial heritage’ in Manchester while cities

such as Portsmouth's and Bristol attempt to market their maritime heritage (Bradbeer and Moon, 1987).

Socio-cultural aspects of the city such as local customs and language can also be considered tourist resources (Jansen-Verbeke, 1988). Ashworth refers to this phenomenon as 'place-specific tourism'. He describes the attraction of important tourist cities as being 'the total sense of a place ... generated by the overall local culture of a Paris, London or Bangkok' (1995:270). Thus this type of tourism exploits the uniqueness of a city rather than its range of attractions and facilities.

2.4.2.3 Secondary Elements of the Urban Tourism Product

Secondary elements of the urban tourism product are facilities which the tourist makes use of, such as accommodation, shops, and catering establishments, and which, although they support the tourism function, may not necessarily be viewed as tourist facilities. Law (1993) believes the secondary elements of the tourism product are unlikely to be the cause of the visitor coming to the city, although he concedes that retail facilities may be part of the attraction of a city and, for some, the main travel motivator. Conversely, Ashworth and Tunbridge (1990) and Shaw and Williams (1994) argue that secondary elements may indeed play a primary role in certain tourists' motivation to visit. Indeed Ashworth and Tunbridge (1990) contend that visitors come to cities for their primary attractions but spend most of their time and money on secondary facilities. A major contributing factor to this inequality of expenditure is the fact that, whereas primary elements, and particularly those of the leisure setting, may be free to the tourist, secondary elements, belonging mostly to the commercial sector, are charged for (Jansen-Verbeke, 1988). Thus, the secondary

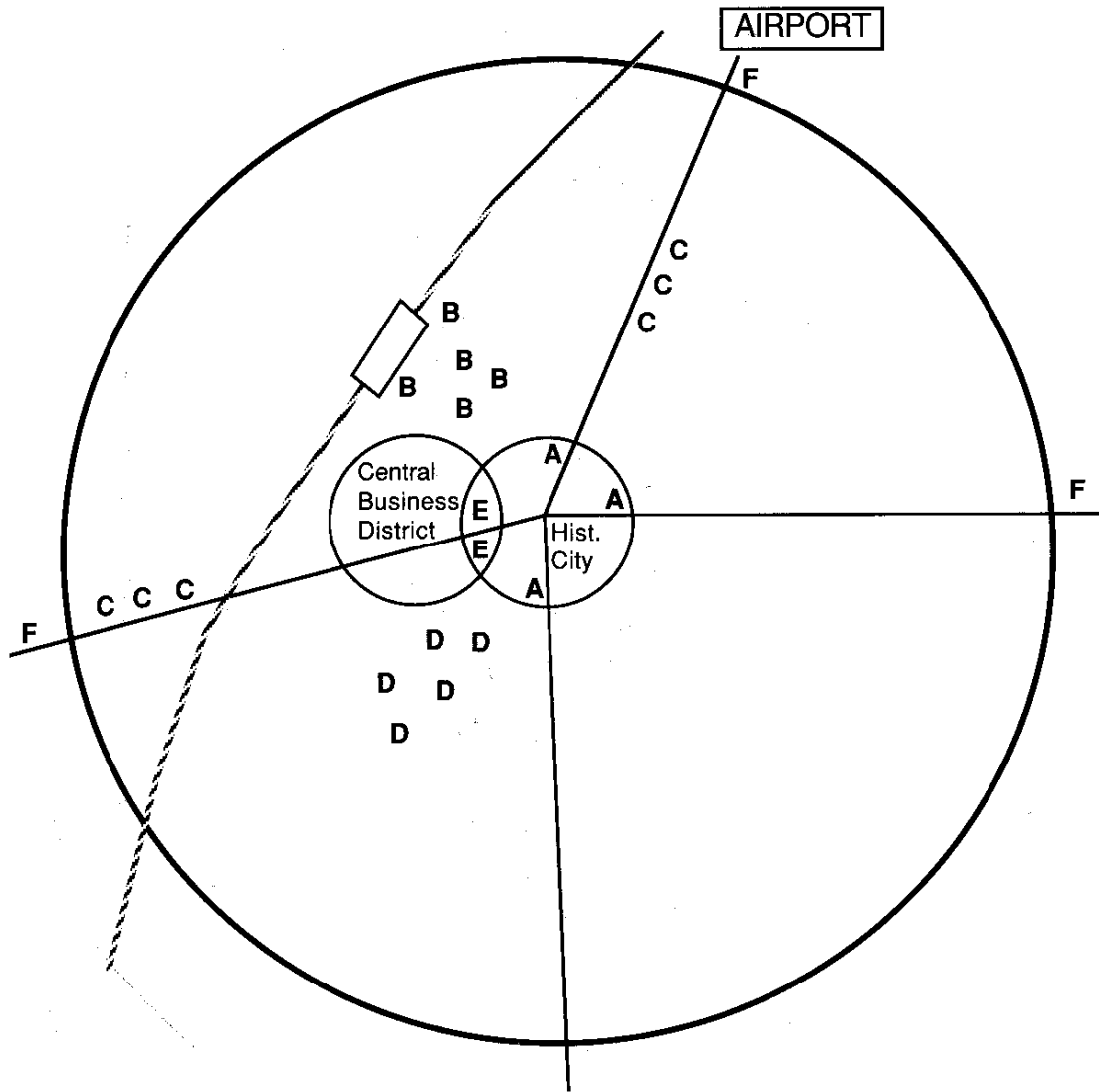
elements of tourism facilitate the urban tourism function, enhance the attractions and arguably assist in attracting tourists.



Accommodation

Hotels are a very visible manifestation of the urban tourism function within a city (Ashworth, 1989). Although not all tourists stay in hotels, any large city which aspires to be an important tourist centre requires a substantial stock of hotel rooms (Law, 1993). In the case of conference and exhibition tourists, the supply of hotel bed spaces in a city determines the size of conference the city can attract. Law (1993) points out that, for any city, visitors staying in hotels, rather than other types of accommodation, have the greatest economic impact. The location of a hotel will, to a certain extent, determine its market. City centre hotels can hope to attract a high concentration of business visitors where the city centre is an important business district. Hotels on the periphery of a city in close proximity to important transport nodes will attract both business and leisure tourists passing through. Whilst city centre hotels tend to be at the larger and more expensive end of the market, due to the nature of the custom they attract, less expensive hotels will generally be found along the main radial routes close to the city centre, where rents are less expensive. It is also common for hotels to be established in the proximity of popular leisure and business attractions which may be situated away from city centres. Given the diverse urban visitor market, it is important for a city to possess a supply of accommodation which covers the entire market range, from luxury hotels to youth hostels (Law, 1993).

A number of studies have examined the spatial distribution of hotels and other forms of accommodation in cities (e.g. Ritter, 1985; Pearce, 1987; Knoll, 1988). Ashworth (1989) argues that hotels, being mainly in the ownership of the private sector, are responsive to the same locational analyses as other commercial services in the city. Drawing on the above surveys, Ashworth (1989) has created a spatial typology of urban hotel locations which suggests six types of hotel locations within cities (see Figure 2.3). Shaw and Williams (1994) suggest that a seventh category be added, which describes those hotels located close to major tourist attractions. Law (2002) also notes that the construction of hotels near conference and exhibition centres has led to new clusters of hotels, particularly in North American cities.

Figure 2.3 - Typology of Urban Hotel Locations



Key	
	Railway station
	Main roads
A-F Hotel sites:	
A	Traditional market/city gates located
B	Railway/railway approach road locations
C	Main access roads locations
D	Medium sized hotel on 'nice' locations
E	Large modern hotels in transition zone of Central Business District/historic city
F	Large modern hotels in urban periphery on motorway and airport transport interchanges

Source: Ashworth (1989)

Ashworth and Tunbridge (1990) conclude on the basis of the above typology that, whereas recognisable clusters of hotels are identifiable, these concentrations are dispersed throughout the city. This observation is confirmed by Law (2002), who notes, for example that luxury hotels are found clustered around the most prestigious sites, whilst budget hotels are pushed to the outer edges of the city centre. Ashworth and Tunbridge (1990) contend that the spatial and functional relationships between accommodation and other urban tourism supply elements are likely to be different for each type of hotel cluster. Thus, city centre hotels have much greater associations with the functions of the city (tourist attractions, commercial activities) whereas peripheral hotel locations are less strongly associated with the other tourism elements of the city and therefore poor indicators of the tourist city (Ashworth and Tunbridge, 1990). Boniface and Fowler (1993) refer to a further role of hotels in the urban tourism function, contending that large hotels may be part of the urban heritage of a city, both functionally as a meeting place and architecturally. In such cases, the desire to stay in the hotel itself may be a prime motivator for some tourists to the city. At the same time, particularly for short break visitors, the decision between two or more potential urban destinations may be made on the basis of the most favourable hotel deal available.

Catering Facilities

Catering facilities are among the most frequently used tourism services (Ashworth and Tunbridge, 1990). Law (2002) argues that the richness of an urban destination's gastronomy depends more on the range of catering facilities on offer to the visitor than on the availability of upmarket restaurants, particularly since the individual visitor is likely to use a range of restaurants during a stay. Catering establishments

tend to be clustered in certain areas of the city which Ashworth and Tunbridge (1990) refer to as 'latin quarters'. Law (2002) asserts that customers are attracted to clusters of establishments due to the increased likelihood of their finding one to their liking. However, Jansen-Verbeke (1988) believes that the location of catering establishment is also dictated by a desire to interact with other urban facilities - primary elements such as tourist attractions as well as secondary elements such as shops. Shaw and Williams (1994) confirm this phenomenon, referring to research carried out in Paris by Bonnain-Moerdyk (1975) which has shown how restaurants have been forced to reposition due to geographical changes in commercial and entertainment areas.

Clusters of restaurants in the city centre attract shoppers and office workers as well as leisure patrons and tourists (Law, 2002). Thus, despite the defined spatial location of catering establishments, they cannot be considered reliable indicators of tourist activity in a city since their use by tourists is mainly secondary to their use by residents and workers. As a result, their distribution throughout the city is largely dictated by the distribution and economic activity of the resident population, rather than an indicator of areas of tourism activity (Ashworth and Tunbridge, 1990).

Catering establishments, whilst unlikely to be a prime motivator for visiting a city, have a contribution to make to the attractiveness of the inner city and thus to the image of the city as a tourist destination. Jansen-Verbeke (1988:268) stresses the 'important role catering facilities play in adding a leisure dimension to the inner city visit'. Pavement cafés and the above mentioned clusters of restaurants and bars create an ambience in areas of the inner city which not only makes them seem more

attractive, but also renders them less intimidating after dark. In this way, catering establishments are not only supporting the primary elements of the tourism functions, serving the basic needs of tourists, but also playing a role in attracting visitors to the city and creating a positive city image.

Retail Facilities

Although shopping is identified by Jansen-Verbeke (1988) as a secondary element of the urban tourism function, it is often listed by tourists as one of their most important activities (Kent *et al.*, 1983). Indeed shopping plays a primary role in attracting visitors to certain cities, particularly in South East Asia. Hong Kong, Singapore, Kuala Lumpur, Manila and Bangkok all market themselves as shopping centres (Boniface and Fowler, 1993). However, European cities such as London and Paris also attract tourists because of their quality retail facilities (Law, 2002).

All urban areas with a tourism industry benefit from tourist shopping expenditure. Law (1993) cites the examples of Bath, Chester and York, which have become retailing centres of much greater import than could be expected by the size of their resident population, due to the numbers of visitors they attract as historic cities. For many, shopping is an enjoyable leisure activity and one which becomes more pleasurable for the tourist who is attracted by the desire to find different goods in foreign places (Jansen-Verbeke, 1998).

The link between tourism and leisure shopping has attracted a great deal of attention due to the potential for using shopping as a marketing tool by the tourism industry (Page, 1995). City planners are frequently concerned with improving the

attractiveness of the city centre as a shopping area. Page (1995) and Jansen-Verbeke (1988) both cite the establishing of pedestrian precincts and the improvement of access to the city centre as important measures in this process. Furthermore, Owen (1990) suggests that urban tourism may itself provide the stimulus for the improvement of inner city shopping areas. However, a more recent phenomenon in the UK has been the construction of ‘out of town’ shopping malls, after the American model, partially in response to traffic congestion problems in the inner city. Self contained retail villages, such as the Trafford Centre located in a suburb of Greater Manchester, have the potential to draw visitors away from the city centre. Indeed, the attraction of large retail centres is such that hotels may be located adjacent or nearby.

Spatial location does appear to play a role both in the popularity and the planning of tourist shopping. Jansen-Verbeke (1988) suggests that the appreciation of the historical setting of a retail area plays a role in the attractiveness of markets and other shopping areas in the city centre. Whilst admitting that the impact of the historical setting on the leisure experience of the shopping trip is difficult to prove, Jansen-Verbeke claims that the inner city shopping area benefits over suburban shopping centres from the additional attraction of its ‘characteristic setting and lively ambience.’ (Jansen-Verbeke, 1988:266). Meanwhile, Shaw and Williams (1994) argue that the retail environment of the inner city is developing a strong bias towards leisure activity, citing the example of Covent Garden in London.

Pearce (1987) identifies clusters of retail activity within or close to important visitor attractions. In this way, urban tourism influences the spatial distribution of,

particularly tourist based, retailing. However, with the exception of certain retail facilities, such as those at tourist attractions that cater almost exclusively for the tourist, it is not possible to apply the geographical distribution of retailing facilities to any mapping of tourist activity within the inner city. This is because any study of the distribution of tourist shopping facilities requires an artificial separation of the facility and its users from the context in which it is enjoyed (Ashworth, 1989).

2.4.2.4 Conditional Elements of the Urban Tourism Product

A third category in Jansen-Verbeke's (1988) classification identifies conditional elements such as parking facilities and information centres which support the urban tourism product. These elements of urban tourism relate mainly to accessibility within the destination and information provision for the visitor.

Tourist Information Centres and Travel Guides

Whilst a variety of studies have investigated the role of information in marketing cities (Main, 2002; Zins, 2002) and in pre-trip travel planning (Fodness and Murray, 1998, 1999; Tjøstheim and Tronvoll, 2002), there appears to be a notable gap in the literature with regard to tourist use of information sources at urban destinations. The increasing importance of Informing and Communicating Technologies (ICTs) as a means of distributing information has provoked a large number of publications; however the main focus of research into information technology within the tourism industry is the influence of the latter on the chain of distribution and market channels within the industry. Nonetheless, one useful study of the use of ICTs by Tourist Information Centres (TICs) has identified the need to establish visitors' information

requirements and to ascertain the best means of providing this information to the visitor (Connell and Reynolds, 1999).

It seems reasonable to suggest that the urban visitor may have greater information requirements than visitors to smaller resorts. To begin with, the sheer number of tourist attractions and facilities is greater in urban areas, so that there is more information to dispense. Furthermore, visitors to large urban areas require information to navigate around the destination which may not be necessary in a smaller resort. Thus, TICs play an important role in cities, not only in providing information for the visitor, but also in arranging guided tours and walks throughout the city (Jansen-Verbeke, 1988). Furthermore, the larger the destination, the more effective tourist signposting and way-marking needs to be. Jansen-Verbeke (1988) states that the contribution of tourist information facilities to the attraction of an urban visit is often underestimated. Moreover, Shackley (1998) claims that the lack of such facilities and the problems in finding major attractions due to the absence of maps or signposting has negatively affected the quality of the visitor experience in the cities of Damascus and Aleppo.

Transport as a Conditional Element of the Urban Tourism Product

Whilst transport is a vital constituent of the urban tourism product, it is regarded as a conditional element by Jansen-Verbeke (1988), probably because the demand for transport is derived as a product of tourism demand. However, the spatial distribution of accommodation, catering establishments and retail facilities in cities discussed above lends importance to the issues of infrastructure and accessibility within urban tourism destinations (Page, 1995). Particularly in large urban

destinations which cannot be entirely explored on foot, transport is an essential facilitator linking the other tourism elements of the destination. However, internal accessibility within urban destinations has been afforded surprising little attention within the urban tourism literature and is the principal focus of this thesis. It is therefore the purpose of the following section to review the importance of transport at urban destinations and to postulate on the contribution of urban transport to city image and destination satisfaction.

2.5 The Study of Tourist Transport

Transport's pivotal role within the tourism system is widely acknowledged in the tourism literature by (*inter alia*) Hall (1999), Page (1999) and Seekings (2001). Within Leiper's (1990) tourism system it is possible to identify three geographical regions in which tourist transport is located; the Traveller Generating Region, the Transit Route and the Tourist Destination Region (TDR). Perhaps understandably, transport within the transit route, 'the essential link between tourism origin and destination areas' (Page, 1999:1), has been afforded more consideration than internal accessibility within the TDR. Studies by transport geographers have investigated the linkages and patterns of tourist flows between origin and destination (Boniface and Cooper, 1994; Pearce, 1995; Page, 1998; Page, 1999). Considerable focus has also been placed on the accessibility of destinations for tourists (e.g. Hall, 1991; Page and Sinclair, 1992; Cline *et al.*, 1998) particularly as a factor of importance in destination choice (Law, 2002). In the case of business and conference tourism, Bradley *et al.* (2002) found accessibility to be the foremost attribute taken into account when selecting a venue.

Studies which have examined tourist transport as the throughput element of the system, i.e. within a specific destination, have been less common. Hall (1999) has examined inequalities and user conflicts with regard to tourist use of transport at destinations. In addition, there has been some examination of the transport implications of tourism development (e.g. Heraty, 1989; Hall, 1993). Emphasis has also been placed on the use of sustainable means of transport (in particular cycling) for leisure purposes and the potential for reduction of car journeys (e.g. Forster, 1982; Lumsdon, 1996). However, such studies have tended to focus on rural or less developed areas and have taken a top down approach to planning recreational transport, rather than investigating the requirements of the visitor. Meanwhile, within the transport literature, studies of various aspects of urban transportation (e.g. Hovell *et al.*, 1975; Hey and Sheldrake, 1997; Turton and Knowles, 1998; Richards, 2001) have failed to identify the issue of tourist use of urban public transport, preferring to focus on local users, in particular commuter traffic. Thus, there is a gap in the literature with regard to whether the factors affecting public transport use and satisfaction are identical for visitors and local residents alike.

Nonetheless, a few studies of tourist use of transport in urban areas exist. Page (1989) and Evans and Shaw (1999) have investigated the tourism-led regeneration of urban areas (both papers examine the case of London) with particular reference to the role of transport and access. Pearce (2001b) explores the role of government policy in the development of a tourist dedicated tramway in Christchurch, New Zealand. However, given the importance of the relationship between transport and tourism, such studies are surprisingly rare. None of the above mentioned studies have examined visitor experiences and satisfaction with transport at urban

destinations. Moreover, there has been no attempt to investigate the degree to which public transport in urban destinations lends itself to use by visitors from outside of the region, or indeed the country in question. An analysis of the importance of transport at urban destinations, its role in destination satisfaction and the potential implications for destination management and research is therefore indispensable at this stage of the research. The latter question of visitor satisfaction with public transport will be dealt with in a subsequent chapter (Chapter 3).

2.6 Transport and Accessibility of the Urban Tourism Product

As discussed above, the importance of accessibility to the urban tourism product is undisputed. Cities are better able to attract visitors due to their position at the centre of regional, national and international transport networks. van der Berg *et al.* (1995) distinguish between *external accessibility* of the tourist city and *internal accessibility* of the tourist product, arguing that both are vital to the attractiveness of the tourist product. It is the internal accessibility of the city and its tourism product with which this study is chiefly concerned.

Law (2002) notes that travel within the city involves at least two aspects. Visitors firstly undertake a journey from the point of entry to their accommodation (in the case of staying visitors) and secondly move around the city itself. In cases where the visitor arrives by private car, all journeys may be undertaken by this mode. However, air is an increasingly important means of arrival at urban destinations, particularly as a result of the increase in low cost carriers. In a study of the outgoing UK city break market, Mintel (2002) found that 30% of tourists had used the private

car for their last city break, whereas 36% had used air travel³. This figure includes both domestic and international travel and the percentage of visitors travelling to overseas destinations by air is therefore likely to be higher. Furthermore, in the case of an island such as the UK, a greater percentage of air travellers can be expected⁴. Such visitors are more likely to be reliant on good public links between airports and city centres and Law (2002) observes that these are now common to most cities.

Ideally, movement around the tourist city can be achieved on foot as the main attractions and entertainments are located in a compact pedestrian zone at the centre of the city (Burtenshaw *et al.*, 1991; Law, 2002). However, the centres of some major cities are too large to be covered on foot. Moreover, Law (1992) points out that not all primary elements will be found in the city centre, providing a challenge to link the core to the periphery so that there can be easy movement for tourists. Many cities have important attractions located some distance from the city centre. These are often stately homes such as Schönbrunn Palace on the outskirts of Vienna or Versailles in the Parisian banlieu. An additional factor in the demand for local public transport is the number of hotels sited outside the city centre and the fact that many urban visitors are staying with friends and relatives. Easy public transport access to different areas of the city is therefore essential, particularly since it is the less expensive hotels which tend to be situated outside city centre and tourists with a smaller amount of disposable income who use these hotels may be more likely to be reliant on public transport for financial reasons. Thus, public transport is an important contributor to internal accessibility within urban tourism destinations.

³ 30% of respondents had used scheduled air travel and 6% charter.

⁴ In 1998, 68% of overseas visitors to the United Kingdom (UK) cited air transport as their means of arrival (BTA, 2000).

‘Context in historic cities is as important as the individual attractions themselves, and an important contributing factor will be the infrastructure, provision and network of transport. The *spaces in-between* and the *links* between key attractions or activity nodes are the unifying elements of urban tourism’ (Orbaşlı and Shaw, 2003:1).

Perhaps more importantly, it has been suggested by Ashworth and Tunbridge (1990) that the spatial behaviour of urban tourists is controlled in part by the availability and accessibility of various modes of transport. This opinion is shared by Jansen-Verbeke (1988).

‘The attraction of visitors to the inner city will always be conditioned by the constraints of accessibility. This includes not only the possibilities offered by public transport but also the parking facilities, their location and capacity, and routes for car traffic’ (Jansen-Verbeke, 1988:57).

Law (1993) also suggests that differences in the quality and cost of transport in various cities could influence tourist flows and Page (1995) cites the example of the London Docklands’ failure to fulfil the expectations of developers to create a new focus for tourism and leisure due to the inadequate infrastructure. Some evidence exists to support these claims. Timmermans and van der Heijden (1987) have shown that distance is the most frequently cited attribute affecting decision-making when choosing recreation objects (attractions). Transport availability at a destination may have an effect on perceived distance of recreation objects. Thus, available transport supply may influence visitor travel behaviour. Overseas visitors are most likely to be dependent on public transportation since a high percentage of international (particularly long haul) travel takes place by air. Where the public transport network does not adequately serve the web of attractions within a destination, some attractions may be inaccessible to visitors.

Whilst this thesis is primarily concerned with overseas visitors' interaction with urban public transport, the importance of access by private transport should not be overlooked. For those visitors who arrive by car, a good circulatory system, ample car parking and a general lack of congestion is important (Law, 1993). Good signposting within the city centre is also valuable for directing tourists who wish to walk to the attractions of the city centre, which need not only be primary elements but could also include such features as the restaurant quarter and street markets.

2.7 Transport, City Image and Destination Satisfaction

Page (1999:7) observes that, due to a lack of understanding, 'the relationship between tourism and transport is rarely discussed in the context of the tourist experience.' Whilst the contribution of transport to city image and destination satisfaction are areas which have been commented on, they have not been researched in any detail. Vetter (1985) lists ten aspects of cities which are extremely important to tourists, although he does not qualify in precisely what respect they are important. He claims that 'the attractiveness and the image of a city – including the adequacy of its transport system – become vital for the development of tourism' (Vetter, 1985:26)⁵. Law (2002), however, believes that access to the city is of greater importance in the decision to visit a city than internal access.

'Providing a visitor can get to a city satisfactorily and definitely wants to go to that city, they are unlikely to be put off by poor transport within the city' (Law, 2002:173).

However, there is no empirical evidence to support Law's (2002) view. Furthermore, a review of the literature on criteria for touristic attractiveness and city

⁵ Translated from the original French.

liveability measures by Haywood and Muller (1988) suggests, in contrast to Law's (2002) comments, that 'ease of finding and reaching places within the city' and 'pleasurability of walking or strolling about the city' (1988:456) are important variables in urban visitors' assessment of the quality of the urban tourism experience. Moreover, a study of the importance of attributes of tourism in influencing destination choice by Avgoustis and Achana (2002) found local transportation services to be rated fourth in importance for visitors to Indianapolis, out of fourteen attributes used to measure destination satisfaction (mean score of 2.7 on a 4 point Likert scale). Indeed local transportation services were identified as one of four attributes which were of 'above average in importance and in their ability to influence destination choice decision' (Avgoustis and Achana, 2002: 143). The performance of transport related attributes such as 'ease of getting around the city' and 'accessibility of the city' have also been measured in other studies of destination satisfaction, although their importance was not gauged (see Freytag, 2002; Bakucz, 2002).

It has also been suggested that tourist dedicated transport, as defined by Hall (1999) can add to the attraction and enjoyment of a destination (Law, 2002). Cooper *et al.*, (1993) draw our attention to ways in which transport can become an enjoyable feature of the tourist experience, citing such examples as explorer buses and water buses. Law (2002) cites the examples of water buses in Vienna and boat trips of the harbour in Sydney which are integral to the visitor experience whilst Pearce (2001b) highlights the case of a historic tram route in Christchurch, New Zealand designed 'to provide a tourism experience and a link between major tourist facilities/attractions within the central area' (CCC, 1991:1 cited in Pearce,

2001b:347). However, the contribution of non-dedicated tourist transport to the tourist experience has not been investigated in any detail. The presence or absence of a clean, efficient and value for money public transport system which serves the areas of the city the tourist wants to visit is likely to have some effect on both the tourist experience and the popularity of the city as a tourist destination. Furthermore, Page (1999:54) suggests that 'as the competitive market for tourist transport intensifies, the demand for service delivery systems which are customer centred is likely to be an important factor in affecting tourist use of transport services'. Consequently, there is a need for consideration of the quality of tourist transport in the management and planning of urban destinations.

2.8 Tourist Transport Quality in the Urban Tourism Planning Process

Despite attempts to break down the tourism product into elements of varying importance, it is rarely possible in the case of cities to isolate a single element which is the main facilitator of tourism.

'In reality the elements coexist and interact to produce an identifiable 'bundle' of services and facilities' (Page, 1995:110).

Lawton and Page (1997) note that the fact that tourists visit urban destinations because they are multifunctional is often misunderstood by tourism operators. At the same time, Page (1995) emphasises the importance of examining the whole range of elements associated with urban tourism during the planning process. Thus, there is a need to include transport in the urban tourism planning process. This requirement has been highlighted by Page (1995) and more recently by the English Tourism Council (ETC, 2001).

It has been noted above that urban visitors form an important market for urban public transport. Thus, a comprehensive destination management plan needs to consider the provision of transport links to all the areas of tourist activity within the city. Where the goal of urban tourism planning is to spread the benefits of tourism throughout the city, the role of the transport network becomes more significant (Evans and Shaw, 2002). However urban public transport systems are designed for local users and may not be ideal for visitor use in terms of their frequency and route coverage (Law, 2002).

Certainly, public transport planning is based on local population densities rather than visitor needs. Tourist activity is most likely to be considered in urban transport plans at destinations where a high ratio of visitors to residents is the norm. Whilst the process of transport demand management should not be over simplified, essentially transport supply caters for peak local demand rather than leisure use, although all cities have a leisure and tourism industry to some extent (Blank, 1994). Whilst Orbaşlı and Shaw (2003) stress that local transport needs should take precedence over tourist needs, consideration of the transportation requirements of visitors to the city nonetheless requires further attention. This requires, on the part of the transport planner, detailed knowledge not only of visitor numbers and seasonality, but ideally also of the spatial patterns of visitor travel behaviour with the destination. Failure to include visitors to the city in transport demand management may result in congestion, particularly at peak visitation periods, where incoming visitor numbers are not offset by vacationing residents.

Furthermore, the quality issues that are applied to other primary and secondary elements of urban tourism supply can be argued to be equally important in the provision of tourist transport at the destination. The urban tourism product is made up of a range of goods and services which together form the visitor experience. Page (1995) notes the need for the urban tourism industry to manage the gap between expected and perceived service with regard to the tourist experience. This requires a good knowledge of the relative importance of the variety of products and services which make up the urban tourism product of a destination in the behaviour and experience of the visitor at that destination (Postma and Jenkins, 1997). The need to explore the significance of urban public transport as an element of the urban tourism product is therefore confirmed. Such information can inform the provision of transport that is adequate for and suited to the tourist purpose.

Good organization of urban public transport in relation to visitors' needs may also play a role in visitor retention and encouraging repeat visits. Where a public transport system is not meeting quality standards expected by the passenger, modal switch is known to occur, most frequently to private or hire car⁶. Thus, where a public transport service does not meet the prior quality expectations of the tourist, his response may be to avoid future use of public transport at that destination. However, where local public transport is his only available means of conveyance, the tourist may respond with unwillingness to (re)visit the destination.

Orbaşlı and Shaw (2003) present the following guidelines for the planning and management of transport in historic cities:

⁶ A fuller discussion of transport modal choice can be found in Chapter 3.

-
- Make certain that transport strategies are integrated and the various transport systems are compatible and coordinated;
 - Ensure that information on transport is clearly relayed to visitors;
 - Promote alternative means of transport to reduce pressures and develop links between conventional and non conventional means of transport;
 - Recognise that open spaces, car parks, pedestrian zones, the areas 'in-between' are all part of the historic city and any intervention in the urban realm must enhance rather than detract from the character of the historic environment;
 - Address local needs first: transport solutions that serve local needs will provide an infrastructure from which successful tourist services can be developed.
- (Orbaşlı and Shaw, 2003:13-14)

Whilst the advice of Orbaşlı and Shaw (2003) is judicious and based on sound principles, further research is required to establish the best methods of achieving the measures that they recommend. For example, the relaying of public transport information to visitors requires preliminary analysis of the types of information that are most useful to the visitor and the preferred means of disseminating the information. In the case of overseas visitors, the information also needs to be in a format that can be understood by non-native speakers of the indigenous language(s).

2.8.1 Planning Tourist Transport for Competitive Advantage

The strength of urban tourism can generally be explained by the large variety of facilities available rather than by any specific feature of each city. It follows that the competition between cities to attract tourists will be significant. This is particularly true, since many inner city areas are facing the decline and relocation of other economic activities. As an important growth industry which brings considerable economic benefits, tourism is one of the activities which cities seek to attract (Law, 1993). Moreover, to a certain extent, many of the attractions and facilities offered by cities are homogenous. This applies, not only to secondary elements such as catering

and retail facilities, but also to the primary elements such as museums, waterfronts and events which play a prominent role in attracting visitors to cities.

Law (1993) draws attention to the danger of all cities becoming alike due to similar economic development programs and the tendency to replicate those projects that have been successful for other cities. Additionally, Ashworth (1995) has criticised the ubiquitous promotion of cultural heritage by cities in an effort to attract tourists.

‘A ubiquitous resource endows everywhere with the possibility of competing in the production of cultural products for a tourism market, and this very universal possibility intensifies the competition within that market.’
(Ashworth, 1995:271)

Boniface and Fowler (1993) also accuse cities of a lack of originality in their tourism policy, but suggest that it is the task of the tourist to seek out the unique cultural experience of a destination:

‘What a paradox if, all over the world, tourists are travelling to visit cities and towns that are different and yet, unless they make the effort to eschew the tourist tour and ‘do their own thing’, everywhere everyone is being fed the same soup - ‘heritage’ minestrone: the contents differ in details but the concoction is still minestrone’ (Boniface and Fowler, 1993:70).

The range of destinations accessible to the tourist is increasing as international travel becomes cheaper and easier and leisure time and disposable income increase (Law, 2002). In the face of this, competition between urban tourism destinations is increasing not just internationally, but also between rival cities in the same country. Day and Nedungake (1994) suggest that competition in urban tourism is likely to increase in the future as growth slows and the market matures. Furthermore, for industrial cities such as Manchester, which fall into the second category of Law’s (1996) typology of cities attracting tourists, competition is particularly great due to

the desire to increase their share of the leisure tourism market. In light of these considerations, it has been argued that competition between cities will be centred on providing a unique leisure experience which is not available elsewhere. According to Law (1992: 605), ‘tourists will not be willing to visit another clone city and will be looking for something distinctive’.

However, little attention has been given to the use of the secondary and conditional elements of urban tourism for creating competitive advantage. Where there is little to distinguish between the primary elements of tourist cities, secondary and conditional facilitators of urban tourism may take on a more important role in destination choice. Bramwell (1998) notes that, where visitors do not experience full satisfaction with the tourist product, they may be less loyal to the destination. Satisfaction with the tourist product incorporates the use of secondary and conditional elements on which the visitor makes the majority of his expenditure. There is therefore a requirement to investigate further the importance of internal accessibility to the visitor in terms of the overall visitor experience and the decision to revisit the destination. Such information can be vital as a means of informing an effective and systemic destination management strategy. Moreover, it is not only from a visitor perspective that effective planning of tourist transport is important. Orbaşlı and Shaw (2003) stress the significance of planning tourist transport in the creation of a sustainable urban tourism product:

‘The sustainable circulation of people and goods is a key factor in ... ensuring long-term success as an attractive place for the local population, as well as for visitors. Appropriate planning and management of transport – including walking – is required to ensure that a historic city continues to function and prosper as a living place’ (Orbaşlı and Shaw, 2003:1).

2.8.2 Planning Sustainable Tourist Travel in Cities

The need to reduce the amount of traffic in city centres is widely recognised and was a major objective of the UK Government's 1998 White Paper on the future of transport (DETR, 1998). The White Paper recognizes that travel to leisure facilities and visitor attractions is an important component of overall travel and places emphasis on reducing dependency on the private car and increasing the use of public transport for leisure purposes.

“... local authorities will have to work with retailers and operators of leisure facilities to identify appropriate measures funded by the private sector to reduce car dependency for access to these developments. Such measures should, in particular, help to ensure that people without a car have access to a wider range of goods and services than at present” (DETR, 1998:114).

Orbaşlı and Shaw (2003) observe that high traffic levels generated by tourism can create problems within the fragile environment of historic cities and, even within more robust city centres, can interfere with the daily activities and movement of residents, businesses and other users of the city centre. More specific to the Greater Manchester conurbation, Manchester Airport and GMPTE have formed a commitment to increase the percentage of public transport journeys to and from the Airport from the 1992 level of 10 percent to 25 percent by 2005. In light of the above policy directions and given that overseas visitors arriving by air are less likely to have a car at their disposal, the detection of any barriers to public transport use experienced by overseas visitors should be an important area of investigation for tourist cities.

So far within this chapter the multifunctional nature of urban tourism has been discussed and the range of primary, secondary and conditional elements identified

which operate together to create the urban tourism function. It has been argued that, whilst the primary elements of urban tourism have the most noteworthy role in attracting visitors to cities, secondary and conditional elements are increasing in importance, particularly in the case of cities which do not have a wealth of heritage resources on which to base their tourism product. The need for recognition of the potential role of transport in destination satisfaction has been discussed and a systemic quality management approach has been advocated for urban destinations. In order to inform this approach, further research is required into the attitudes of visitors with regard to the role of transport in destination satisfaction.

Since visitors are likely to be heavily reliant on public transport at urban destinations overseas, an analysis of the factors affecting their use of public transport is most useful not only from the perspective of increasing their use of public transport, but also as a means of establishing how public transport systems need to be modified and managed to enhance visitor satisfaction. It is also essential to identify the attributes which visitors use in measuring this satisfaction with public transport at overseas destinations. Chapter 3 will examine the literature that pertains to mode of transport choice and the role of attribute based satisfaction and quality in mode of transport choice. First, however, it is necessary to give a picture of the characteristics of the urban destination selected for the study since these will have a bearing on the collection of data and the findings of the research. The following section therefore portrays Manchester as an urban tourism destination with particular reference to the primary, secondary and conditional elements of its tourism product.

2.9 The Attraction of Greater Manchester

At the beginning of this chapter, the use of Manchester as an example in the urban tourism destination typologies of Law (1996) and Page (1995) was discussed. Page (1995) describes Manchester as an inner city urban tourism destination. However, the fact that the majority of Manchester's visitor attractions are in the centre of the city does not distinguish it adequately from any other tourist city. Law (1996) fittingly categorises Manchester along with other industrial cities whose industrial character is a barrier to tourism development. Whilst major areas of the city have been physically regenerated, often with the tourist in mind, Manchester's reputation as a grim, industrial, northern town with few vestiges of culture and even fewer attractions still appears to be widely credited. Numerous travel articles begin with an allusion to this clichéd image (e.g. Watson, 1998; Rigby, 2000; Cansino, 2002; Walker, 2002). All, however, continue with surprise at Manchester's appeal as a visitor destination and praise for the regeneration effort that the city has undergone. There is a marked contrast between Buckley and Witt's (1989:138) description of Manchester as a 'difficult area' in terms of tourism development and that of Braham (1999:39) a decade later, who depicts Manchester as 'the vibrant and exciting capital of the north of England'.

The large scale regeneration of Manchester city centre and its subsequent emergence as a popular leisure and tourism destination is largely the result of the widespread destruction of the epicentre of the city's shopping district by an IRA bomb in 1996. However, the urban facelift also owes much to the 2002 Commonwealth Games, preparations for which are responsible for many of the ambitious architectural

redevelopments in the city centre. The central shopping area of Manchester city centre, in particular the Corn Exchange and the new Millennium quarter, has changed not only in terms of its physical appearance, but also with respect to the type of shopping on offer. Schofield (2002) observes that Manchester is now a major European retail centre. In addition the number of accommodation providers and catering establishments increased exponentially in the run up to the Commonwealth Games. New attractions such as Urbis have been added to the city centre's tourism product and old sites, such as the City Art Galleries, have been redeveloped. However, Fainstein's (1999) portrayal of the tourist bubble is not a description which can be readily applied to Manchester, since gentrified retail, leisure and catering facilities are not noticeably separated from the rest of the city centre which is used by residents.

Nonetheless, there are certain areas of the city which may be regarded as 'pure tourist space' (Fainstein, 1999:36). However, these are largely located outside of the city centre and are products of the regeneration of former industrial areas. Castlefield Urban Heritage Park, for example, on the eastern edge of the city centre was created in the early 1980s, before Manchester's most recent wave of regeneration, and contains a series of attractions connected to Manchester's industrial heritage, as well as a reconstructed Roman fort and the world class Museum of Science and Industry. The area also comprises hotels, a youth hostel and some upmarket housing. Warehouse conversions to housing and bars have created Manchester's thriving Gay Village, situated at the southern edge of the city centre, which has led to Manchester being marketed as the gay capital of the North of England (Braham, 1999). The Quays area of Greater Manchester, located

approximately three miles from the city centre, represents the use of a once derelict docks area for leisure and tourism purposes. In parallel with Castlefield, the area is comprised exclusively of upmarket housing and retail and houses two of Greater Manchester's newest attractions, the Lowry Art Gallery and the Imperial War Museum of the North, both of which are major architectural and cultural landmarks for the city.⁷ However, the Quays development borders on some of the most deprived areas in the North of England. Manchester's touristic appeal therefore lies not only in the vibrancy of its city centre, but also in some of the key developments in other areas of the conurbation.

Besides developments within the primary and secondary sectors of the urban tourism industry, considerable improvements to the transport infrastructure have also taken place, particularly within the city centre. In 1992 the first phase of Manchester's Metrolink light rail system was opened, followed by the opening of the second phase, serving the Quays area, in 2000. The Metrolink is regarded as 'one of the images of modern Manchester' (Dawe, 2002:10) and is a popular means of travel with local users.⁸ Whilst anecdotal evidence exists that the Metrolink may be more popular with visitors than other modes of transport due to the simplicity of its route coverage, there is no clear evidence to support this. Moreover, Simpson (1988) observes, with reference to local use of public transport, that the provision of light rail services is at variance with market evidence since adequate car parking is a much greater attraction for city users.

⁷ Whilst the Quays is located mainly in the City of Salford, it belongs within the Greater Manchester region.

⁸ It is estimated that 3.5 of the 14 million journeys made annually by Metrolink used to be road journeys (Dawe, 2002).

In addition to the light rail development, Manchester's main bus and rail termini received facelifts in preparation for receiving visitors to the Commonwealth Games. Piccadilly rail and bus stations both underwent major refurbishments which were completed just in time for the Games in early 2003.⁹ Additionally, Manchester's long distance coach terminus, Chorlton Street coach station, has been redeveloped to create a more pleasant environment for visitors entering and leaving the city.

On a general level, the regeneration of Manchester city centre and its outlying areas has encouraged an economic and cultural boom, fuelled by Manchester's link with popular youth culture, which have allowed the city to shed its former industrial image, reposition itself as a vibrant 24-hour city and establish itself as England's second city (Braham, 1999). As a result, visitor numbers appear to have doubled in the space of a decade, from 2.6 million visits in 1991 (Braham, 1999) to 5 million in 2001 (NWTB, 2003)¹⁰. Overseas visitor figures have also shown an upward trend, increasing from circa 0.4 million in 1991 (Braham, 1999) to 0.67 million in 2001. (NWTB, 2003).

2.10 Manchester's Visitor Market

The City of Manchester was the UK's third most popular city with overseas visitors in 2000, after London and Edinburgh (BTA, 2002). In 2001 Greater Manchester is estimated to have attracted 0.67 million overseas visitors (NWTB, 2003). Whilst no figures are available which illustrate overseas visitors' purpose of visit to Greater

⁹ Manchester's other major rail terminus, Victoria Station, was redeveloped in 1992 in conjunction with the construction of the Metrolink.

¹⁰ A higher estimate of 6.6 million visitors to Manchester in 1999 is claimed by a recent STEAM report commissioned by Marketing Manchester (Global Tourism Solutions, 2001).

Manchester, it is possible to make inferences about the main attractions of Manchester for overseas visitors.

2.10.1 Business and Conference

Manchester's strength, according to Law (1996), lies in the important economic role it plays in the North of England and the fact that many businesses have their regional office located in the city. Braham echoes this sentiment, referring to Manchester's central business district as the 'economic heart of the north' (1999:40). Law (1996) also comments on Manchester's longstanding importance as a venue for conferences and exhibitions. Figures for the North West region indicate that business is the most common purpose of trip for overseas visitors, with 33% of respondents specifying this as their main motivation for visiting the region. Braham (1999) attributes the high percentage of international business travellers to the attraction of the region's conference and meetings market. Given the fact that the North West region's major facilities, such as the G-MEX exhibition centre and the recently opened £25m International Convention Centre are located in central Manchester, it is reasonable to expect that the percentage of overseas visitors in Manchester on business trips is at least as high as the figure for the region as a whole.

2.10.2 Sport

Braham (1999) regards the success of Manchester United football club and the regular hosting of international sports events as major factors in the enhancement of Manchester's image as a visitor destination. Whilst recent visitor figures were not available for the Manchester United Museum, discussions with tourist board staff

and accommodation providers in Manchester indicate that information on this attraction is requested more than any other in the city¹¹. Furthermore, the global appeal of Manchester United football club leads to an influx of international spectators, particularly from the Republic of Ireland, for home games at the Old Trafford stadium. International sports events held in Manchester, such as the Euro '96 football championship and the Commonwealth Games 2002, have also played a vital role in attracting international visitors to the city and enhancing its image.

2.10.3 Gay and Lesbian

Manchester's status as the most important gay centre in the UK outside of London is a stimulus for gay tourism to the city. The fact that there is a clearly defined gay space within the city and that Manchester has the highest concentration of gay businesses and interests in the UK enhances the appeal of the city for this particular market (Schofield, 2002). Furthermore, events such as the Mardi Gras parade and the fact that the popular gay television series 'Queer as Folk' was filmed in the Gay Village also act as catalysts for gay tourism to the city. Whilst the appeal of Manchester as a gay destination is likely to be largely domestic, important events such as the Mardi Gras may attract an international audience. Furthermore, the Gay Village has played a large role in establishing Manchester's image as a 24-hour city since its bars have the longest and latest opening hours in Britain (Schofield, 2002).

¹¹ In 1997 Manchester United Museum was the tenth most popular attraction in the North West of England, attracting 192,095 visitors (NWTB, 1999). In 2001, the museum did not appear on the top ten list, however two attractions are missing from the list, as figures were not authorised for publication (see NWTB, 2003). It is possible that one of these two is the Manchester United Museum.

2.10.4 Popular Culture and the Youth Market

Whilst Braham (1999) notes that Manchester has the highest number of theatres per head of population in the UK, and international tours of musicals, opera and ballet all visit Manchester, it is for its popular culture that Manchester is perhaps best known. Indeed Braham (1999:40) confirms that ‘the dynamism of the city is fuelled by its youth culture’. In particular, the music scene has played an important role in establishing an image for Manchester. Tours of sites associated with famous musicians and bands from the Manchester area are a popular attraction of the city (see Schofield and Thompson, 2001).

Moreover, Manchester’s clubland is an important attraction for visitors to the city. Schofield (2002) observes that there are more than 160 clubs in the Manchester area catering for every type of music. Whilst the domestic market is the primary one in terms of demand for the music and nightclub scene, international visitors are also attracted by Manchester’s reputation as the ‘rock’n’roll capital of the world’ and the ‘engine-room of British pop’ (Schofield, 2002: 8; 108).

2.10.5 Education

Greater Manchester’s four universities are a significant factor in the number of overseas visitors to the city. Principal international student markets include China and Hong Kong, Malaysia, Greece and Scandinavia. The international student market is an important one from a tourism perspective and this has been recognised and is currently being investigated by the North West Development Agency. In addition to the large number of international students studying at Greater

Manchester's universities, the city's English language schools attract students, mainly from Europe, throughout the summer months.

2.10.6 VFR Tourists

It has been noted above that cities attract high numbers of VFR visitors due to the multi-ethnic composition of their populations. Manchester is no exception to this rule, indeed the high number of international students studying in the city intensifies the phenomenon. Hide (2002:1) comments on Manchester's 'rich multicultural mix representing everyone from Poland to Pakistan'. There is little doubt that this is an important motivation for many of the international visitors from a wide range of destinations staying within the city. However, the accessibility of Manchester, particularly from long haul destinations, must also be acknowledged as a contributing factor.

2.10.7 Manchester as a Gateway to the Northwest Region

Manchester Airport is the UK's third largest airport in terms of passenger numbers. The airport serviced 19 million passengers in 2001 (Dawe, 2002) and passenger throughput has grown at an average annual rate of 6.9% since 1991 (DFT, 2002a). Thus, the airport has developed into a leading European hub and in 1998 was voted top UK airport by the International Air Transport Association (Braham, 1999). The success of Manchester's international airport, which was expanded to incorporate a second runway in 2000, is a major factor in the number of overseas visitors arriving in the city. The airport is an important UK hub, but also operates more than 175 routes to Europe, the USA and the Far East. Moreover, Manchester Airport's

inbound tourism strategy is heavily focussed on its role as a gateway to the North of England. In addition to serving the city of Manchester, the airport provides access to Cumbria and the Lake District and Derbyshire Peak District. Thus, it is likely that Manchester benefits from international visitors stopping over in the city on their way to other areas of northern England. Manchester's external accessibility as an urban tourism destination is unequivocally enhanced through the city's proximity to one of the UK's major air traffic hubs.

2.11 Conclusion

This chapter has analysed the nature of urban tourism supply and demand and has illustrated Manchester's visitor appeal and its main visitor markets within the framework of the urban tourism product. Moreover, the significant role of transport in the urban tourism system has been clearly identified. Overseas visitors have been recognised as important potential users of urban public transport and the requirement for a visitor friendly public transport system has been stressed with regard to improving the internal accessibility of the urban tourism product. From a sustainability perspective, the desirability of increasing tourists' use of urban public transport has been noted. Moreover, the need for quality management at destination level has been stressed and the potential effect of satisfaction/dissatisfaction with urban public transport on the visitor experience and overall destination satisfaction has been documented.

It has been argued strongly that it is desirable to increase visitor access to urban public transport in tourist cities. As a move towards this, the following chapter undertakes to explore the factors affecting the use of public transport by urban

visitors at overseas destinations with particular reference to the issues of CS and SQ in the use of urban public transport.

CHAPTER 3

FACTORS AFFECTING PUBLIC TRANSPORT DECISION MAKING

3.1 Introduction

It is recognised in studies and discussions of transport modal choice that a variety of factors affect the consumer's decision to use public transport (e.g. Hovell *et al.*, 1975; Mackett and Robertson, 2000). However, there appears to be no standard classification of these factors in the transport literature. Moreover, whilst there is general recognition within the public transport literature that the quality of a public transport service is an influencing factor in future travel behaviour, (i.e. modal choice) the precise nature of the relationship between SQ, CS and modal choice remains unclear. For example, Mackett and Robertson (2000:vi) state that factors which affect peoples' decision to travel by bus include 'quality of the service, speed, fares, route coverage and security'. At the same time, however, some of these attributes are used to measure bus SQ in studies of bus passenger satisfaction (DFT, 2002b). Moreover, Kittelson and Associates *et al.* (1999) note that, in the United States, many of the terms used are not standardised so that definitions vary between public transport operators and systems. The same appears to be true in Europe with the terms *Service Quality* and *Customer Satisfaction* being used interchangeably by academia and industry alike.

Whilst SQ, CS and modal choice are clearly related, they have tended to be addressed separately with the field of public transport research. In practice, SQ and CS are the focus of passenger satisfaction surveys and are mainly measured (often by

public transport operators or public transport authorities) as part of the quality management process (e.g. DFT, 2002b). Meanwhile, investigations into modal choice have customarily been undertaken as a component of initiatives to increase public transport use (e.g. Mackett and Robertson, 2000; URS Thorburn Colquhoun *et al.*, 2000). At the same time, academic research in the field of public transport has largely failed to consider the link between SQ, CS and modal choice. The following chapter will consider the factors which are deemed to affect the decision to use public transport. In particular, the chapter will assess the role of SQ and CS in modal choice and will appraise the performance attributes which are used to measure SQ and/or have been shown to affect CS with public transport. The chapter will ultimately consider the relevance and comprehensiveness of these attributes within the context of the use of urban public transport by overseas visitors.

3.2 Modal Choice: The Decision to Use Public Transport

Interest in the way in which travellers choose their means of transport for specific journeys has been fuelled by government policies throughout the developed world, aimed at reducing the use of the private car. In the case of the UK, the Government White Paper on the Future of Transport (DETR, 1998) clearly promoted the reduction of car journeys in both urban and rural areas and an increase in the use of less environmentally damaging modes of transport such as, not only public transport, but also walking and cycling. Several studies have attempted to uncover the range of factors which would give rise to modal switch away from the private car (e.g. Mackett and Ahern, 2000, URS Thorburn Colquhoun *et al.*, 2000), few, however, have distinguished between work based and leisure based journeys or between local users and visitors to an area. The following section, in reviewing the relevant

literature on modal choice, attempts to produce a constructive classification of the factors which are considered to affect modal choice and in particular seeks to isolate the roles of CS and SQ in modal choice.

Hovell *et al.* (1975) contend that the market for urban public transport falls along the continuum illustrated in Figure 3.1. At one end of the continuum, *captive car users* require a car (e.g. for work purposes) and are not considered to be potential public transport users. At the other end, *captive public transport users* do not have access to a car and are therefore reliant on public transport, where there is a need or desire to make a journey. In between the two poles, travellers have degrees of choice over the transport mode used. In the case of overseas visitors to the UK, the fact that the majority arrive by air will place them towards the pole of the captive public transport user. Nonetheless, visitors may still chose to hire a car at the destination. The decision to use a car or the existing public transport infrastructure is likely to be based on many of the same factors that influence modal choice for local users; however other factors specific to overseas visitors may be of equal relevance.

Figure 3.1 – Spectrum of Urban Public Transport Users



Source: Hovell *et al.* (1975)

Hovell *et al.* (1975) remark that whilst time and money costs are often cited as determining modal choice, ‘the nature of the factors comprising these costs, their relative importance and interrelationship, is only imperfectly understood’ (1975:42).

They contend that analyses of factors affecting modal choice must extend beyond time and money costs, suggesting that the following service attributes are additionally evaluated by consumers in the decision to use public transport (Hovell *et al.*, 1975):¹

- Price;
- In-vehicle time (duration of trip, speed);
- Mesh density (route coverage and access to stops);
- Frequency;
- Reliability ;
- Comfort.

The decision to use public transport is considered to be based on subjective perceptions of these six service attributes influenced by available information and promotional tactics particularly in the case of non-local and first time users (*ibid*).

Kittleson and Associates *et al.*, (1999:38) affirm a very strong relationship between public transport SQ and modal choice.

“Quality of service reflects the kinds of decisions a potential passenger makes, consciously or not, when deciding whether to use transit or another mode, usually the private automobile.”

They distinguish between two parts of the decision making process, arguing that service attributes are only taken into account once travellers have established that public transport is an option for the journey (*ibid*). The usability of public transport is assessed on the basis of four types of availability. *Spatial availability origin* and *spatial availability destination* are gauged on the basis of whether there is a demand responsive public transport service available within walking distance of the origin and destination of the trip. In addition, *information availability* (the availability of adequate and accurate information) and *temporal availability* (whether a public

¹ Hovell *et al.* (1975:42) refer to these elements as ‘the marketing-mix for public transport’.

transport service is available at the required time) affect the determination of whether public transport is an option for a particular journey or indeed whether the trip can be made (Kittleson and Associates et al., 1999). Where public transport is considered to be an option for a trip, the decision process moves to stage two, which is an assessment of the *comfort and convenience* of public transport compared with other possible modes, the following factors being paramount in weighing *comfort and convenience* of public transport modes (Kittleson and Associates et al., 1999):

- Potential for making journey on foot;
- Reliability of public transport service;
- Length of wait for service and availability of shelter at public transport stop;
- Security concerns;
- Crowdedness of public transport vehicle;
- Cleanliness of vehicles and shelters;
- Cost of trip;
- Number of transfers required;
- Duration of trip relative to other modes.

Like Hovell *et al.* (1975), Kittleson and Associates *et al.* (1999) highlight the subjectivity of modal choice, stressing that individuals will weigh the above factors according to their own personal values.

Whilst the observations of Hovell *et al.* (1975) and Kittleson and Associates *et al.* (1999) provide a useful overview of transport modal choice, there is no evidence that the factors which are claimed by these two studies to affect modal choice have been derived from any empirical basis. However, two UK studies, conducted on a consultancy basis, have uncovered, by means of social survey techniques, a range of factors affecting the decision to use public transport.

A study of 1287 car users, investigating reasons why motorists use their car rather than public transport, established that the factors exhibited in Table 3.1 were of greatest importance in modal choice (Lex Service PLC, 1998).

Table 3.1 – Top Ten Factors Affecting Motorists’ Decision to Use Public Transport

Factors affecting motorists’ decision to use public transport	Percentage of Respondents Mentioning Factor
Route coverage	38
Journey time	31
Carrying heavy load	31
Waiting time	27
Frequency	26
Reliability	23
Cost	23
Convenient timetabling	17
Convenient access to bus stop/station	15
Personal safety on board	9

Source: Lex Service PLC (1998)

Mackett and Robertson (2000) note that the factors established by Lex Service PLC (1998) are confirmed by the results of a UK household study of 1405 adults (Railtrack, 1998) which elicited the most significant factors that would have to improve for travellers to choose to travel by bus. The top ten factors are shown in Table 3.2.

Table 3.2 –Top Ten Factors Which Would Need to Improve to Increase Bus Usage

Factors Which Would Need to Improve for Travellers to Consider Using the Bus More	Percentage of Respondent Mentioning Factor
Frequency of services	55
Reliability of services	54
Cost of tickets	46
Overall speed of journey	31
Personal security at bus stops	30
Access to information about routes	29
Waiting facilities at bus stops	29
Convenience of timetables	28
Cleanliness of Vehicle	27
Lighting around bus stops	27

Source: Railtrack (1998)

Whilst Table 3.2 focuses only on modal choice with regard to use of the bus as an alternative to the car, there is a clear overlap with other studies discussed above which examine factors affecting the decision to use public transport in general. Furthermore, the studies by Lex Service PLC (1998) and Railtrack (1998) provide an indication of the importance of the various factors in determining modal choice.

A study of factors affecting modal choice with specific reference to rail travel (Hanna and Drea, 1998) established a more general series of attributes considered by consumers when choosing to use the train. These attributes, which were observed from a series of focus groups, show that modal choice is affected by a combination of factors relating to both the ‘in-transit experience’ and the ‘antecedents and consequences of ridership’ (Hanna and Drea, 1998: 40). This finding is consistent with those of Lex Service PLC (1998) and Railtrack (1998), both of which established that factors related to the pre- and post-journey stages (e.g. access to and lighting at bus stops) were important to modal choice.

An indication of the importance of the attributes affecting modal choice observed by Hanna and Drea (1998) is shown in Table 3.3. Whilst Hanna and Drea (1998) included both leisure and business travellers in their survey sample, the focus of the paper is on significant differences between train users and non-users, and the results are not disaggregated by journey purpose. Notably, Railtrack (1998) and Hanna and Drea (1998) both identify location/route coverage as the most important factor affecting the decision to use public transport. The fact that route is not identified in the study of factors needing to improve for travellers to use the bus (Lex Service

PLC, 1998) may well be due to the generally much higher density of bus route coverage.

Table 3.3 – Importance² of Attributes Influencing Modal Choice

Attribute	N	Mean	Standard Deviation
Can travel where I want (location)	1654	4.60	0.71
Can travel when I want (timing)	1656	4.49	0.80
Comfort	1661	4.46	0.76
Cost	1658	4.33	0.94
Ability to be productive in transit	1641	2.72	1.44

Source: Hanna and Drea (1998)

It is useful, at this point, to examine collectively the factors which have been suggested in the transport literature discussed above to play a role in modal choice.

Table 3.4 shows the factors which are mentioned in more than one of the above studies.

Table 3.4 – Factors Mentioned in More Than One Study of Public Transport Modal Choice

Factors affecting modal choice	Number of Studies Mentioned in (maximum 5)
Cost of journey	5
Duration of journey	4
Reliability of services	4
Frequency of services	3
Personal safety	3
Waiting time	3
Comfort on board	3
Route coverage ³	3
Cleanliness of vehicles	2
Convenient timetabling	3

It is significant that all of the factors affecting modal choice listed in Table 3.4 refer to aspects of the public transport system over which the operator exercises direct control. Greater emphasis is likely to be placed on these factors since most of the literature on the subject is concerned with identifying potential areas where changes

² Importance is measured on a five point Likert scale where 1= unimportant and 5=important.

or amendments can be made by the public transport operator or authority in order to increase public transport use. However, Hanna and Drea's (1998) study, in which the factors affecting modal choice were identified by transport consumers through focus groups, demonstrates that there are similarities between customer defined and operator defined attributes affecting modal choice suggesting that it is factors which are under the control of the public transport operator (henceforth call *system factors*) which are of overriding importance to customers as well as to the operators themselves.

In addition to the system factors discussed above, it is possible to isolate two other types of factor which have also been identified (albeit less frequently) as playing a role in transport modal choice (see Figure 3.2). *External factors* are referred to by Atkins (2001) as *background factors* affecting the performance of public transport and by Hanna and Drea (1998) as *external environmental variables*. Hanna and Drea (1998) note that these factors can be considered relevant to modal choice.

“From a theoretical standpoint, these variables combine with perceptions of the actual in-transit experience to create a total transportation experience, and it is the perception of this total transit experience which determines consumer choices at each level of the decision process.” (Hanna and Drea, 1998:38)

External factors are destination specific, including features such as the natural and built environment, climate and levels of crime. Atkins (2001) argues, for example, that the presence of attractive and architecturally significant buildings may lead to greater environmental awareness, higher tolerance of traffic controls and increased demand for public transport. Furthermore, factors such as a flat landscape and dry

³ Route coverage refers to both the adequacy of existing public transport routes in relation to the needs of the traveller and total coverage of an area by public transport, i.e. distance from origin and

climate may increase the propensity to cycle or walk (*ibid*)⁴. Additionally, Fleming and Hyde (1998) note that level of employment is the principal demand driver of public transport services in London, and that the spatial concentration of employment also plays a role in the degree to which public transport can compete with private transport modes.

In addition to external and system factors, *personal factors* play a role in determining mode of transport choice. This category includes factors which are specific to the individual customer, such as disability or illness, amount of disposable income, or even personality type. Indeed, one of the factors identified above in the survey by Lex Service PLC (1998) as affecting motorists' decision to use public transport, namely carrying a heavy load, can be considered to be a personal factor, rather than one which relates to the system, although the provision by public transport operators of on-board facilities for storing luggage may be a further determining (system) factor.

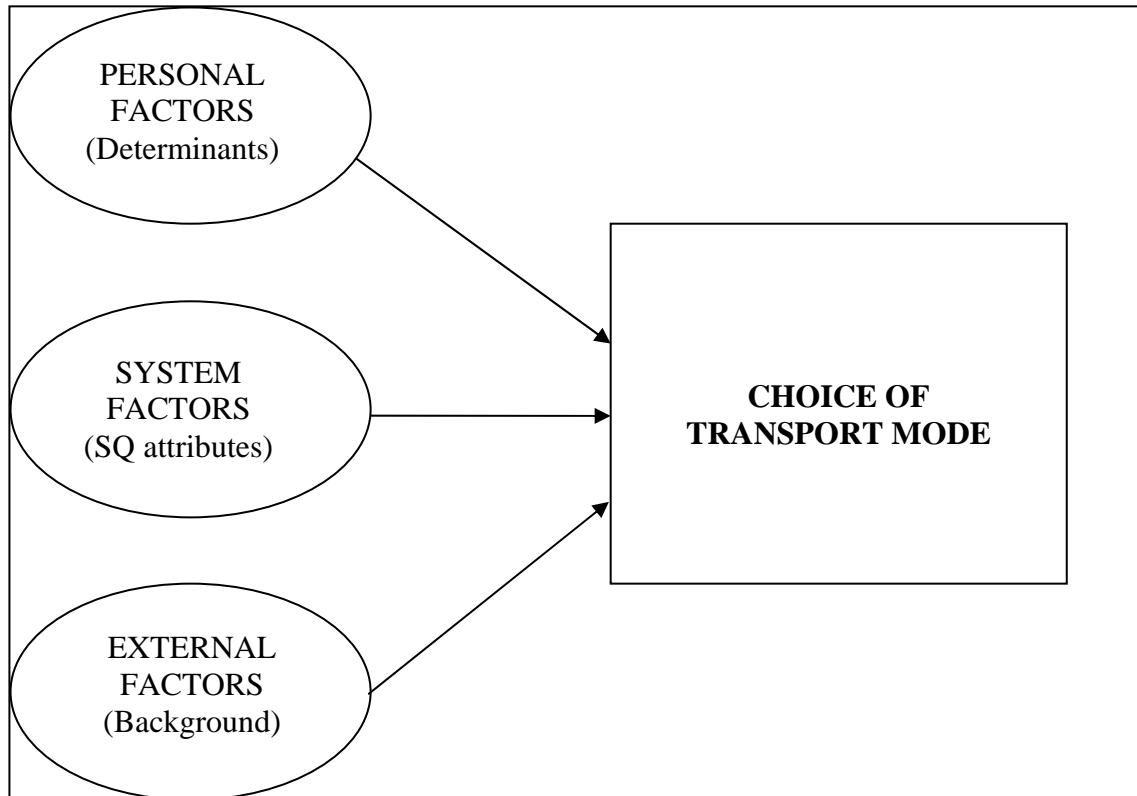
Significantly, a qualitative study of transport choice, carried out through a series of focus groups and interviews in various UK locations, identified a number of key customer needs including not only system factors, but also a wide range of personal and external factors. These needs (illustrated in Figure 3.3)⁴ were found to be critical factors in determining mode of transport choice (URS Thorburn Colquhoun *et al.*, 2000). The research also confirms the relationship with CS since the fulfilment of

destination of trip to public transport node.

⁴ However, Atkins (2001) found that rainfall alone did not account for a difference in the number of journeys made by bicycle.

these transport needs was found to lead to high levels of CS, thus establishing a clear link between CS and modal choice.

Figure 3.2 – Classification of Factors Influencing Transport Modal Choice



Convenience was found to be by far the most important reason for choosing to travel by car in both rural and urban areas, followed by immediacy, flexibility, reassurance and individualism in that order (URS Thorburn Colquhoun *et al.*, 2000). However, these needs were ranked differently according to settlement type (urban or rural) and life stage, thus confirming the influence of external and personal factors. It was also found that the private car performed best in meeting the above transport needs, but that different modes of public transport fulfilled transport needs to different extents (*ibid*).

Figure 3.3 – Customer Defined Transport Needs

Transport Needs	Examples Cited in Focus Groups
Individualism	<ul style="list-style-type: none"> • Travel alone or with selected companions • Ability to control temperature • Freedom to escape
Reassurance	<ul style="list-style-type: none"> • Control of journey • Reliability • Personal safety and that of family
Flexibility	<ul style="list-style-type: none"> • Ability to change plans • Full utilisation of time
Convenience	<ul style="list-style-type: none"> • Ability to set off immediately • More efficient use of time • Ability to carry loads • Staying warm and dry
Immediacy	<ul style="list-style-type: none"> • Ability to go anywhere at any time

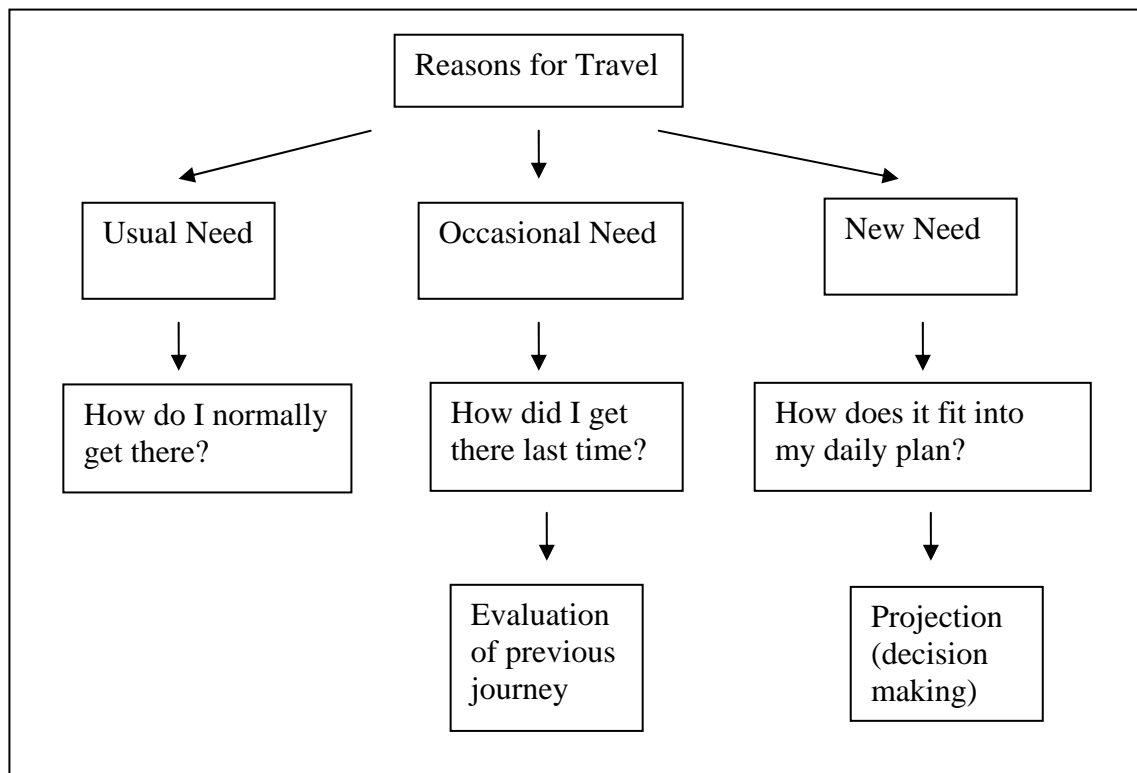
Source: Adapted from URS Thorburn Colquhoun *et al.* (2000)

A model of travel logic created from the focus group findings of URS Thorburn and Colquhoun *et al.* (2000) addresses the role that experience plays, in addition to the meeting of transport needs, on travel decision making (see Figure 3.4). Where travel is fulfilling a usual need, habit was shown to be the major influence on travel choice. In such cases, there is little evaluation of the ability of the various transport modes to fulfil transport needs. However, in the case of a journey which is fulfilling a new need, the decision making process is more complex and additional transport needs play a greater role (URS Thorburn and Colquhoun *et al.*, 2000).

Whilst the classification of transport needs employed by URS Thorburn Colquhoun *et al.* (2000) is much broader than others discussed here and is useful as a means of comparing travel behaviour and attitudes, the abstract nature of the classification and the fact that there is a potential overlap between categories (for example the ability to travel anywhere at any time fulfils needs of both convenience and immediacy) limits its usefulness as a tool for quantitative analysis of factors affecting modal choice. It

should also be noted that URS Thorburn Colquhoun *et al.* (2000) interviewed only subjects who had access to both public transport and the private car, thus there is a potential gap in the findings with regard to the needs of the captive public transport user as defined by Hovell *et al.* (1975).

Figure 3.4 – Model of Travel Logic



Source: URS Thorburn Colquhoun *et al.* (2000)

In summary, modal choice has been shown to be affected by three types of factor, only one of which the transport operator has the ability to control. It is therefore these system factors on which studies of satisfaction with public transport and SQ must be focused. Whilst the captive public transport user (Hovell *et al.*, 1975) may have no option but to travel by public transport, the indication is that potential customers further along the continuum use perceptions of the performance of these system factors in deciding not only *for* public transport as a mode of travel, but also

between public transport modes. A discussion of SQ and CS in public transport is therefore appropriate.

3.3 The Role of Service Quality in Modal Choice

Several factors account for the growing focus on public transport SQ in the UK with regard to its role in modal choice. Firstly, there has been mounting pressure from users who appear unwilling to use public transport regularly unless their quality expectations are met. This pressure is added to by national and local government initiatives to increase public transport use generally. Secondly, the privatisation of urban public transport services can be argued to have led to the introduction of more dynamic quality management processes within the industry. Whilst the measurement of quality in public transport has its roots in the era of state intervention and control (Pullen, 1991), performance standards are arguably of greater importance in the deregulated, free market economy where maximisation of profit and optimisation of demand are the principal objectives. Additionally, the introduction of quality benchmarks by transport authorities has compelled urban public transport operators to monitor and manage the quality of their services in order to compete for franchises.

Moreover, studies of perceptions of quality are considered to provide valuable information for management decision making (Phillips *et al.*, 2001).

“A critical step in any service improvement consists in gaining a realistic view on the level of quality delivered in the first place together with a sound understanding of the public's satisfaction and expectations with respect to these services.” (Quattro, 1998:18).

Whilst regarded as supply-side assessments of public transport, studies of SQ may be used in tandem with demand side methods, where demand is associated with the quality of existing services (*ibid*).

Whilst studies of modal choice are mainly concerned with determining the importance of public transport attributes in travel decision making, studies of CS and SQ additionally concentrate on measuring the performance of attributes. This section firstly discusses the nature of public transport as a service and distinguishes between the measurement of true quality and internal quality. It subsequently investigates some of the different research methods which have been used to elicit the attributes customers use to evaluate the true quality of public transport and the dimensions of public transport SQ. Finally it reviews operator defined SQ attributes which have been used in the measurement of CS and compares these with dimensions of public transport SQ identified from the customers' perspective.

An assessment of the attributes of CS in public transport should take into consideration the nature of the service. Public transport is arguably more complex than many other services. Moreover, it has been noted that public transport consumers expect a 'zero default' service; the service must perform exactly to specifications or negative disconfirmation is likely to occur (Quattro, 1998). Silvestro *et al.* (1992) summarise six features of services, used in the service management literature for classification purposes. These are outlined in Table 3.5 and the nature of public transport as a service is considered within each classification.

Pullen (1991) notes that different interest groups have different perspectives on the quality of public transport performance⁵ (see Figure 3.5).

Figure 3.5 - Stakeholders in the Public Transport Service

Stakeholder	Vested Interest in Public Transport Service Quality
Public transport operator	Responsible for planning and operating services. Success is determined by profits or losses.
Central Government	Responsible for enacting legislation which determines the administrative framework within which public transport operates
Local authorities	Responsible for planning and procuring socially necessary services.
Users	Decide whether and in what way they will use services
Operator personnel	Working conditions are directly affected by management methods and level of service
Trade unions	Represent the personnel
Operators of services other than public transport	Costs are affected by the public transport services provided

Source: Pullen (1991)

Pullen (1991) further observes that conflicts may arise due to the differing objectives of the stakeholders listed in Figure 3.5. Donald (1990) provides a series of examples (listed in Figure 3.6) of conflicts which may arise between operators and customers with regard to bus performance. Ultimately, though, passengers' perceptions of quality are of greatest importance in determining use of public transport (Pullen, 1991).

⁵ Pullen's (1991) remarks particularly refer to areas where deregulation has taken place, such as Greater Manchester.

Table 3.5 - Features of Services Identified in the Service Management Literature Applied to Public Transport

Service Feature	Identified By	Application to Public Transport
Equipment versus people focus	Thomas (1978), Kotler (1980)	Under this classification public transport can be said to have more of an equipment focus as the equipment provides the essential service. It follows that quality of equipment (e.g. safety features, comfort, ability to run to schedule without breaking down) may have the greatest impact on overall CS. Nonetheless, the importance of human aspects of the public transport service (e.g. customer service) should not be overlooked.
Customer contact time	Chase (1978, 1981)	This classification refers to the length of time for which the customer interacts with the service. Given that the majority of urban public transport trips are short in distance and duration, customer contact time is likely to be low in comparison with other, longer distance public transport services.
Extent of customisation	Maister and Lovelock (1982), Maister (1983), Johnston and Morris (1985)	A fully customised service provides a separate package for each consumer. In the case of urban public transport, whilst a wide range of routes are available, these are predetermined and there is little opportunity for customisation to the individual passenger (Silvestro <i>et al.</i> , 1992). Unlike longer distance services, urban public transport modes do not normally offer different standards of travel (e.g. business or first class). Indeed, the only form of customisation may be different price structures for regular or off-peak users, or special arrangements for disabled travellers. This lack of customisation has implications for SQ as customers with different needs will evaluate public transport SQ using different criteria but on the same outcome.
Degree of discretion	Lovelock (1983)	Degree of discretion refers to the personalisation of (human) customer services to individual needs. There is a low degree of discretion in the provision of public transport services.
Source of value added	Maister (1983)	Maister (1983) differentiates between value added by the front or back office. Sliwa and Stewart-David (2002) argue that, in the case of public transport, there is little potential for value added in the front office so that the back office (the management and planning departments of the public transport service) is the main source of any added value. On the other hand, it has been shown that the functional qualities of staff in response to service delivery failure can add value to a service, resulting in increased CS (see Etzel and Silverman, 1981; Bejou <i>et al.</i> , 1996). Given the potential for negative critical incidents in public transport services, there is arguably considerable potential for value added by front office staff. However, this is likely to mainly take the form of damage control.
Product versus process focus	Johnston and Morris (1985)	Sliwa and Stewart-David (2002) argue that the transport product consists of safe arrival at the desired destination, which is likely to have a similar degree of importance to all passengers. However, different types of passenger will use different criteria in measuring the service delivery process. Since safe arrival at the destination is taken for granted by most travellers, it is the process (how the customer is transported) which may have the greatest impact in evaluating SQ.

Figure 3.6 - Conflicting Objectives of Bus Passengers and Operators with Regard to Aspects of the Service

Aspect of service	Passenger objectives	Operator objectives
Service changes	Stable network, readily understood services	Continuous changes to services as required
Service timing	Regularly spaced services to minimise wait times	Service times to run just in front of competition
Fare levels	As low as possible to maximise travel	As high as practicable to maximise income
Multi-operator tickets	Tickets cover all operators for convenience	Reluctant to participate due to desire to control fares and income and promote use of own services
Co-ordination	Services designed to facilitate interchange between different public transport services	Services designed to keep passengers on own service
Timetables and publicity	Comprehensive information on all services	Information on own services only
Bus station	Good facilities enabling interchange between services	Realise development potential of asset

Source: Donald (1990)

In establishing attributes for the measurement of public transport satisfaction, the distinction has been made between customer perceived quality (true quality) and business process quality (internal quality) into which system factors can be split (see Kordupleski *et al.*, 1993). Internal quality is considered to be easier to measure and manage, as it is normally assessed on the basis of whether hard performance targets have been met and the quality objectives are often set by the service provider themselves (Sliwa and Stewart-David, 2002). However, in practice Quattro (1998) found that the presence of a good monitoring system for internal quality was rare among transport providers across Western and Eastern Europe. In the Greater Manchester metropolitan region, for example, the monitoring of performance of

public transport operators by GMPTE is largely confined to subsidised services⁶. Furthermore, Pullen (1991) observes that it is more important to collect data on perceived importance (true quality) than actual performance (internal quality) since passengers are disinclined to use a service which they perceive as poor even though performance measures (as evaluated by the operator) may show that the service is good.

The approach of Sliwa and Stewart-David (2002) to measuring train SQ focuses on internal quality measures. Sliwa and Stewart-David (2002) argue that, due to the number of customer specific factors affecting SQ which are beyond the control of the service provider, SQ is not an objective concept which can be researched and managed. They therefore contend that the task of the service provider should be to supply services that will be regarded as high quality by the highest possible proportion of customers, whilst recognising that individual customers evaluate SQ subjectively (*ibid*). Sliwa and Stewart-David's (2002) analysis of train SQ focuses on the attainment of aspects of internal quality, as measured by the rail companies (e.g. percentage of trains running to time). Sliwa and Stewart-David's (2002) concept of 'true quality' is measured, not from a consumer perspective, but on the basis of how train companies attempt to provide for the needs of different market segments, in particular leisure and business travellers. The inference is that catering for a passenger's specific needs (within a market segment) will increase satisfaction with the transport mode. Sliwa and Stewart-David's study of train SQ leads them to conclude that '...it is easier to understand and cater for those passengers' needs

⁶ Non-subsidised services are monitored to a lesser degree; minimum standards are set out in the contracts awarded to transport operators and the PTE operates random monitoring procedures on subsidised services.

which differ across the market segments than to provide consistent levels of so-called ‘hard’ [internal] quality...whose aspects are likely to be of similar importance for all passenger groups’ (2002:19). However this methodology appears to contradict the previously affirmed subjectivity of perceptions of true quality across the range of attributes of SQ in public transport.

True quality by definition requires the measurement of service performance from the customer perspective and Kordupleski *et al.* (1993) emphasise the need for a greater focus on true quality. Equip (2000) note that whilst operators have an influence on true quality, it is indirect since it is measured according to customers’ perceptions. Within the bounds of true quality, a further distinction has been made in the marketing literature between technical and functional attributes which customers use to evaluate a service (Grönroos, 1978). However, this distinction has been interpreted in different ways. Whilst Ryan (1995) considers technical variables to be the tangible aspects of a service (giving the examples of reception area and bedrooms for a hotel), Ennew *et al.* (1993) deem the technical quality of a service to be the outcome. Thus according to Ennew *et al.* (*ibid*) the technical qualities on which public transport would be judged would be equivalent to what Sliwa and Stewart-David (2002) refer to as the transport product, i.e. arrival at the desired destination (see Table 3.5). Alternatively, according to Ryan’s (1995) designation, examples of technical attributes on which customers would measure a public transport service would primarily include the vehicles and stations or stops.

Meanwhile, functional attributes relate to the intangible aspects of the service which are evaluated by consumers, and to the use of the tangible elements (Ryan, 1995).

Ennew *et al.* (1993) define the functional quality of a service as the way in which it is delivered. Consistent with both definitions, functional quality attributes of the public transport service might include punctuality, comfort and information.

However, there are inconsistencies with regard to the above classifications. Firstly, Ryan's (1995) distinction between technical and functional attributes seems to be less than clearly defined, certainly for the case of public transport. It appears likely that, rather than evaluating the technical attributes of public transport *on their own merits*, customers are likely to evaluate only the *use* of these tangible elements. Thus, certainly in the majority of cases, public transport vehicles will be evaluated by customers on the basis of comfort, cleanliness or overcrowding ('how' is the service provided) rather than on the size of a vehicle or its engine ('what' is provided). The measurement of technical attributes as defined by Ryan (1995) therefore becomes redundant. At the same time, however, in the case of public transport, measuring the outcome of the service (arrival at the destination) as defined by Ennew *et al.* (1993) is of limited usefulness as it must be evaluated purely on whether or not the destination is reached. However, even where the destination has been reached, satisfaction cannot be guaranteed to result. Rather, it is the speed and timeliness of arrival which are likely to be used as gauges of SQ and CS. Since these attributes relate to 'how' the service is provided they must be regarded as functional attributes of the true quality of public transport.

A further distinction is made by Quattro (1998) between hard and soft elements of SQ, as shown in Table 3.6, however this grouping is not clarified and does not correspond to any of the classifications discussed above. Nor does it accurately

correspond to a similar classification by Harrison *et al.* (1998) who define hard quality attributes as those which are more readily quantifiable (e.g. access time) and soft elements as ‘non-journey time attributes’ such as information provision, staff attitude and vehicle comfort (*ibid*: 225).

Table 3.6 - Hard and Soft Elements of Service Quality

Soft Quality Elements	Hard Quality Elements
Service level	Travel time
Information	Walking time
Vehicle standard	Frequency
Accessibility	Interchange
	Regularity
	Seating

Source: Quattro (1998)

It is only relatively recently within the public transport satisfaction literature that the relationship has been investigated between satisfaction with attributes of public transport SQ, overall satisfaction with public transport modes and future mode of transport choice (Friman *et al.* 2001, Friman and Gärling, 2001a, 2001b). Friman (2001) notes that recent interest in user satisfaction with public transport has been fuelled by the recognition that satisfaction/dissatisfaction affects attitudes toward public transport and consequently future travel behaviour and modal choice. The distinction is made between encounter satisfaction (the response to a single transaction) and cumulative satisfaction, which develops over time (Friman *et al.*, 2001).

Friman (2001) argues that negative critical incidents (NCIs) cause negative disconfirmation in public transport services. NCIs are defined by Friman and

Gärling (2001a) as an encounter which is particularly dissatisfying⁷. Whilst encounter satisfaction is thought to be affected by emotions aroused by NCIs (Mano and Oliver, 1993), Friman *et al.* (2001) contend that attribute-specific cumulative satisfaction (the measurement of satisfaction with public transport on a range of attributes) is impacted by recollection of the regularity of critical incidents and, in turn, has a direct effect on overall cumulative satisfaction. Furthermore, Friman and Gärling (2001a) contend that, in the case of public transport, *negative* critical incidents are likely to have a greater impact on overall cumulative satisfaction than *positive* critical incidents as customers main aim is to avoid dissatisfaction (*ibid*). Accordingly, recent studies of CS with public transport have concluded that two main variables have an effect on overall cumulative satisfaction with public transport: frequency of NCIs and attribute-specific cumulative satisfaction (Friman *et al.*, 1998; Friman and Gärling, 2001a). The range of attributes used to measure satisfaction with public transport will be discussed below in section 3.5.

It has been demonstrated that, whilst there is a direct relationship between attribute-specific cumulative satisfaction and overall cumulative satisfaction, the relationship between frequency of NCIs and overall cumulative satisfaction is indirect and mediated by attribute-specific satisfaction (Friman and Gärling, 2001a; Friman *et al.*, 2001). A more complex relationship between attribute performance and overall cumulative satisfaction was also established. Attribute performance was found to

⁷ It should be noted that, whilst the term ‘critical incident’ is adopted from Bitner *et al.* (1990), it is used here with a different meaning. Bitner *et al.* (1990) describe three types of critical incident, which can have negative or positive outcomes: employee responses to failures in the delivery of services, employee responses to customer requests and unsolicited employee actions (*ibid*). Friman and Gärling’s (2001a) concept of a negative critical incident does not appear to be concerned specifically with employee response, but more generally with a negative outcome from service delivery failure.

affect overall satisfaction in the following different ways (Friman and Gärling, 2001a):

1. Attribute performance affects overall satisfaction through negative disconfirmation where NCIs are experienced (i.e. service performance falls short of expectations);
2. Attribute performance has an independent direct effect on overall satisfaction.

Friman and Gärling (2001a) conclude that in the case of public transport, the second effect is the strongest. Thus, whilst it is recognised that factors other than performance on SQ attributes affect both CS and modal choice, service performance remains a critical factor in public transport satisfaction.

An alternative perspective on public transport SQ is suggested by Pullen (1991) who concludes that performance of bus services can be measured in terms of efficiency (how well resources are utilised in producing output) and effectiveness (success of the output in meeting goals and objectives set for it by the stakeholders listed in Figure 3.5 above). Pullen (1991:344) observes that measures of quality of service are a subset of effectiveness measures and that quality of service should thus be regarded as a ‘collection of constituent attributes’.

Both of the above findings provide support for the use of methodologies developed in the marketing and tourism literatures in the evaluation of SQ and CS in urban public transport. Firstly, Pullen’s (1991) proposal that quality of service should be measured on the basis of constituent attributes corresponds to attribute based measures of SQ and CS advocated within marketing and tourism disciplines. Secondly, the significance of performance measures in evaluating overall

satisfaction, as established by Friman and Gärling (2001a), is confirmed in marketing and tourism fields as an important method of gauging service quality. Indeed, given the prevalence of studies (discussed below in section 3.5) that have measured public transport SQ and CS using an attribute based model, it is surprising that there has been no prior application of the methodologies developed within in the marketing and tourism literatures for the measurement of SQ and CS within public transport research. Therefore, prior to discussing attribute based measures of public transport SQ and CS, the following section performs a review of methodologies employed in the marketing and tourism literatures for measuring SQ and CS with the aim of selecting the most appropriate method for the case of urban public transport investigated in this study.

3.4 Comparison of Methodologies for Attribute Based Measures of Service Quality and Customer Satisfaction

The complexities of defining and measuring satisfaction with and quality of services have been hotly debated within in the fields of marketing and consumer behaviour. Various models of CS and SQ have been tested across a range of service industries, and conclusions reached on the validity of these techniques for the measurement of CS and SQ either in general or within specific service industry sectors. The purpose of this section is to review the measurement of CS and SQ within the marketing and tourism industries, in order to determine an appropriate measurement technique for a survey of visitors' satisfaction with urban transportation at a tourist destination.

Interest in the measurement of SQ has intensified as a result of the increasing contribution of the service industries to the global economy. However, there is little agreement on the nature of the concept of SQ, its dimensions and the relationships

between these. Understanding of the way in which consumers evaluate the quality of a service is sought on two accounts, firstly by virtue of its potential contribution to the academic discipline of consumer behaviour, and secondly because, from a marketing and quality management perspective, SQ is seen as a key factor in building competitive advantage through the delivery of high levels of service (Cronin and Taylor, 1992; Brown *et al.*, 1993; Ennew *et al.*, 1993). However, despite the level of interest in the measurement of SQ and CS and the subsequent wealth of publications on the subject there remains no widely accepted definition of either of the two concepts and measurement techniques are still being refined. Indeed, some authors have argued that quality, as a metaphysical concept, may not readily be defined (Holbrook and Corfman, 1985; Oliver, 1993), whilst others have contested the appropriateness of a single definition of quality to all contexts (Reeves and Bednar, 1994).

Schofield and Fallon (2001:159) observe a general consensus that ‘...service quality refers to the attributes of the service which are primarily under the control of the service operator/provider...customer satisfaction, on the other hand, refers to the ‘outcome’ for the customer after exposure to the service.’ Thus SQ becomes a supply side concept, whereas CS assumes a consumer (demand side) perspective. However, this definition is apparently inconsistent with Cronin and Taylor’s (1992: 56) assertion that SQ is ‘a form of attitude, a long-run overall evaluation’ and with a further distinction (Parasuraman *et al.*, 1988) which proposes that the difference between SQ and CS represents the difference between what a consumer *should* and *would* expect from a service.

In addition to the lack of agreement over the conceptualisation of SQ and CS, two principal and interconnected arguments persist with regard to the measurement of CS and SQ. The first is the discussion surrounding the causal order of the relationship between CS and SQ, which remains disputed (see Parasuraman et al., 1988; Bitner, 1990; Bolton and Drew 1991; Cronin and Taylor, 1992; Crompton and Love, 1995). The second argument surrounding CS measurement concerns the debate in the literature on the best performing model for the measurement of SQ/CS. The same range of models has been used to measure the nominally different concepts of *quality* (Crompton and Love, 1995), *service quality* (Brown *et al.*, 1993) *consumer satisfaction* (Cronin and Taylor, 1992)⁸ and *customer satisfaction* (Yüksel and Rimmington, 1998) while the debate surrounding the distinction between these concepts continues. Thus, the following section does not attempt to resolve the conceptual differences or causal relationships between SQ and CS, but rather is concerned with an evaluation of the range of models which have been employed for the measurement of both SQ and CS within the field most relevant to this study, i.e. tourism.

Crompton and Love (1995) note that the conceptualisation of CS has developed separately in the fields of marketing and leisure and tourism, but that the approaches used to measure CS have been similar. The range of models which have been used in these two fields are therefore reviewed together. By contrast, the measurement of consumer satisfaction with public transport has developed more recently and is less closely allied to the field of marketing. Thus, the methodological developments in this field (or indeed the lack of these) will be reviewed in a separate section (section

⁸ In the case of Cronin and Taylor (1992), the scores on a scale of attributes are compared with overall

3.5 below). In a recent review of approaches to measuring satisfaction with tourist destinations, Kozak (2001) uses the term *consumer satisfaction* to describe the overall concept under investigation. However, since the terms customer satisfaction (CS) and service quality (SQ) have been employed up to this point in the research, the same practice is adopted below.

3.4.1 Alternative Approaches to Measuring Customer Satisfaction and Service Quality: Expectations and Performance Measures in Tourism

Crompton and Love (1995) note the lack of consensus in the fields of marketing and tourism on how the evaluation of SQ can best be operationalised. The core of the debate concerns the relationship between three different concepts related to CS measurement: expectations, importance and performance of the service. In the field of marketing, approaches to measuring CS have been split into two camps, with the main controversy surrounding the inclusion, or not, of customer expectations (Kozak, 2001; Sliwa and Stewart-David, 2002). The confirmation/disconfirmation paradigm (referred to by Kozak (2001) as gap analysis) was developed and championed by the American school and focuses on the difference between a customer's expectations of a service (the comparison level) and their evaluation of its performance (Parasuraman *et al.*, 1985, 1988, 1991). Where expectations are met or exceeded, confirmation (also referred to as positive disconfirmation) results and the consumer is satisfied, if performance levels are lower than expected customers will be dissatisfied (negative disconfirmation occurs). In a variation on the above model a standard of comparison (the comparison level) has been employed against which to measure the performance versus expectations outcome (Oliver, 1980;

measures of both SQ and CS.

Churchill and Surprenant, 1982). Where the outcome is above the comparison level, expectations are confirmed and satisfaction results.

Yüksel and Rimmington (1998) cite two confirmation/disconfirmation approaches which utilise different means of data collection. The direct method requires research subjects to make direct judgments on the extent to which performance meets expectations (see Weber, 1997), whereas the induced approach requires the researcher to calculate the discrepancy between expectations and performance on the basis of separate scales designed to measure the two constructs (see Prakash and Lounsbury, 1983; Meyer and Westerbarkey, 1996).

Parasuraman *et al.* (1988) employed the confirmation/disconfirmation approach to construct the SERVQUAL model which, through the use of factor analysis, reduced a scale of 22 attributes to five dimensions of SQ on the basis of gap scores between expectations and performance: tangibles, reliability, responsiveness, assurance and empathy. However, attempts to replicate the delineation of the five components in other service sectors have not been successful (Carman, 1990, Cronin and Taylor, 1992). Therefore, whilst the SERVQUAL measurement instrument for a long time was the most widely used measurement tool for SQ, more recent research has cast doubt on both the generalisability of the SERVQUAL instrument to other service industries (Carman, 1990, Cronin and Taylor, 1992) and the validity of the expectations/performance approach to CS measurement (Brown *et al.*, 1993, Crompton and Love, 1995).

3.4.2 Criticisms of the Confirmation/Disconfirmation Paradigm: The Case for the Performance-Only Measure

The approach of the European school to measuring CS has resisted the use of expectations and distinguishes between three components of a service: technical, functional and image creation (Grönroos, 1978, 1984, 1993). At the same time, the presence of factors which influence the perceived level of SQ but are beyond the control of the service provider (e.g. illness or temperament of the customer) are recognised (Svensson, 2001). Criticisms of the inclusion of expectations in the measurement of CS have been made on several grounds. A fundamental problem affecting the use of expectations in measuring CS is the lack of agreement surrounding their definition and meaning. Specifically authors have disagreed on whether expectations represent what Oliver (1980) refers to as predictions of future performance (what the service provider realistically *would* provide) or whether expectations represent an ideal standard of desired performance (what the service provider *should* provide) as proposed by Spreng and Olshavsky (1993). Cronin and Taylor (1992) argue that the latter definition is incompatible with the proposal that expectations are based on prior experience norms (Woodruff *et al.* 1983). Furthermore, Dorfman (1979) points out that expectations based on desired performance create inconsistently high scores. A related issue is the problem of measuring expectations on the bases of experience norms. The confirmation/disconfirmation approach assumes that the customer has pre-purchase expectations. However, in the case of tourist products and services, the customer has often no previous experience of the product. Whilst experience norms may be relevant measures for products and services which are consumed on a regular basis, tourism products and services are consumed at variable intervals and, more often

than not, as first time purchases; tourists' expectations are seldom based on experience (Kozak, 2001).

Consequently, expectations of a tourist service may be based on a different but related product or service which the customer has experienced (Tse and Wilton, 1988; Erevelles and Leavitt, 1992). Furthermore, tourists' expectations may be modified before, during and after consumption. Boulding *et al.* (1993) indicate that, in the case of tourism products and services, expectations may change between the stages of purchase and consumption; as tourists augment their knowledge about a destination, their expectations may change. Carman (1990:49) further concludes that '...expectations change with familiarity'. Due to the length of time spent consuming the tourist destination product, it has been argued by Laws (1991) that tourists are likely to change their expectations (and perceptions of performance) during the trip through discussing the product with others at the destination, and receiving feedback from, in particular, management and staff. Weber (1997) also observes expectations changing during the period of a tourist visit, but attributes this to multiple experiences during the trip, as a result of which expectations are revised.

It has been noted by Mayo and Jarvis (1981) and Ryan (1997) that variables such as nationality, cultural background, social class and personality can affect expectations and satisfaction levels. Where a diverse range of consumers is the norm, as in the case of the overseas visitor market of an urban destination, the value of measuring expectations is therefore in question. However, the possibility exists that performance ratings may equally be affected by variables such as nationality, etc. Other research has cast doubt on the relationship between expectations and tourist

satisfaction. Pearce (1991) contends that tourists may be satisfied even where performance does not meet expectations and this is supported by the research of Hughes (1991:168) who found that even where expectations were not fulfilled, ‘...a considerable number of tourists were relatively satisfied’.

Finally, practical difficulties involved in measuring expectations have been the grounds for criticism of the confirmation/disconfirmation paradigm. There has been much discussion surrounding the question of when expectations should be measured. Kozak (2001) notes that expectations and performance have been measured at different stages of tourist trips; before, during and after. For example, Tribe and Snaith (1998) have measured both expectations and performance during the course of tourists’ visits to Cuba. However, where expectations and performance are measured at the same point in time, expectations scores may be contaminated by performance (Grönroos, 1993). For this reason, several studies have attempted to compare expectations measured prior to a tourist trip, with performance measured at the end of the trip (Chon and Olsen, 1991; Duke and Persia, 1996). Such studies may be affected by the difficulties of obtaining identical samples for the pre- and post-holiday surveys (Kozak and Nield, 1998). Thus there is a trade-off between the ease of collecting data and the potential contamination of the expectations scores. In light of such difficulties a performance-only measure of CS is considered preferable.

3.4.3 Further Support for the Performance-Only Model

However, it is not only the difficulties involved in conceptualising and measuring expectations that have precipitated the rise of the performance-only model. A number of evaluations of CS methodologies (some within the fields of hospitality

and tourism research) have concluded that the inclusion of expectations scores does not improve the predictive validity of performance measures (Cronin and Taylor, 1992; Brown *et al.*, 1993; Crompton and Love, 1995; Yüksel and Rimmington, 1998). Furthermore, although Friman (2001:18), within the field of public transport research, lends support to the use of the expectancy disconfirmation paradigm in the measurement of CS with public transport, she nonetheless notes that ‘performance has a strong effect when one has limited prior experiences and one is thus unable to reflect on performance’. Overseas visitors are unlikely to have extensive experience of the public transport network at the destination, thus the case for the performance-only model is strengthened.

From a practical viewpoint, the measurement of expectations scores increases the number of variables to be measured whereas their exclusion reduces the amount of data collection and input and simplifies analysis. Meanwhile, from the point of view of overseas visitors’ evaluation of destination based transport, the inclusion of expectation measures is inadvisable on theoretical and practical grounds. Tourists’ expectations of the public transport service will be shaped by a number of factors. If the tourist is a return visitor to the destination, expectations may be based on prior experience and may be considered applicable. However, visitors’ expectations will also be coloured by *inter alia* length of time between visits, tourist information or promotional material, the opinions of others at the destination (e.g. friends and relatives) as well as the performance of public transport systems in their country of residence and indeed at any other urban destination they may have visited. Thus, the arguments discussed above for excluding expectations measures from attribute based

measures of CS apply strongly to the case of overseas visitors use of the public transport service.

3.4.4 Attribute Importance in the Measurement of Customer Satisfaction

The inclusion of importance scores in CS measurement permits an analysis of the performance of attributes of satisfaction within the context of their importance. In the case of destination satisfaction, the attributes on which it is important for a product or service to perform well are those which are most important to the consumer. Failure to achieve satisfactory performance on important attributes can result in dissatisfaction (Go and Zhang, 1997). A very practical use of importance and performance scores was suggested by Martilla and James (1977) who plotted the mean importance and performance scores for the same attributes to produce a quadrant, within which management could easily identify which attributes required attention and which were already performing to a satisfactory level. Importance has been included in several different approaches to CS measurement. Goodrich (1978) adopted Fishbein's (1967) attitude theory, multiplying attributes' *perceived* performance scores by their importance scores to obtain an overall score on each attribute which allowed the identification of strengths and weaknesses. A similar approach was used by Witter (1985), who multiplied *actual* performance scores on the same attributes by their importance scores and Barsky (1992) who weighted performance scores by importance in measuring CS within the hotel industry. However, the Fishbein-type model has been criticised as the final scores obtained do not allow for a distinction between a low importance score multiplied by a high performance score, or *vice versa* (Crompton and Love, 1995; Kozak, 2001) and

because the multiplicative scores are of little practical use to managers (Yüksel and Rimmington, 1998).

A further model of CS measurement has weighted confirmation/disconfirmation scores by importance scores. Importance scores were incorporated into a study by Crompton and Love (1995) which aimed to test the predictive validity of seven different measures of quality of a festival, of which four included an importance measure. However none of these four measures outperformed the performance only measure of CS. A similar result was obtained by Yüksel and Rimmington (1998) who found that weighting performance and confirmation/disconfirmation scores by importance produced no improvement to the predictive validity of these models. Thus, the inclusion of importance in measuring CS may be rejected on the basis of methodological efficiency (Oh and Parks, 1997). Nonetheless, attribute importance measures are considered a valuable management tool (Yüksel and Rimmington, 1998) particularly for the strengths and weaknesses analysis enabled through the importance-performance matrix (Martilla and James, 1977). Moreover, Duke and Persia (1996) stress that expectation and importance scores are not surrogates for each other and Crompton and Love (1995) conclude that insights about the quality of tourist services may be lost where importance ratings are not recognized.

3.4.5 Summary of Customer Satisfaction and Service Quality Methodologies from the Point of View of the Research

Ryan (1995) and Foxall (1990) argue that research into CS should not be dominated by a single methodology, but that the use of multiple paradigms is the best path to understanding CS. Given the uncertainties which still exist with regard to the best

method of measuring CS, and indeed its very definition and relationship with SQ, there is clearly scope for further research within this field. However, for the purposes of the research discussed here, it is necessary to select the optimum methodology for the attribute based measurement of CS with public transport. Whilst little relevant methodological development has occurred within the field of transport satisfaction research, there appears to be a strong movement towards performance-only measurement within tourism research and considerable doubt has been placed on the usefulness of measuring expectations. Moreover, given the likelihood that visitors to a destination have limited experience of its public transport system, the performance only model is likely to be a more valid measure of public transport SQ/CS at overseas destinations. At the same time, the measurement of importance is vital to the research, since one of the key objectives is to establish the importance of the attributes that visitors use to measure CS with urban public transport at overseas destinations. Having identified a suitable methodology for the measurement of public transport SQ from an overseas visitor perspective, it is now necessary to identify any attributes which may potentially be used in such an evaluation. Thus, the following section attempts to collate the attributes of public transport SQ and CS used in a variety of studies across public transport modes.

3.5 The Measurement of Customer Satisfaction and Service Quality in Public Transport

The terms CS and SQ are used interchangeably throughout studies of public transport satisfaction and are often not clearly defined. CS/SQ attributes are variously referred to as *methods of achieving customer satisfaction* (TCRP, 2002), *quality indicators* (DFT, 2002b), *attributes of public transport satisfaction* (BSI,

2001), *public transport performance indicators* (Equip, 2000), *quality of service concepts* (Phillips *et al.*, 2001), *drivers of satisfaction and dissatisfaction* (van Aalst and Daly, 2002), *transit performance measures* (Kittleson and Associates *et al.*, 1999), and *public transportation service attributes* (Andrle, 1994). Thus, there is less consensus in public transport research with regard to the meaning of these two terms than there is within the tourism and marketing fields. Since it is the level of performance of the attributes which determines SQ and CS, the term performance attributes will be adopted for the purpose of this study.

Pullen (1991:158) concludes, after a thorough review of the pertinent literature, ‘it is clear that there exists no standard definition of the attributes that comprise transport services’. He further states that quality of the public transport service is a topic which has received little research effort (*ibid*). Indeed a report by Gault (1980) concluded that the definition and clarification of performance attributes required considerable further study. Notwithstanding these remarks, it is possible to classify three different approaches to the study of performance attributes in public transport which are reviewed below:

- *Operator surveys* – surveys of operators and public transport planners have established the performance attributes which the above consider are most important to passengers;
- *Customer satisfaction surveys* - these use a list of performance attributes, defined by the public transport operator or the transport authority⁹, to test customers’ satisfaction with aspects of public transport and often with public transport as a whole;
- *Customer led studies* – in this group we place studies which have attempted to uncover the performance attributes which customers use to evaluate SQ and CS in public transport on the basis of feedback from customers or through survey techniques.

3.5.1 Operator Surveys

Only two surveys of this nature have been detected (van der Maas, 1998; TCRP, 2002). The TCRP (2002) study asked thirty three public transport operators in the United States of America to identify and rank a series of performance attributes in terms of their importance to customers in achieving satisfaction. The results, rated on a five point Likert scale, showed the most important performance attributes, in the eyes of operators, to be on-time service (4.88), frequency of service (4.67), courtesy of employees (4.55), and personal safety (4.48 for stations and stops and 4.41 for vehicles) (TCRP, 2002)¹⁰.

The study by van der Maas (1998) was concerned with identifying the factors which contribute to a successful urban public transport system. It was extended across several European cities, including Manchester. Van der Maas (1998) concludes that success is the result of three factors: strategic vision, organisation and quality. These three factors can be further broken down; van der Maas (1998) argues that the following performance attributes contribute to the quality of public transport:

- Availability
- Journey time and reliability
- Public transport as a self-evident part of social life¹¹
- Accessibility
- Comfort and convenience
- Safety and security
- Service and information
- Image¹²
- Affordability

⁹ The CS surveys reviewed here do not clarify how the performance attributes used to measure CS have been derived. The attributes are therefore considered to be defined by the operator, although this may not necessarily be the case throughout.

¹⁰ Figures in brackets are the mean importance ratings for the respective attributes.

¹¹ Van der Maas (1998) argues that the degree of integration of public transport into residents' lives and the urban environment/architecture has an affect on perceived quality of urban public transport.

¹² Van der Maas (1998) found that business people in Manchester were more likely to use public transport since the introduction of the Metrolink due the attractive, modern image of the tram.

van der Maas (1998:211) concludes that the quality of public transport ‘is not just about things like price, comfort, accessibility and frequencies, but also ‘sensitive’ aspects such as image and special adaptation in the urban environment’ however she fails to comment on the relative importance awarded to the above performance attributes by the operators included in the study.

Whilst operators’ views on performance attributes are, no doubt, well informed through contact with and feedback from customers, the validity of the results would be enhanced had the studies also interrogated actual customers on the same theme. Nonetheless, operator studies provide an interesting overview of public transport operators’ assessments of the relative importance of performance attributes’ contribution to SQ and CS.

3.5.2 Customer Satisfaction Surveys

Studies of CS in the field of tourism have moved away from the use of the 22 SERVQUAL attributes of SQ (Parasuraman *et al.*, 1988) and have constructed attribute measurement scales either on the basis of previous research in a similar field (Crompton and Love, 1995) or from preliminary qualitative research (Duke and Persia, 1996). CS with public transport, however, is most often measured on the basis of performance attributes defined by the public transport operator.

Much of the research that has been carried out in this area has been completed under contract to public transport operators and is not in the public domain. Since 1999, however, the UK Department of Transport has measured bus passenger satisfaction

in England. The most recent study of bus passenger satisfaction used the performance attributes listed in Figure 3.7.

Whilst only the final category of attribute is labelled ‘service quality’, the fact that bus satisfaction is measured by asking passengers to rate their satisfaction with the performance of the above technical and functional attributes indicates that all of the categories can be considered to be attributes of customer perceived bus SQ. Only performance on the above attributes is measured, so that there is no indication of the importance of the attributes to the traveller.

Figure 3.7 - Bus Quality Indicators Used by UK Department for Transport

Bus Quality Indicators with Sub-categories	
1. Overall service	
2. Reliability	
3. Value for money	
4. Bus stop information	
5. On bus safety and security	
6. Bus stop/shelter condition	6.1 Safety and security 6.2 Freedom from litter 6.3 Cleanliness/freedom from graffiti 6.4 Condition
7 Staff	7.1 Driver/conductor behaviour
8 Information provided on bus	8.1 Bus exterior 8.2 Bus interior
9 Cleanliness of vehicle	9.1 Bus exterior 9.2 Bus interior
10 Condition of vehicle	10.1 Bus exterior 10.2 Bus interior
11 Service quality	11.1 Comfort on bus 11.2 Time waited to catch bus 11.3 Ease of boarding/alighting 11.4 Journey time 11.5 Smoothness/freedom from jolting 11.6 Level of crowding on bus

Source: DFT (2002b).

Two major projects on public transport benchmarking, funded by the European Commission under the transport programme of the European Union's Fourth Framework Programme for Research, Technological Development and Demonstration have produced lists of internal and true quality indicators in urban public transport (Quattro, 1998; Equip, 2000). However, both of these projects have focussed on performance attributes determined by public transport operators, rather than from the consumer perspective. The studies collated information from public transport operators in order to establish the most commonly used performance attributes for measuring SQ in the field of urban public transport.

As part of the Quattro project, the aims of which were to identify, evaluate and improve quality procedures for the contracting and tendering of urban public transport services, a 'comprehensive framework for analysing both functional and technical quality determinants in UPT [urban public transport]' was created in conjunction with the European Committee for Standardisation (Quattro, 1998:9). It is significant that, whilst Quattro (1998) stresses the importance of allowing customers the opportunity to judge SQ, there is no suggestion that the customer should be invited to assess performance (or indeed rate importance) on attributes other than those which are proposed/imposed by the various public transport operators and which are summarised in the Quattro (1998) framework. Nonetheless, the public transport performance attributes identified by Quattro (1998), displayed in Figure 3.8, were adopted by the European Standards Committee in January 2001 for use by public transport operators in identifying SQ targets in a move to foster consistency in the monitoring of public transport quality across Europe (BSI, 2001).

With specific regard to true quality (functional SQ indicators), Quattro (1998) found that, in practice, the evaluation of CS was fairly common among European urban public transport operators with more than 300 vehicles. However, customer surveys were found to differ in terms of procedure, frequency, scale and items measured (*ibid*). Quattro (1998) further established that the performance attributes listed in Table 3.7 were those most commonly measured in customer evaluation surveys of urban public transport in Europe. Whilst no indication is given of the derivation of these measures, Quattro (1998) found the validity of those in italics to be substantiated through a correlation with internal quality indicators, for example customers' perception of the safety and security of a particular operator was correlated with the number of safety claims and incidents that the operator experienced.

Quattro also introduces a third type of quality, referred to as external quality and defined as '...the impacts that an activity - the production and/or consumption of a good or service - has on its environment' (1998:58). Whilst the impacts of transportation on the environment are the focus of a great deal of attention and monitoring by operators and governmental bodies, this type of quality is likely to be less relevant to many other service based industries and may also be overlooked by the consumer.

Figure 3.8 - The Public Transport Quality Matrix

Public Transport True Quality Indicators (Technical and Functional)	
1. Availability	1.1 Network 1.2 Timetable
2. Accessibility	2.1 External interface 2.2 Internal interface 2.3 Ticketing
3. Information	3.1 General information 3.2 Travel information normal conditions 3.3 Travel information abnormal conditions
4. Time	4.1 Length of travel time 4.2 Punctuality and reliability
5. Customer care	5.1 Commitment 5.2 Customer interface 5.3 Staff 5.4 Physical assistance 5.5 Ticketing options
6. Comfort	6.1 Ambient conditions 6.2 Facilities 6.3 Ergonomics 6.4 Ride comfort
7. Security	7.1 Safety from crime 7.2 Safety from accident 7.3 Perception of security
8. Environment	8.1 Pollution 8.2 Natural resources 8.3 Infrastructure

Source: Quattro (1998)

A subsequent European project (Equip, 2000) reviewed technical reports and literature sources with the aim of establishing performance indicators for public transport operators. The following three categories of indicator were ascertained (Equip, 2000):

1. Indicators measuring the level of service **delivered** by the operator;
2. Indicators measuring the level of service **perceived** by the customer;
3. Indicators that are related to the legal, organisational and operational **framework** in which the operator works (external quality).

Table 3.7 - Service Quality Attributes Most Commonly Included in Customer Evaluation Surveys of European Public Transport Operators

Service Quality Attributes Always Included	Service Quality Attributes Occasionally Included
<i>Safety and security</i>	<i>Punctuality</i>
<i>Stop/Station/Vehicle cleanliness</i>	Trip duration
<i>Waiting time/frequency</i>	Response to complaints
Information system	
Ticketing system	
Driver/staff attitude	

Source: Quattro (1998)

Whilst the first two categories correspond to the concepts of internal and true quality as defined by Quattro (1998), the third category relates to indicators over which the transport operator has little influence, such as public transport legislation, existing infrastructure or the level of subsidies the operator receives. These do not equate to the external quality factors proposed by Quattro (1998). Indeed, they can be argued to correspond to the external factors affecting mode of transport choice (see Figure 3.2). It is important to clarify here that, whilst there is a relationship between these external factors and SQ, in that local conditions influence the nature and performance of public transport services (OECD, 1980; Equip, 2000), external factors are nonetheless considered to be outside the direct realm of quality, since it is system factors alone which are used by customers to measure quality of, or satisfaction with, a public transport service.

In contrast to Quattro (1998), Equip (2000) includes environmental performance attributes in the category of internal quality indicators, on which the transport operator has a strong influence. Thus a further distinction is drawn between the contribution of public transport to external (environmental) quality (Quattro, 1998) and the impact of external factors on the performance and nature of public transport services (Equip, 2000).

3.5.3 Customer Led Studies

One of the most detailed customer led studies in defining performance attributes for the measurement of public transport SQ is the work of Golob *et al.* (1972) which identified 91 attributes of public transport performance. However, Pullen (1991) criticises the research of Golob *et al.* (1972) on the basis that the 91 performance attributes were identified by means of professional expertise and a search of the literature, rather than obtained through primary research such as interviews or passenger diaries. Nonetheless, the list of performance attributes can be considered fairly comprehensive due to its size. The importance of the performance attributes identified by Golob *et al.* (1972) for passengers was subsequently tested by means of a paired comparisons questionnaire, revealing that attributes of greatest importance to the passenger were ‘arriving when planned’, ‘having a seat’ and ‘no transfer’. Attributes such as ‘coffee and newspapers on board’ and ‘stylish vehicle exterior’ were found to be of least importance to passengers (*ibid*). However, Pullen’s (1991) comments and the fact that the research of Golob *et al.* (1972) was undertaken over thirty years ago when car ownership levels were considerably lower and public transport was still state owned must be taken into consideration in assessing the value of the identified performance attributes.

Other studies of public transport quality attributes have taken a more bottom-up, customer oriented approach to investigating the performance attributes which customers use to evaluate public transport SQ. For example, Friman *et al.* (1998) argue that NCIs have a greater impact on customer perceptions of SQ than positive critical incidents, so that attempts to identify SQ attributes should focus on customer

complaints and reports of NCIs to identify clusters or dimensions of SQ. NCIs were found to fall into the seven categories displayed in Table 3.8.

With the exception of complaints about vehicle and equipment malfunction and bus stops, all complaints relate to functional attributes of the public transport service and Friman *et al.* (1998) note that the large majority of complaints pertained to customers' treatment by staff and staff response to NCIs. The categories in Table 3.8 were found to be consistent across three different critical incident techniques¹³ (see Flanagan, 1954; Bitner *et al.*, 1990) with the most important dimensions of public transport SQ being employee behaviour, reliability (e.g. punctuality) and simplicity (information). Friman *et al.* (1998) note that these three dimensions of SQ have been established in other service industries. In a later study, a fourth dimension relating to comfort, security and cleanliness (labelled 'design') was substantiated (Friman *et al.*, 2001).

The work of Swanson *et al.* (1997) used protocol analysis to establish the factors of importance to travellers during bus journeys, whose improvement would make the service more attractive to both users and non-users. The performance attributes listed in Table 3.9 were derived from the protocol analysis and are organised into eight stages of the bus journey. These stages concur with two of the three phases of the transport experience cited by Hanna and Drea (1998), i.e. the antecedents of ridership and the in-transit experience.

¹³ The three critical incident techniques which Friman *et al.* (1998) employed were content analysis of complaints, on-board interviews and a mail survey. The latter is not a common critical incident technique.

Table 3.8 - Categorisation of Incidents Obtained from Complaints

Classification category	Attribute subject of complaint
Treatment and action	Uncomfortable driving Unsafe driving Driver failed to stop Bad treatment by other employee
Punctuality	Early departure Late departure Journey cancelled without notice
Information	Arrival and departure times Notice of delays Destination information Ticket information
Technical malfunction	Vehicle Other equipment
Vehicle design and space	Crowding Discomfort Embarking and disembarking
Transport planning	Fare structure Scheduling
Other	Retailer Injury Bus stop

Source: Friman *et al.* (1998)

In addition to the detailed temporal breakdown of the public transport service illustrated in Table 3.9, Swanson *et al.* (1997) tested the performance attributes in the right hand column using stated preference techniques, in order to estimate monetary valuations for each attribute. The resulting valuations show that the attributes of public transport for which customers would be most willing to pay were information at the bus stop and clean stops and vehicles. By contrast, reducing journey time was not a high priority for bus-users.

The sample used for the research of Swanson *et al.* (1997) was taken at locations across London. An interesting comparison can be made with a study by FaberMaunsell (1999) which produced rating scores for the importance and performance of attributes of bus services in the North of England, measured on a

seven point Likert scale. The performance attributes are listed in Figure 3.9 in order of mean importance as identified by FaberMaunsell (1999).

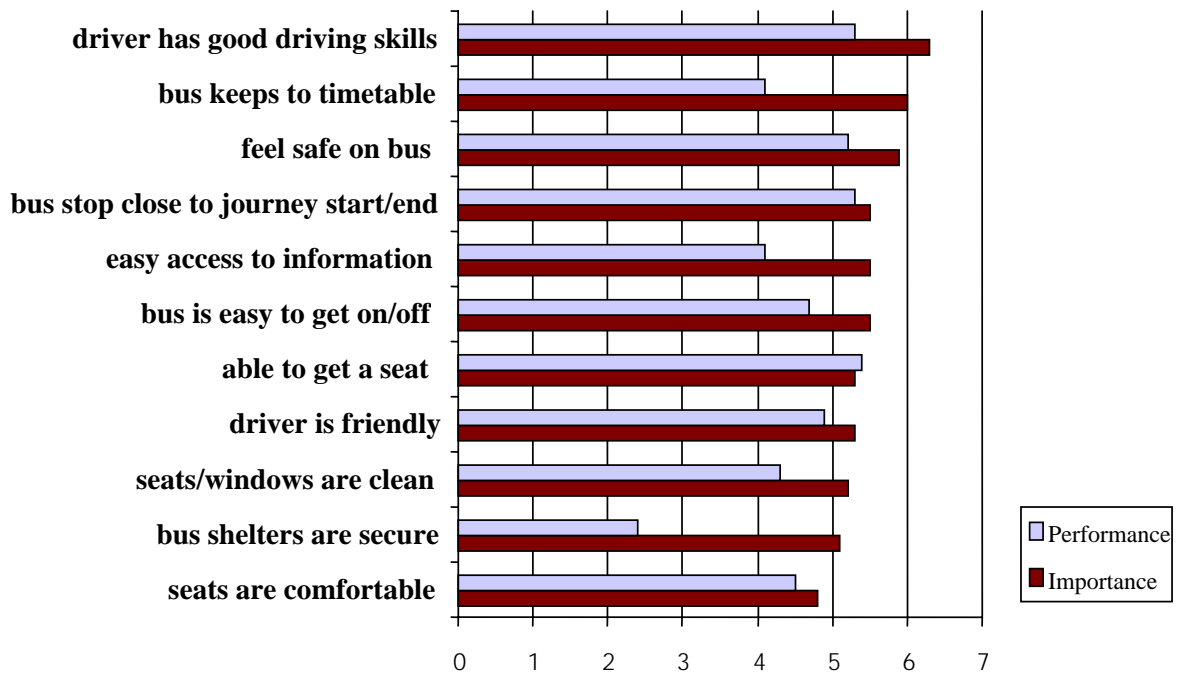
Table 3.9 – Journey Stages and Attributes of Public Transport Service

Stage of journey	Attributes important to bus travellers
Pre-trip information	Maps Timetables Customised local information Telephone information services
The bus stop infrastructure	Type of shelter Type of seat Lighting Cleanliness and state of repair
Waiting at bus stop	Fixed information display Real-time information Service reliability
The bus at the kerbside	Compulsory or request stop Ease of identifying correct bus Stopping position of bus Design of vehicle entry steps
Encountering the driver	Driver appearance Driver helpfulness Driver identification Availability of change
Moving to seat	Level of crowding Design of luggage storage area. Seating configuration Quality of vehicle motion
Travelling in a seat	Types of seat Spaciousness of seat Type of ventilation Cleanliness Travel time
Leaving the bus	Provision of information on the bus Number and location of door

Source: Swanson *et al.* (1997)

Whilst driving skill of the bus driver was identified as the most important performance attribute of bus travel (FaberMaunsell, 1999), smooth vehicle motion, the nearest comparable attribute measured in the study of London travellers, was awarded a comparably low value (Swanson *et al.*, 1997). Conversely, performance attributes such as reliability and availability of information received high importance ratings across both studies.

Figure 3.9 - Importance and Performance Ratings of Bus Service Descriptors in Northern England



Source: FaberMaunsell (1999)

Prioni and Hensher (2000) summarise bus performance attributes established in previous customer led studies (Hensher, 1991; Brewer and Hensher, 1997; Swanson *et al.*, 1997) into six different quality dimensions. They further map demand side quality attributes (viewed from the customers' perspective) into supply side equivalences which they claim are 'to varying degrees, observable and under the direct control of the bus operator' (Prioni and Hensher, 2000:54). The result of this mapping is illustrated in Figure 3.10.

Figure 3.10 - Demand Side Bus Service Quality Attributes and their Supply Side Equivalents

Demand Side Quality Attributes	Supply Side Equivalents
Getting to the bus stop quality <ul style="list-style-type: none"> • Ease, safety, time, knowing where stop is 	Getting to the bus stop quality <ul style="list-style-type: none"> • Frequency, availability of bus shelter and seats
Wait quality time <ul style="list-style-type: none"> • Wait time at stop, punctuality of bus • Wait comfort, wait safety 	Wait quality <ul style="list-style-type: none"> • Frequency • Availability of bus shelter and seats
Trip quality <ul style="list-style-type: none"> • Time to board bus • Time to get seat • Moving to your seat • Travel time • Trip cost 	Trip quality <ul style="list-style-type: none"> • Frequency, percent of low-floor buses • Number of seats available • Average speed, network shape • Travel time • Fare
Vehicle quality <ul style="list-style-type: none"> • Cleanliness • Comfort of seats • Temperature control • Noise • Safety • Modernity • Ease of use for disabled users 	Vehicle quality <ul style="list-style-type: none"> • Hours of vehicle cleaning • Percent of buses with cloth seats • Percent of buses with air-conditioning • Visual surveillance • Average age of the fleet • Wheelchair access (yes/no)
Driver quality <ul style="list-style-type: none"> • Appearance • Helpfulness 	Driver quality <ul style="list-style-type: none"> • Years of driving experience, money spent on drivers' training
Information quality <ul style="list-style-type: none"> • Pre-trip information 	Information quality <ul style="list-style-type: none"> • Availability of timetable

Source: Prioni and Hensher (2000)

Prioni and Hensher (2000) thus confirm that analyses of SQ in public transport should be primarily concerned with system factors (see Figure 3.2). Prioni and Hensher (2000) have attempted to quantify bus travellers' preferences for different levels of bus SQ using revealed preference and stated preference techniques, in order to identify the contribution of each performance attribute to overall SQ. Their findings suggest that infrastructure at the bus stop does not have an important influence on SQ (*ibid*). This finding contrasts with results obtained by Swanson *et al.*, (1997) which suggested that customers would be willing to pay more for cleaner

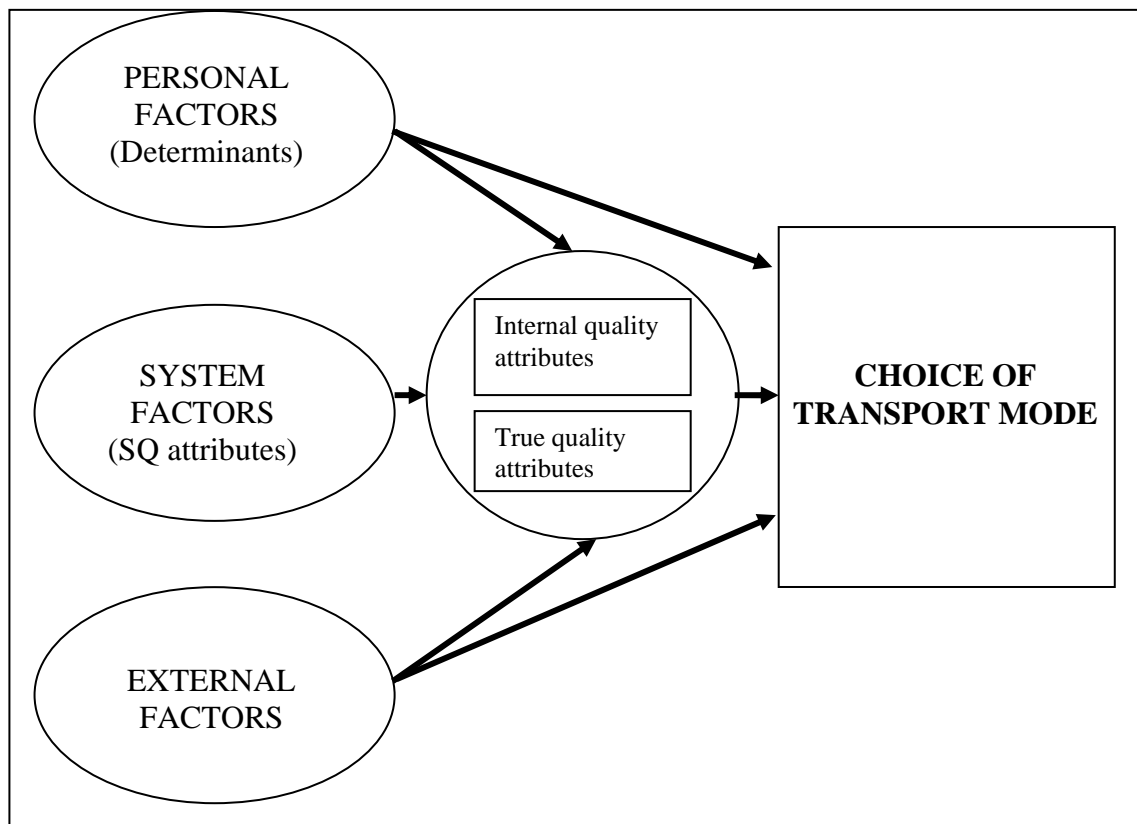
bus stops. However, other findings which suggest that onboard safety, vehicle cleanliness, driver attitude, availability of information at the bus stop and bus frequency make the most significant contribution to overall bus SQ (Prioni and Hensher, 2000) coincide with the findings of FaberMaunsell (1999).

A comparison of performance attributes across all of the customer led studies and CS surveys reviewed above shows that the majority of attributes that are commonly measured by CS surveys were also identified as important by public transport consumers. Significantly, only one of the studies discussed above (Friman *et al.*, 1998) employed or uncovered the use of technical attributes of the true quality of public transport as defined by Ryan (1995) or Ennew *et al.* (1993). Functional attributes pertaining to customer care, reliability (especially punctuality) and insufficient information (with regard to timetables and ticketing) were shown to account for the majority of customer complaints and NCIs, with cleanliness, comfort and security also being confirmed as important (Friman *et al.*, 1998). These performance attributes were also shown to have significance for the customer by the research of Swanson *et al.* (1997). However, the issue of environmental quality indicators deserves further mention. Quattro (1998) includes quality issues relating to the environment in their public transport quality matrix which forms a framework for measuring true quality, now adopted as standard within the UK (BSI, 2001). Equip (2000), by contrast categorises environmental performance attributes as internal quality indicators, measured by the operator. The fact that none of the customer led studies discussed above uncovered environmental quality as an attribute used by customers to measure public transport SQ or CS suggests that environmental indicators are of little importance to true quality and CS. Hence,

whilst environmental factors appear to play a role in modal choice, their function in assessing SQ and CS remains less clear.

To summarise, CS and SQ with respect to previous experience have been shown to play an important role in mode of transport choice. Moreover, it is accepted that performance on attributes of public transport quality contributes to customers' perceptions of overall quality and satisfaction with public transport, which in turn affect modal choice. However, whilst studies of CS and SQ commonly differentiate between internal (business process) and true (customer-perceived) quality, there is no agreement over a conclusive series of performance attributes which contribute to true quality. Pullen (1991) claims that differences in the lists of performance attributes employed in studies of CS and the lack of consistency in the results obtained by customer led studies can be attributed to the fact that public transport research is area specific. This provides evidence for the contention that, in addition to influencing modal choice directly, external factors also have an indirect effect on modal choice since they may influence the importance and perceived performance of attributes which are used by passengers and operators to measure satisfaction with public transport at a given destination. The same can be said to apply to personal factors, such as purpose of trip. For example, the reliability of a service is likely to be of greater importance to a student travelling to an examination, than to a passenger travelling to visit a friend. Similarly, there is likely to be a negative correlation between the importance of the cost of public transport trip and level of disposable income. Figure 3.11 shows the direct and indirect influences of external, personal and system factors on mode of transport choice.

Figure 3.11 - Direct and Indirect Influences of Personal, System and External Factors on Choice of Mode of Transport



Notwithstanding the apparent lack of consistency as regards the performance attributes used to measure CS with public transport, several attributes of public transport performance have been found to be common to the studies of public transport CS and SQ studies reviewed above, in particular customer care, reliability and information. However, none of the studies of modal choice or public transport SQ reviewed above have differentiated between perceptions of frequent and occasional users of public transport or between work and non-work journeys. One of the main objectives of this study is to investigate factors affecting overseas visitors' use of urban public transport. Thus, a discussion of the special characteristics of the relationship between overseas visitors and urban public transport is appropriate. The following section will therefore consider the personal and external factors which may affect overseas visitors'

satisfaction with urban public transport. The section will incorporate the results of studies which have focussed specifically on the importance of attributes of urban public transport SQ for non-work journeys or infrequent users and will in particular consider the case of overseas visitors to Greater Manchester.

3.6 Factors Affecting Overseas Visitors' Satisfaction with Urban Public Transport

The difficulty of measuring the role of experience in CS with the elements of a tourist service has been discussed in section 3.4.2. Whilst it is accepted that overseas visitors' evaluations of public transport at a destination are likely to be coloured by prior experience, it is not clear whether visitors will use any previous experience of transport at the destination in question, experience of public transport at other urban destinations, experience of public transport in their home country, or a combination of all three in evaluating their level of satisfaction. Thus, whilst an overseas visitor may have particular expectations of the public transport service in their country of residence, it does not necessarily follow that they will use this same experience against which to measure performance at an overseas destination. Furthermore, an individual may alter his expectations of public transport when in the role of a tourist, and may consequently assign different levels of importance to certain attributes of public transport SQ than he would at his place of residence. Since performance-only models of CS have been shown to have greater predictive ability over CS than expectations-performance methodologies¹⁴ and given the difficulties of measuring the expectations that overseas visitors may use in evaluating CS, there is a strong argument for focussing solely on

¹⁴ See section 3.4 for a fuller discussion of this issue.

importance and performance measures of the attributes of public transport SQ in measuring satisfaction with urban public transport at an overseas destination.

Whilst overseas visitors may use many of the same quality attributes that residents use to evaluate satisfaction with public transport, the degree of importance awarded to attributes of true quality by overseas visitors may differ from that of residents of urban destinations. Additionally, the personal factors which apply to overseas visitors and the external factors which are characteristic of the destination in question may influence performance ratings. Tourists have particular characteristics and needs as public transport users in a foreign city. They are likely to be first time or occasional users of the system and may thus be much less familiar with the public transport system than local residents. In addition there may be language difficulties which influence perceptions of performance. Moreover, the importance of transport links to and around tourist areas of the city potentially acquires a greater importance for the leisure visitor.

3.6.1 Personal Factors Relating to Overseas Visitors and the Potential Effect on Customer Satisfaction with Public Transport

In order to examine the effect of personal factors on perceptions of true quality, the attributes listed in Table 3.7 above (found to be most commonly included in surveys of CS with urban public transport in Europe (Quattro, 1998)) are discussed below in order of perceived importance for the consumer (Swanson et al., 1997; Friman et al., 1998) and suggestions are made as to how these attributes may be viewed differently from the perspective of the overseas visitor.

Customer Care

Overseas visitors who are unfamiliar with a destination are likely to place greater importance on helpfulness and reassurance from public transport staff. Regular users of a public transport system who have local knowledge are often familiar with names of stops and prices for journeys, and thus place less importance on the helpfulness and knowledge of public transport staff in respect of customer care. Overseas visitors, on the other hand, are likely to place greater importance on the helpfulness of ticket staff and drivers who exercise patience and courtesy in communicating with the visitor. In addition, visitors may value knowledgeable drivers who are not only familiar with the route but can also advise on connections to other modes of transport and access to visitor attractions.

Reliability (Including Waiting Time, Frequency, Punctuality)

Whereas business visitors may rank reliability similarly to local commuters, leisure visitors may assign less importance to leaving and arriving on time since the majority of journeys undertaken will be for non-essential leisure purposes. Findings from a study by Paine *et al.* (1969) support this hypothesis. Whilst the importance of reliability of public transport was rated 5.89 on a seven point Likert scale for work trips, it was rated 5.64 for non-work trips (Paine *et al.*, 1969). Similarly, the importance of travel time was rated 4.99 for work trips but only 4.72 for non-work trips (*ibid*). As regards frequency, visitors' perceptions of performance on this attribute are likely to be affected by the location in which they are staying during their visit. Furthermore, a lack of timetable knowledge may mean that frequency is of greater importance to overseas visitors than to residents who may use the same service every day.

Information

The role of information in public transport SQ has been shown above to be of great importance to local users. For overseas visitors, it may be of even greater importance. Certainly, the amount, type, time and location of information required by overseas visitors is likely to be different to that favoured by local users. For example, visitors may place greater importance on the availability of information in advance of arrival and they may desire information to be available in a variety of languages. Furthermore, the availability of public transport customised for the tourist and integrated with attractions information may also be valued.

Studies of bus passengers' use of bus services have shown that differences exist in the types of information required by regular and occasional users of services; regular users tend to rely on experience and seldom use information sources, whilst occasional users depend, to a large extent, on friends or telephone enquiries for information (GMPTE, 1991; Blackledge, 1992). Furthermore, where a journey is to be made for the first time, a considerably higher percentage of bus users require information before and during the journey (Balcombe and Vance, 1998). For example, Balcombe and Vance (1998) found that 48% of passengers making a new journey require information on where to alight. This information is required by only 1% of regular users (see Table 3.10).

Table 3.10: Information Required by Bus Passengers Before Making a Journey

Type of information required	Percentage of respondents requiring information		
	Regular journeys	Occasional journeys	New journeys
Departure time	18	31	79
Frequency	6	10	50
Bus number	5	9	61
Fares	3	6	39
Arrival time	3	6	40
Bus route	2	3	39
Journey length	2	1	25
Boarding point	1	3	53
Alighting point	1	3	48
Ultimate destination of bus	1	1	19
Changing point	1	2	41
No information	80	66	7

Source: Adapted from Balcombe & Vance (1998)

More critical for the overseas visitor are the usefulness and intelligibility of available information. van der Berg *et al.* (1995) highlight the fact that public transport in urban tourist destinations is not easily accessible for foreign visitors, specifically noting the lack of public transport information in foreign languages. Overseas visitors may, for example, be unwilling to utilise telephone information lines due to lack of confidence in the English language. This problem is exacerbated where the principal attractions of a destination are spread over a broad geographical area. Recognition of the need to provide comprehensive transport information for the tourist has been demonstrated at national and international level. A report published by the World Travel and Tourism Council (WTTC) in 1997 applied the sustainable principles of Agenda 21 to the travel and tourism industries and advocated improved provision of information for tourists to encourage the use of public transport at the destination (WTTC, 1997). More recently, the ETC has recognised the potential to influence tourist travel through the provision of effective information (ETC, 2001). However, the significance of the use and usefulness of public transport information from an overseas visitor perspective remains unexplored.

Safety and Security

Personal security on board urban public transport may be of greater importance to visitors who are not residents of urban areas in their home country than to local users who are potentially more hardened towards the threat of danger. The importance of safety may also be affected by a lack of knowledge on what action to take in an emergency. Furthermore, performance ratings on safety may be influenced by differing perceptions of what is acceptable behaviour by fellow travellers at an unfamiliar destination.

Cleanliness

Expected levels of cleanliness may be affected by standards in the home country or equally by general cleanliness standards at the destination. However, overseas visitors may apply higher standards of cleanliness to what is perceived to be a tourist destination than to their place of residence, potentially resulting in higher importance ratings for this attribute.

Ticketing

Whilst residents are often familiar with the exact or approximate cost of a public transport journey and the different ways in which the journey may be paid for, visitors to a city are likely to require information on the ticketing system, particularly since public transport ticketing systems vary from city to city, even within the same country. Furthermore, visitors' length of stay at the destination often does not coincide with the weekly or monthly tickets available to residents. van der Berg *et al.* (1995) have noted the lack of a designated tourist ticket at many urban visitor

destinations and ETC (2001) have highlighted the importance of the ability to purchase tickets for entire journeys, or indeed tickets which also permit entry to (as well as travel to) attractions. Failure to provide such specific measures for the visitor may have an effect on his satisfaction with the transport service at a destination.

3.6.2 External Factors Relating to Manchester as a Visitor Destination and the Potential Effect on Customer Satisfaction with Public Transport

For residents, the Greater Manchester conurbation is a place to live and work. For leisure visitors, on the other hand, it is primarily a place to play. Even for business visitors (and particularly those from overseas), there is likely to be some novelty attached to visiting a city outside of the usual environment. Since tourists and residents perceive the city and interact with its spaces and people in different ways, their use of, and hence perceptions of, public transport are again likely to be dissimilar. In order to demonstrate how external factors, such as geographic, political and legislative peculiarities of Manchester, may influence satisfaction with public transport, the same six attributes of public transport SQ discussed in the previous section will be revisited and examined in light of the characteristics of Greater Manchester as a destination to visit and travel around.

Customer Care

It has been noted, in a discussion of the demeanour of Greater Manchester's bus drivers, that there is 'a contradiction between the masculinity of these Northern men and the idea of service to other citizens' (Taylor *et al.*, 1996:106). The fact that the vast

majority of Greater Manchester's bus drivers are men¹⁵ has been claimed to have led to a lack of understanding of the transport needs of women, children and the elderly (*ibid*) within the conurbation. In the case of overseas visitors less familiar with the unconventional service ethos of the Northern male, the gap between expectations of customer care and actual performance may be widened. Furthermore, deregulation of Greater Manchester's public transport system as a result of the 1985 Transport Act is perceived to have aggravated the lack of customer care due to the fact that profit making takes precedence over serving the public (Taylor *et al.* 1996). Whilst the views recorded by Taylor *et al.* (1996) were expressed by residents of Greater Manchester, they may equally apply to visitors to the city who, as tourists, potentially have higher expectations of customer care.

Reliability (Including Waiting Time, Frequency, Punctuality)

Greater Manchester has a strongly radial public transport system, characteristic of urban conurbations with a strong city centre (Thomson, 1977). Public transport links are more frequent on radial routes into and out of the city centre, than they are between other areas of the conurbation. Thus, whilst city centre attractions may be highly accessible through frequent public transport services, outlying areas of tourist interest may be poorly served. In a city such as Manchester where residents greatly outnumber visitors, even in the peak visitor season, public transport planning is focussed on residents demand for and use of public transport service, whilst those of the visitor may be overlooked. Thus the residential city, the work city and the retail city are more readily accessible by public transport than the tourist city. Indeed, some of the National

¹⁵ Taylor *et al.* (1996) note that in 1986, only 1 percent of bus drivers in Greater Manchester were women.

Trust properties on the outskirts of the GMPTE network can be accessed by only one or two public transport services per day. Where a public transport service is not perceived to provide adequate access to visitor attractions, dissatisfaction may occur.

In addition, deregulation of public transport has negatively affected the frequency (and thus waiting time) of some services. Taylor *et al.* (1996) report complaints from local residents that, where there is competition on a route, buses arrive within a short time of each other in an attempt to poach each others' passengers, leading to extended waits at other times.

Information

There is little integration of tourist information with transport information in Manchester. Whilst the Manchester tourist guide books offer advice to the visitor on general use of the public transport system, it is beyond their remit to provide information on travel times and frequencies. Since sources of public transport information are designed for the use of residents (e.g. telephone information line, GMPTE Travelshops) visitors may tend to seek alternative suppliers of public transport information in the form of hotel reception and the TICs. Thus, the information provision aspect of public transport service, on the basis of which overseas visitors' evaluate satisfaction, is provided by an organisation other than the public transport operator and the quality and accuracy of information provided may be outside of the operators' control.

Safety and Security

Whilst Manchester city centre remains a relatively safe visitor destination, other areas of the conurbation suffer from problems of crime and social order common to most large cities. Thus, the visitor travelling (particularly outside of the city centre) on public transport may be exposed to threatening behaviour on board public transport or at stations and stops, which is likely to have a negative affect on overall satisfaction. Even within the centre of Manchester, public transport interchanges are not regarded as safe places by residents (see Taylor *et al.*, 1996) although significant improvements were made to Piccadilly train and bus stations in preparation for the Commonwealth Games in 2002.

Cleanliness

Poor standards of cleanliness on board public transport or at stations and stops can lead to an image of a neglected and poorly maintained public transport system. In the case of Manchester, the decision has been taken to avoid placing litterbins in railway stations. Whilst important security measures underlie this decision, there is nonetheless likely to be an observable effect on perceptions of cleanliness within these stations.

Ticketing

The enactment of deregulation has complicated integrated public transport ticketing in Manchester. The existence of a tourist ticket requires cooperation from all public transport operators across all modes and, typically, the more operators there are, the more difficult this is to achieve. Nor is Manchester's public transport pricing system

straightforward, even for single journey tickets, due to differences in peak and off-peak travel costs and the range of prices charged by different bus operators on the same route. Furthermore, where a bus route is served by more than one operator, prepaid return journeys must be made using the same bus operator. The complexity of the ticketing system may thus have implications for public transport satisfaction.

3.7 Conclusions

This chapter has considered the factors affecting the decision to use urban public transport and the role of attributes of SQ and CS, with respect to previous experience, in that decision. Mode of transport choice has been argued to be directly affected by personal, system and external factors, however personal and external factors also indirectly affect modal choice by means of their influence on perceptions of SQ relating to the system factors. The range of factors and attributes affecting overseas visitors' mode of transport choice at urban visitor destinations and the tentative relations between these are encapsulated in Figure 3.12 (page 136) which forms the tentative conceptual framework for the study. The conceptual framework is considered to be tentative, since information is lacking on the specific attributes used by overseas visitors to measure public transport SQ.

A variety of means of measuring SQ and CS within the tourism, marketing and transport literatures have been illustrated and the performance-only, attribute based model has been argued to be most appropriate for application to the research problem discussed here. In addition, the most important performance attributes of public transport SQ have been established both from a customer and operator perspective. These attributes have subsequently been considered with specific reference to overseas visitors' use of public transport and the characteristics of

Manchester as a visitor destination. Evidence has been found to suggest that there may be differences in the ways in which overseas visitors and local residents evaluate urban public transport, both in terms of the performance attributes they use to measure SQ and CS and the degree of importance awarded to these attributes. This premise forms a major hypothesis for the research.

From an operational and strategic perspective, attempts to increase the use of public transport by the transport operator should focus on identifying the importance of SQ attributes to the tourist and ensuring that adequate standards of performance are achieved. In addition, from a destination management perspective, it is important to identify those personal and external factors which can be manipulated, in order to increase the use of public transport by visitors to a city.

This chapter and the preceding one have performed reviews of three major areas of the literature important to this study:

- The characteristics of urban tourism and the role of transport in supply and demand;
- The attribute based measurement of SQ and CS in public transport;
- Methodologies for measuring SQ and CS within the marketing and tourism literatures.

The resulting discussion has highlighted areas for further study in line with the hypotheses elucidated in Chapter 1 and has facilitated the creation of a conceptual framework for the study. The following stage of the investigation necessitates the operationalisation of the research required to test the hypotheses within this conceptual framework, and it is with this question that the following Chapter is concerned.

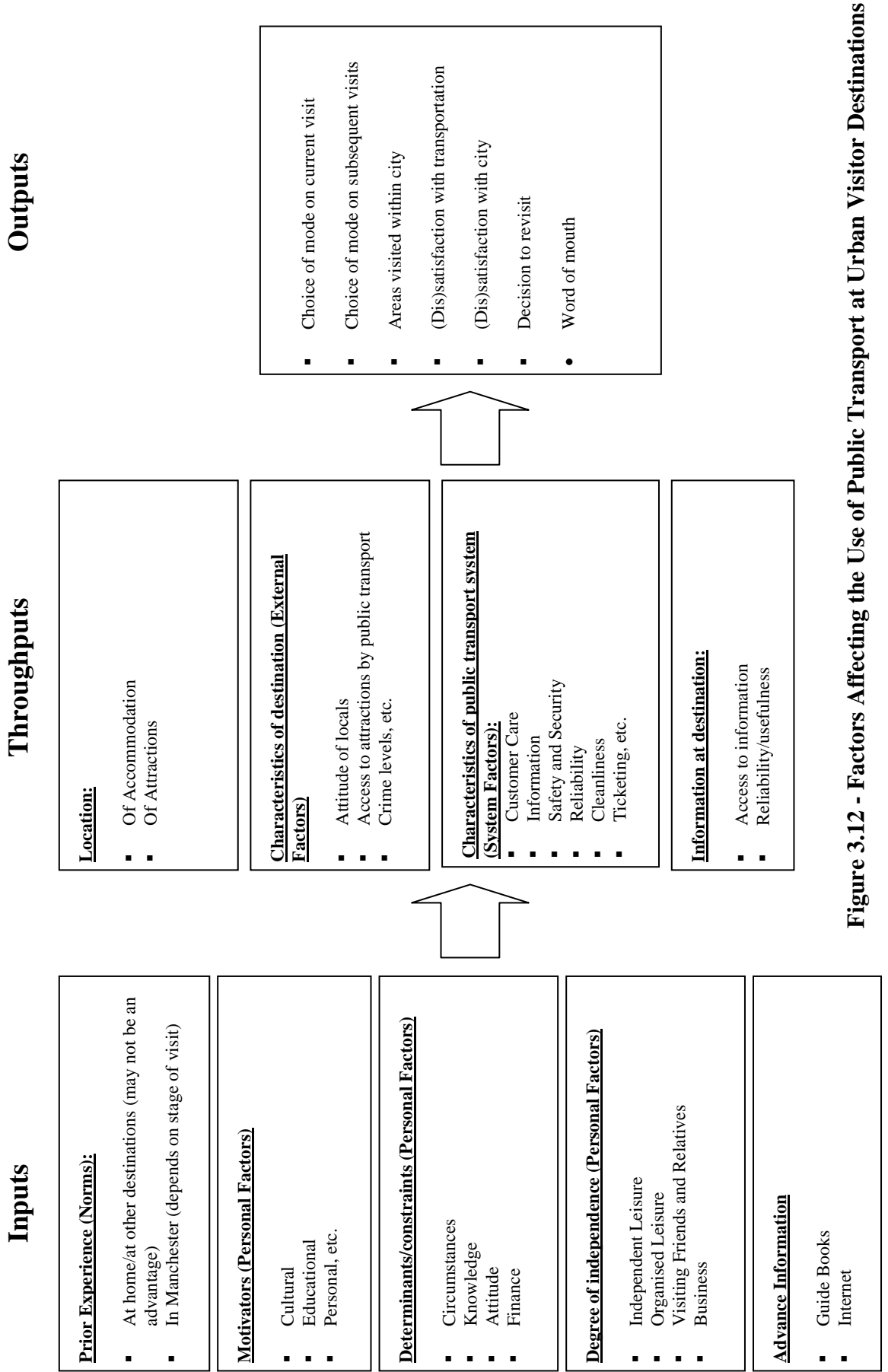


Figure 3.12 - Factors Affecting the Use of Public Transport at Urban Visitor Destinations

CHAPTER 4

METHODOLOGY

4.1 Introduction

Hussey and Hussey (1997) observe that the terms *method* and *methodology* are often used interchangeably. Jennings (2001:34) defines the methodology of a research project as ‘...the complementary set of guidelines for conducting research within the overlying paradigmatic view of the world...’. The methodology of a research project should therefore encompass not only the processes used to collect and analyse data (the methods), but also the more fundamental, theoretical underpinning of the study which influences the choice of methods. The chapter will begin with a review of the purpose of the study. A short discussion of the research paradigm which underpins the study will then be followed by a justification of the research strategy employed. The chapter will then give details of the practical and operational aspects of the study, including sampling and questionnaire design. The chapter will conclude with a discussion of reliability and validity followed by an introduction to the methods of analysis employed.

4.2 Purpose of Study Reviewed

In the absence of an established theoretical framework for the study of overseas visitors’ interaction with public transport networks, the literature review has argued for the amalgamation of techniques from the marketing, tourism and transport literatures. Drawing on studies of transport modal choice and public transport SQ, a tentative, systems based conceptual framework has been presented (Figure 3.12)

within which the theoretical and experimental hypotheses of the research will be examined. Moreover, the use of an established, performance-only SQ measurement technique from the marketing and tourism literatures has been advocated, which will facilitate the attribute based measurement of public transport SQ from an overseas visitor perspective.

As stated above, it is the purpose of this chapter to outline the research strategy employed for the study. Firstly, however, it is useful to reiterate the theoretical and experimental hypotheses to be examined by the research:

- **H1** - Overseas visitors measure satisfaction with urban public transport according to different attributes and underlying dimensions than local users;
- **H2** - Overseas visitors have different public transport information needs to local users;
- **H3** - Satisfaction with public transport is a contributing factor to destination satisfaction.

Whilst Hypotheses 1 and 2 can be addressed using straightforward descriptive statistical techniques and comparing the results to previous studies reviewed in Chapter 3, Hypothesis 3 will require the use of more complex statistical techniques performed on the data collected for the research. The importance of collecting suitable data for the above techniques should therefore not be underestimated. However, prior to discussing the technicalities of the data collection process, it is important to reflect on the research paradigm which underpins the research.

4.3 The Research Paradigm

Hussey and Hussey (1997) describe research paradigms as lying on a continuum between the positivistic paradigm at one end of the scale and the

phenomenological/interpretive at the other. It is rare, however, to find research projects in the social sciences which adhere strictly to the principles of either extreme, and many employ mixed methods approaches (Jennings, 2001). Whilst there has been much criticism of the assumptions of positivism within social science research, it nonetheless remains a common approach in the leisure and tourism fields (Veal, 1997; Jennings, 2001). However, Veal (1997:32) draws our attention to the ‘substantial body of methodologically heterogeneous non-American leisure research’ which has emerged in the 1990’s. Jennings (2001:33) cites six research paradigms that can inform tourism research. ‘These paradigms are positivism, an interpretive social sciences approach, a critical theory orientation, feminist perspectives, a postmodern approach and a chaos theory orientation’. The preference for a particular research paradigm is dictated chiefly by the background and training of the researcher but should take into account the nature of the tourism system being studied (Jennings, 2001).

‘The argument should not be about which paradigm is superior, but rather what is the best means to achieve the aims of the research’ (Jennings, 2001:135).

Whilst the ongoing epistemological debates in social science are beyond the scope of a study of this nature, it is important to establish the reflexive epistemological position that has underpinned the research process. Assumptions of the post-positivist paradigm dominate the research. More specifically the epistemological stance adopted for the research is that of critical realism, one of the most common forms of post-positivism based on a series of works by Roy Bhaskar (Bhaskar, 1975; 1978; 1986; 1989). The philosophy of critical realism claims to study external reality whilst accepting that all observation is susceptible to error and theories are

open to constant revision (Trochim, 2002). This epistemology is referred to by Johnson and Duberley (2000:148) as ‘pragmatic-critical realism’ and defined as ‘a synthesis which emerges from, and attempts to transcend, positivism’s thesis of a foundational-absolute stance and postmodernism’s antithesis of chaotic relativism’. In contrast to post-modernist subjectivism, critical realism accepts the existence of an external reality that can be studied. At the same time, the critical realist recognises that all observations of this reality are subject to error and all theory is therefore revisable. Thus, critical realists are critical of the ability to know reality with certainty (Trochim, 2002). Furthermore, critical-realists consider that objectivity can best be achieved through a collective critique of others’ work, rejecting the positivist notion that individual researchers can attain objectivity. According to Johnson and Duberley (2000:175), from the pragmatic-critical realist stance ‘the purpose of social scientific inquiry into management or whatever is to produce causal explanations which can guide, and may be evaluated through, efficacious human interventions into our social worlds’. Particularly important to critical realism is the concept of inference to the best explanation (Clayton, 1997). Although it is not possible to state that data correspond in any straightforward way to reality, a variety of explanations of the data can never the less be taken into account, in order to elicit the most viable.

The post-positivist conviction that all measurement is fallible gives rise to the use of multiple measures and observations in an attempt to reduce error. Moreover, the use of a combination of qualitative and quantitative techniques is important to the critical realist in the examination of both observable and non-observable causal conditions. The research has used a combination of research methods to produce both

quantitative and qualitative data, by means of which explanations for patterns and interrelationships between variables will be formulated which, it is hoped, can direct and inform the tourist transport management processes. Whilst the research is destination specific and the population comprises overseas visitors to Greater Manchester, nonetheless the findings raise issues relevant to urban destinations as a whole. At the same time, the limitations of the research in terms of the reliability and validity of method and generalisability of the findings are recognised and there is a focus on the practical consequences of the outcomes of the research.

4.4 The Research Strategy

Research techniques can be differentiated in a variety of ways. Figure 4.1 illustrates some of the main classifications of research strategies by approach and dimension. The strategy adopted for any research process depends on a wide range of factors relating both to the researcher's epistemological commitment and the nature of the problem. Nor is it unusual to take a combination of approaches, particularly to data collection (Hussey and Hussey, 1997). Indeed it has been argued that tourism research can benefit from the combining and integrating of different field methods (Hartmann, 1988). Furthermore, Miles and Huberman (1994) cite the use of qualitative, exploratory research that informs a quantitative survey as a legitimate mixed method approach.

Whilst Figure 4.1 provides useful, dichotomous descriptors for some of the approaches, dimensions and issues which are relevant to tourism research, it does not attempt to cover the range of methods associated with the various approaches.

Figure 4.1 – Research Strategies in Tourism Research

Source: based on Veal (1997)

4.4.1 Research Methods in Tourism

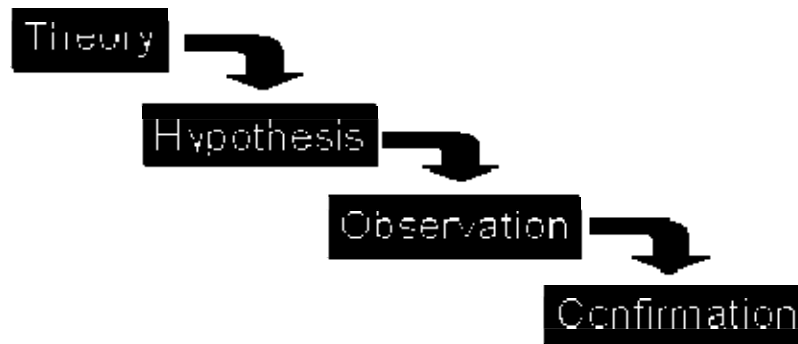
Graburn and Jafari (1991) observe that tourism research draws on a wide range of theories and methodologies from other disciplines, due to the multifaceted nature of tourism as an activity. Indeed, tourism research relies on the methods of other, traditional disciplines (Faulkner and Ryan, 1999). This tendency to exploit research methods developed by other disciplines endows the tourism researcher with a particularly rich range of strategies, although the fact that the researcher is seldom able to control any of the variables involved invariably leads mainly to a non-experimental or *ex post-facto* design (Ryan, 1995)¹. Moreover, tourism research has a more applied nature than the traditional disciplines it has borrowed from. This quality has been attributed to the development of the tourism discipline as a response to changing industry and community needs (Faulkner and Ryan, 1999).

¹ However, Ryan (1995) notes that many tourism marketing practices may be regarded as quasi-experimental, since they assess the effect of changing one variable (e.g. price) on another.

4.4.2 Towards an Appropriate Method for Data Collection and Analysis

In addition to the need for methods of data collection and analysis to be in harmony with the research paradigm (e.g. the use of a mixed method approach incorporating aspects of both qualitative and quantitative methodologies), the type of information required to address the research problem has a strong bearing on the procedures selected. Jennings (2001) identifies seven approaches to tourism research based on information requirements: exploratory, descriptive, explanatory, causal, comparative, evaluative and predictive. The research described here takes a mixed method approach and can be argued to spread across six of these seven categories, with aspects of the analysis falling into all categories with the exception of the evaluative approach. It was therefore necessary to utilise a variety of data collection techniques in order to fulfil all information requirements.

The principal strategy employed for data collection and analysis was survey research, which provided the data for the descriptive, and explanatory aspects of the research. The hypothetico-deductive model, outlined in Figure 4.2, was therefore utilised for the main primary research. In other words, the literature was the main source of ideas for the formulation of the research topic. The hypotheses developed from the literature review have been discussed at the beginning of this chapter. However, whilst the literature review informed the creation of a tentative theory, there were aspects of the theory development which required a more inductive, exploratory approach before the hypotheses could be tested. Details of all aspects of the primary research undertaken are outlined in the following sections.

Figure 4.2 – Model of Deductive Reasoning

Source: Trochim (2002)

4.5 Operationalising the Research Strategy

As outlined above, the tentative conceptual framework for the research (Figure 3.12) highlighted the need for some exploratory work before a large scale survey could take place. This was due to gaps in the literature concerning the factors affecting transport use in unfamiliar (in this case overseas) destinations. The exploratory nature of the problem argued for a qualitative approach. This was achieved through semi-structured interviews with two groups of respondents.

4.5.1 The Semi-Structured Interviews

A series of exploratory interviews was conducted to establish to what extent factors affecting overseas visitors' use of transport at urban destinations might be different to those affecting local residents. This information was required to complete the conceptual framework for the study. The interviews were therefore designed to accrue data which would complement the literature review, contribute to the conceptual framework and assist in the survey design.

4.5.2 Approaches to Interviewing

The type of interview conducted is usually decided on the basis of methodological approach and information requirements. Silverman (1997) distinguishes between two versions of interview data which represent positivist and interactionist approaches to interviewing. Whilst the more structural positivist approach was employed in the survey, this exploratory stage of the research process required an open-ended, qualitative approach to data collection, offered by the interactionist approach. Denzin (1970:125) cites three advantages to open-ended interviews:

1. Respondents are permitted to draw on their ‘unique ways of defining the world’;
2. It is assumed that no fixed set of questions can be applicable to all respondents;
3. Respondents are allowed to make observations on issues which are not contained in the interview schedule.

These characteristics of open-ended interviews make them suitable for the investigation of issues which have not previously been documented in the literature. It must be stressed, however, that the approach to data collection and analysis was not wholly interpretive. Firstly, whilst the structure of the interviews was quite loose and the data obtained from open-ended questions, the interviews did adhere to a certain format which was informed partly by aspects of related literatures, but equally by the researcher’s own experiences and observations. Secondly, in analysing the data, more emphasis was placed on the *content* of the interviews than on the conversational practices or non-verbal actions of the interviewees. Thus the approach to interviewing has features in common with Rubin and Rubin’s

(1995:196) definition of *topical interviewing*: ‘Topical studies explore what, when, how and why something happened...Factual content matters in topical interviews.’

4.5.3 The Interview Sample

The interviews were conducted over a period of several months using a non-probability sample². De Vaus (1996) verifies that non-probability sampling techniques may be appropriate in the preliminary stages of research in hypothesis generation and where external validity is not required. In particular, he suggests that availability samples, of the type described here, can be useful for exploratory research to obtain a range of views. However, he notes that availability sampling should be used with caution as it is the least likely technique to produce a representative sample (*ibid*). There were two groups of interviewee in the sample, each represented in equal numbers. Eight overseas visitors to the Greater Manchester conurbation were interviewed and eight Greater Manchester residents who had recently returned from a visit to an urban destination abroad.

The interviews required a considerable amount of cooperation from respondents. Each interview lasted at least one hour and the interviewees had to agree to have their observations tape-recorded for analysis. Furthermore, in the case of overseas visitors to the UK it was desirable to time the interviews as close to the end of the visit as possible, to capture maximum information on the visitor experience. Thus, it was necessary to make contact with overseas respondents early enough to allow for a meeting to be scheduled later in the visit. This was achieved in a variety of ways. In

some cases respondents were contacted in advance of their visit with the cooperation of Marketing Manchester, the promotional body for the City of Manchester. Other respondents were located through fliers left in hotels, visitor attractions, universities and local ethnic community groups in the city, and through a website, based closely on the flier, which was created specially for the purpose. This website was located on the University of Salford web server and, through the use of keywords, was designed to attract ‘hits’ from internet users searching for information on transport and/or tourism in Manchester. In the case of the Greater Manchester residents who participated in the interview phase, contact was made either through Manchester based companies (in the case of the two business visitors) or through an article published in the Manchester Evening News which gave details of the research and asked for interview volunteers.

Due to the absence of a sampling framework for the two groups of respondents (overseas visitors to Greater Manchester and Greater Manchester residents recently returned from an overseas urban trip) interview respondents were all individuals who had seen literature publicising the research and who then volunteered to participate by contacting the researcher. Only one individual who contacted the researcher was not subsequently interviewed. This was due to the fact that the individual, who had seen the website publicising the research from their place of residence in the United States, ultimately changed their travel plans and did not visit Manchester.

² The interviews took place throughout 2000. Interviewees from overseas were mainly targeted during the summer months, but interviews with UK residents took place throughout the latter half of 2000.

One consequence of the fact that interviewees were volunteers was that those who volunteered to participate tended to have an interest in the subject area of the research. This was particularly true of the Manchester residents. However, this factor proved beneficial to the research, as all interviewees were able to make enlightened contributions. Furthermore, the sample contained respondents with an interesting range of nationalities and socio-demographic characteristics and a mix of individual, group, leisure, business and VFR trip characteristics. Interviewees also included first time and repeat visitors to the destinations in question. Thus, there was a trade-off between the difficulty of finding respondents and the lack of representativeness in the sample. Table 4.1 summarises the socio-demographic details of the 16 individuals who participated in the interview phase.

Table 4.1 – Characteristics of the Interview Sample

Overseas Respondent ID	Gender	Age Group	Purpose of Visit	Country of Origin
Ms A	Female	15-24	Study	Japan
Ms B	Female	25-34	VFR	Canada
Mr C	Male	45-54	Business	Japan
Ms D	Female	55-64	Business and leisure	USA
Mr E	Male	15-24	Leisure	Hong Kong
Ms F	Female	35-44	Leisure	Israel
Mr G	Male	25-34	VFR	France
Mr H	Male	65+	Study	Denmark
UK Respondent ID	Gender	Age Group	Purpose of Visit	City Visited
Mr I	Male	65+	Leisure	Amsterdam
Ms J	Female	25-34	Leisure	Barcelona
Mr K	Male	35-44	Leisure	San Francisco
Mr L	Male	45-54	Business	Hamburg
Ms M	Female	25-34	Study	Copenhagen
Mr N	Male	35-44	Business	Paris
Ms P	Female	45-54	Study	Vienna
Ms Q	Female	15-24	VFR	Tokyo

4.5.4 The Interview Design

The purpose of the interviews was to establish the factors affecting use of public transport specific to overseas visitors at urban destinations. Overseas visitors were asked about their transport experiences within the Greater Manchester region served by GMPTE. UK respondents were asked to convey their public transport experiences at the urban destination they had just returned from. All visitors were interviewed on an individual basis as it was felt that setting up focus groups would pose too many practical difficulties, particularly given the transient nature of the overseas visitors' stay in Manchester and the difficulty in finding respondents.

Interviewees were invited to discuss their travel behaviour, commencing with their arrival at the destination and travel to their accommodation, then progressing to cover journeys taken during their stay. In order to establish the rationale behind choice of mode of transport, respondents were led into a more detailed explanation of the factors affecting modal choice. Journey planning was also discussed and in particular the role of information in mode of transport and journey choice. In addition, respondents were asked about any problems they had faced using or attempting to use public transport systems as overseas visitors. Information was further elicited on respondents' intrinsic attitudes to public transport use by discussing their normal modes of travel at their place of residence and their attitude towards public transport as an element of the destination product. Any effects of public transport on the destination experience were also discussed. A guiding structure in the form of a list of discussion points for the interviews can be found in Appendices 1 (for overseas visitors) and 2 (for UK respondents). The interview

structure was pre-tested with the assistance of overseas doctoral students at the University of Salford. This was considered particularly important as interview subjects were from overseas. Small linguistic amendments were made to the list of discussion points, rather than any major content changes. Reliability of the interviews was further enhanced as the same interviewer conducted and analysed all sixteen interviews.

4.5.5 Analysis of the Interview Data

When analysing interviews, the terms of reference and conceptual framework that are the essence of the analysis procedure, may be very fluid, so that data gathering and hypothesis formulation is a two way process (Veal, 1997). In this way the content of the interviews was used to enhance the conceptual framework and to endorse the research hypotheses. However, the nature of the textual analysis was not truly qualitative in that the interview data was ultimately classified with reference to *a priori* theory (in particular the conceptual framework illustrated in Figure 3.12) and emphasis was placed on the content of the interview texts, rather than the context from which they were drawn.

The interviews were transcribed and responses coded to bring together concepts and themes affecting public transport use at overseas destinations. Appropriate sections of the interview transcripts were then flagged according to the concepts they corresponded to. Jennings (2001) differentiates between four types of content analysis: summation, explanation, structuration and objective hermeneutics. The summation approach was used here to reduce the data into categories which represented the major themes of the interviews. Analysis was restricted to the

content of the dialogue and no attempt was made to interpret respondents' non-verbal behaviour. Two sample transcripts, one of an interview with an overseas visitor and one with a Greater Manchester resident, can be found in Appendices 3 and 4 respectively. Further transcripts are available on request from the researcher.

The factors affecting overseas visitors' use of public transport were initially classified into eight categories relating to the following attributes: experience, information, characteristics of transport system, personal factors, local knowledge, location, attractions and city characteristics. Further analysis of these categories revealed that they could be readily collapsed into themes which corresponded to the personal, external and system factors affecting overseas visitors' use of public transport identified in Chapter 3. The first theme clearly concerned personal factors which were specific to the visitor, such as whether the respondent was willing to use public transport despite a poor knowledge of English, or when carrying heavy luggage. These were labelled *determinant* attributes. The second group of system factors related to attributes of the transport network at the destination such as cost, speed and safety. These factors constitute the SQ attributes on which overseas visitors' satisfaction with public transport in Manchester could then be measured. The system attributes thus formed the basis for the construction of the measurement scales for the questionnaire survey, described in section 4.5.9 below.

A preliminary comparison of the SQ attributes ascertained from the interview data with the six attributes most commonly included in surveys of CS with urban public transport in Europe (Quattro, 1998), as outlined in Chapter 3 (Table 3.7), found that these six attributes were also identified by overseas visitors during the interviews as affecting the use of public transport at visitor destinations. More detailed

comparisons of the importance of the system factors to overseas visitors and local users are conducted in Chapter 5, section 5.3.3.

Only three attributes were identified as belonging to the third group of external factors: ease of parking, behaviour of other public transport users, and integration between visitor attractions and facilities and the public transport network³. Whilst ease of parking is likely to have a direct effect on modal choice, the remaining two attributes were felt rather to have the potential to indirectly influence modal choice by affecting the importance or performance of attributes of public transport SQ. For example, where the behaviour of other passengers is perceived as threatening, there is likely to be increased importance placed on helpful and reassuring staff. Similarly, good integration of the public transport network and the tourist city may positively affect perceptions of the provision and availability of public transport information. Therefore, the decision was taken to categorize these two attributes with the system factors. Ease of parking was ultimately included in the importance and performance scales along with rest of the system factors (attributes of the true quality of public transport), not only because it was felt that it was inappropriate to omit this variable, but also partially for control purposes.

The analysis of the interview data allowed the throughput elements of the systemic conceptual framework to be completed to reveal a fuller picture of the issues under

investigation in the main part of the study, i.e. the factors affecting overseas visitors' use of urban public transport. More precisely, it identified, not only a series of determinant factors affecting overseas visitors choice of public transport, but also a comprehensive list of attributes on which public transport SQ could be measured from an overseas visitor perspective. Moreover, the fact that all of the factors identified by interview respondents as affecting public transport use at overseas destinations could be classified as personal (determinant) or system (SQ) factors gives the conceptual model greater weight. Since the measurement instrument does not include external (destination specific) factors, the framework for measurement (and potentially the results of the study) arguably have greater generalisability.

4.5.6 The Principal Survey

Having established through exploratory interviews the factors affecting overseas visitors' use of public transport, a large scale survey was planned with two principal aims. The first aim was to establish to what extent the factors recorded by the interviews were generalisable to the wider population of overseas visitors to Manchester. Secondly, the public transport system in Greater Manchester was used as a test case to explore deeper relationships between public transport and the visitor experience. A survey of overseas visitors to Greater Manchester was conducted in

³ It is noteworthy that environmental concerns were not raised by any of the interviewees as having influenced their use of public transport. It was observed in Chapter 3 that none of the customer led studies had uncovered environmental quality as an attribute used by customers to measure public transport SQ or CS. This observation appears to be confirmed by the interview data for the case of overseas visitors. One possible explanation for this is that the majority of visitors do not have a practical alternative to public transport use when overseas. However, Pulcher and Lefèvre (1996) argue that the environmental impacts of urban transport are less immediate and less visible than other problems such as congestion, thus environmental concerns with regard to urban public transport may be generally overlooked.

the peak visitation period (July, August and September) of 2001⁴. A large scale questionnaire survey was undertaken with data collected in two ways. Self-complete questionnaires were placed in a sample of accommodation providers in the city and market researchers conducted face to face interviews with overseas visitors at selected sites around the city.

4.5.7 Strategy for the Questionnaire Survey: Time, Location and Method of Completion

Smith (1995) argues that surveys are the most important source of information for tourism analysis and planning. In comparison to observation methods and other qualitative research instruments, surveys facilitate the collection of large amounts of data economically and efficiently. In addition to these benefits, the desire to explore causal relationships across a large sample of overseas visitors recommended the use of a large scale, quantitative survey.

Jennings (2001) distinguishes between descriptive, explanatory, predictive and evaluative surveys. Of these, it is the explanatory survey which is used as an instrument for testing hypotheses, normally through the use of questionnaires. Written questioning by means of a questionnaire was ultimately selected as the most appropriate type of survey instrument for both theoretical and practical reasons. Smith (1995) notes that choice of questionnaire format is dictated by purpose of study, nature of questions, sample characteristics and resource constraints. These four considerations were critically important in the choice of survey technique. It was necessary to obtain data from a large sample of overseas visitors within a short

⁴ No recent data is available showing seasonality of overseas visits to Greater Manchester, but July, August and September are the peak months for overseas visits to the North West region (NWTB,

time period at a destination which does not have any identifiable single site that attracts large numbers of overseas visitors. Furthermore, relatively large amounts of information were being sought from respondents, a large percentage of whom did not speak English as their first language.

De Vaus (1996) cites three principal means of administering questionnaires commonly used in the social sciences; mail, telephone and face to face. Jennings (2001) and Veal (1997), writing on tourism research methods, further distinguish between interviewer completion and respondent completion of questionnaires. In the event, a combination of these two methods was employed for the data collection process.

The importance of survey location to obtaining a representative sample will be discussed below. Initial decisions on the means and location of administering the questionnaires were made in the interests of obtaining as large and representative a sample of overseas visitors as possible. Manchester is reported as being the UK's third most important urban tourist destination for overseas visitors, attracting between 560,000 and 680,000 visitors in 2000 (BTA, 2002; NWTB, 2002).⁵ However, Greater London, with a resident population of approximately 7.2 million attracts more than 23 times as many overseas visitors as Greater Manchester with a population of almost 2.5 million (BTA, 2002; National Statistics, 2002a). Furthermore, smaller UK cities such as Edinburgh, Oxford and Cambridge attract a much higher ratio of visitor to resident. In addition, certain destination specific

2002).

⁵ It is not clear why the English Tourist Board and North West Tourist Board figures for 2000 differ, since they are both derived from the International Passenger Survey.

factors aggravate the problem of locating overseas visitors in Greater Manchester. These include the large area of the Greater Manchester conurbation, the fact that there are no major attractions which could be considered to be ‘honeypots’ for overseas visitors as well as a heterogeneous visitor profile in terms of motivation for travel.

The survey was conducted over an eight week period from mid July to mid September 2001. It was unrealistic to run the survey over a longer period and this time period was considered to be the most popular, and therefore the most lucrative in terms of the number of overseas visitors in Manchester. This fact was confirmed in discussion with Greater Manchester accommodation providers. The difficulties of locating overseas visitors during the survey period of summer 2001 were compounded by the advent of foot and mouth disease which led to a fall of nine percent (2.4 million) in the number of overseas visitors to the UK over the previous year (National Statistics, 2002b).

A combined approach was taken to the administration of visitor questionnaires. One sample was drawn from staying visitors by distributing self-complete questionnaires to a sample of hotels in the Greater Manchester conurbation. It was hoped, through using accommodation providers in the survey, to obtain responses from business visitors to the city whom there was less chance of intercepting at tourist sites. Hotels were chosen on a systematic basis. A previous, related survey of overseas staying visitors to Greater Manchester conducted by the researcher (see Thompson *et al.*, 1998) had identified hotels that were willing to cooperate in this type of research. Of the 111 accommodation providers who had responded to the previous survey, twenty

nine were selected on the basis of their location either in the city centre, on arterial routes into the city well served by public transport, or in the Quays area of Greater Manchester. It was felt that a purposive sample consisting of hotels in these three locations would maximise the chances of obtaining both business and leisure visitors and users of public transport.

In the case of each accommodation provider, managers were targeted initially by letter explaining the nature of the research and requesting an interview to discuss the possibility of using the hotel as a survey location. In some cases visits were made to hotels to explain details of the survey, in others this discussion took place by telephone. Of the accommodation providers targeted, seventeen agreed to distribute questionnaires to overseas visitors at check-in and to ask respondents to return the questionnaires to reception. Each of these hotels was sent a package incorporating an initial thirty questionnaires and a list of instructions. A list of hotels which agreed to participate in the study is incorporated as Appendix 5.

In order to prevent total reliance on the cooperation of hotels, a further sample was taken at visitor attractions. Again, the selection of visitor attractions was made on a systematic basis. Visits were made to all city centre hotels in Greater Manchester and those lying on arterial routes into the city and in the Quays area to identify the attractions that were promoted most aggressively to staying visitors. A total of 28 hotels were visited, including all of the 17 hotels used as survey locations. Marketing and promotional leaflets held by the hotels and pertaining to visitor attractions in the Greater Manchester region were taken away for further study. An examination of these leaflets revealed the eighteen visitor attractions in Greater

Manchester which are most heavily marketed in hotels. These are displayed in Appendix 6.

In order to incorporate the information sources available to overseas visitors not staying in hotels, such as day visitors, study visitors and those staying with friends and relatives, the TICs at Manchester Airport, Salford Quays and in Manchester City Centre were also visited. In addition to collecting promotional material, the advice of TIC personnel was sought on which of the city's attractions were most popular with overseas visitors. Two free tourist information booklets made available to visitors to Manchester at various points around the city were also examined⁶. The major tourist attractions promoted by the TICs and in the booklets coincided with those promoted in hotels so that no amendments to the list of eighteen attractions were necessary at this stage.

During the visits to hotels, information was also gathered from the hotel reception or concierge on the way in which transport information is supplied to guests. Thus information on the link between hotels, attractions and the transport network was collected in two ways. Firstly by analysing the way in which hotels provide transport information to their guests and secondly by analysing the content of the attraction marketing leaflets to determine the nature of the transport information provided to visitors via this information source. A content analysis was further

⁶The two information booklets referred to are the 'Experience Greater Manchester' booklet, published by the Greater Manchester Districts Tourism Forum (GMTDF) and the 'Manchester City Guide', published by Manchester City Council. A third guide to Manchester (Schofield, 2002) provides more comprehensive information on visitor attractions, but does not give specific information on access to attractions by public transport and is not free.

conducted on the two free tourist information booklets to study their description of available transport to the attractions listed in Appendix 6.

Content analysis is traditionally associated with the breakdown of texts (such as the analysis of interview data described above) and indeed is referred to in some disciplines as textual analysis, discourse analysis or rhetoric analysis (Jennings, 2001). However, Urry (1994) extends the use of content analysis in tourism research to other media:

Tourism research should involve the examination of texts, not only written texts but also maps, landscapes, paintings, films, townscapes, TV programmes, brochures and so on. (Urry, 1994: 237-238)

The structuration approach (Jennings, 2001) was used to extract information from the brochures according to a predetermined set of categories. Brochures were examined to ascertain whether they contained various items of information (listed in Figure 4.3) for the three modes of public transport available in Manchester (bus, tram and train). The majority of the items in Figure 4.3 were adapted from a previous study which investigated the information requirements of bus passengers making a new journey and was discussed in Chapter 3 (Balcombe & Vance, 1998). However, the final three (map of destination, information on ticketing and public transport information line number) were added as they were felt to be significant for visitors unfamiliar with the destination. In addition, the presence in the leaflets of information on available parking and access by road was recorded.

The availability and usefulness of public transport information to overseas visitors will be considered more fully in Chapter 5. For the purpose of selecting survey

locations, the attractions were ranked in order of the volume (rather than type) of public transport information provided. As a result of this process, four of the eighteen attractions were excluded as potential survey locations. These locations typically were located away from major public transport routes and did not market themselves as being within the reach of the public transport system. Due to the nature of the survey and the desire to intercept visitors who had used public transport, it was felt that the survey should be conducted at attractions which visitors at least had the possibility to reach by public transport. It was further desirable that the survey attractions should be located at varying distances from the city centre. Thus, potential survey locations were plotted on a GMPTE network map and efforts were made to ensure that potential survey attractions covered the widest possible geographical area up to the Greater Manchester boundary⁷.

Figure 4.3 - Public Transport Information Items Sought Through Content Analysis of Attractions Leaflets

- Departure times
- Frequency
- Bus number (not relevant to tram or train)
- Fares
- Arrival time
- Route
- Journey length
- Boarding point
- Alighting point
- Ultimate Destination
- Changing point
- Map showing attraction with transport nodes
- Ticket information
- Public transport information line telephone number

Source: Balcombe & Vance (1998)

⁷ Since GMPTE does not employ zones for its public transport operations, zones were created by the researcher on the basis of distance from the city centre, which is also the centre of the GMPTE network. The direction in which the survey locations were situated in relation to the city centre was also taken into consideration.

Attractions were contacted by letter, explaining the nature of the research, how they had been selected as survey locations and requesting information on their volume of overseas visitors. At this stage a further seven attractions were eliminated from the list of survey attractions either because they were unable to permit research on their premises (e.g. Trafford Centre) or because they claimed to have such an exceptionally small number of overseas visitors that to survey at these locations would not have been a viable use of limited resources. At the same time, two further sites were identified as survey locations. Manchester TIC was approached as a focal point for overseas visitors to the city and generously agreed to permit surveys to take place on their premises. In addition, permission was granted to intercept visitors in the King Street area of the city. This area is an upmarket leisure shopping street within the city, where it was felt there would be a concentration of overseas visitors. Hence a total of nine sites (shown in Table 4.2) were ultimately used as survey locations.

In order to maximise the response rate, overseas visitors were intercepted by a team of two researchers at the above visitor attractions and their assistance requested in completing the questionnaire. The expense of interviewers' time was considered justified given the difficulties of finding and communicating with overseas visitors at the destination and the fact that the questionnaire was five pages in length. As a result, questionnaires were distributed face to face by researchers with foreign language capabilities. Due to the anticipated small numbers of overseas visitors at the survey locations, interviewers were requested to distribute questionnaires to all overseas visitors present. This was facilitated through liaison with staff at the

attractions. Interviewers were also instructed to make a note of refusals. Filter questions were used to establish whether respondents belonged to the population under study and respondents were requested to complete the questionnaires independently but directed to request help from the researchers if any part of the questionnaire required clarification. The questionnaire is attached to this report as Appendix 7.

Table 4.2 – Attractions Used as Survey Locations

Site	Attributes
Bramall Hall	Elizabethan manor house and gardens located in Stockport, a suburb of South Manchester
King Street	Upmarket leisure shopping area of Manchester City Centre
Manchester Cathedral	Manchester's protestant cathedral located in the historic city centre
Manchester Museum	Museum administered by University of Manchester, holding important zoology and Egyptology sections and located on arterial route to South of city centre
Museum of Science and Industry	Largest of Manchester's museums located in the Castlefield Urban Heritage Park on the edge of the city centre
Manchester TIC	Central Manchester Tourist Information Centre located next to Central Library.
Manchester United Museum	Manchester's most popular visitor attraction located in Trafford, on the edge of the Salford Quays regeneration area.
People's Pumphouse Museum	Acclaimed museum based around the lives of the British working class, located next to Salford Central Station on the edge of the city centre
The Wigan Pier Experience	A nodal series of attractions located on the outskirts of Wigan town centre, on the edge of the Greater Manchester conurbation.

The advantages and disadvantages of self-complete questionnaires listed by Jennings (2001) are recorded in Table 4.3, with comments on how each of these issues pertains to the surveys in question. The combination of self-complete and interviewer completed methods was selected to maximise response rate and obtain a representative sample of overseas visitors to Greater Manchester.

4.5.8 Achieving a Representative Sample of Urban Visitors

Much of the existing knowledge on urban visitor patterns and behaviour has been gained from single destination studies. This is largely due to the fact that such studies are often commissioned by municipal bodies, and funding is not readily available for wider, comparative studies of urban destinations. Whilst Page (1997) stresses the importance of replicating studies at a selection of urban destinations to test the validity of theories, this was not a realistic proposition. Criticisms of the tendency towards case study approaches which fail to contribute to the theoretical and methodological understanding of urban tourism (Ashworth, 1992; Pearce, 2001a) have been duly noted. Although resources have restricted the study to a single destination, it is nonetheless hoped to produce results which can contribute to a better, fundamental understanding of the relationship between transport and the urban visitor experience.

Considerable efforts were thus made to ensure that the sample obtained was representative of the population under investigation. Tull and Hawkins (1993:537) suggest that a population should be defined in terms of elements, sampling unit, extent and time. The constituents of the population under investigation can thus be defined as follows:

<i>Element</i>	All overseas visitors
<i>Sampling unit</i>	who visited the survey locations
<i>Extent</i>	in Greater Manchester
<i>Time</i>	during the period mid July to mid September 2001

Table 4.3 – Advantages and Disadvantages of Self-complete Questionnaires

Advantages	Hotels survey	Attractions survey
Respondent can complete questionnaire at own pace.	Respondents were permitted to take the questionnaire away, completing it in their own time and returning it to hotel reception.	Respondents were not given a time limit but were requested to complete the questionnaire under the supervision of an interviewer so that there was a trade off between time available and accuracy.
Questionnaire can be completed at time convenient to respondent.	Whilst respondents could complete the questionnaire in their own time, the amount of free time available to hotel guests for such activities is in question and depends on the nature of the visit.	Respondents were asked to complete the questionnaire at a particular time and location, firstly so that assistance could be provided by the interviewer and secondly to improve the response rate.
Disadvantages		
Researcher cannot be sure that targeted person has completed questionnaire.	The completion of the questionnaire by the targeted individual could not be guaranteed, though clear instructions were provided on this matter.	Interviewers ensured each questionnaire was completed by a separate individual who was an overseas visitor to Greater Manchester.
Respondent is unable to seek clarification.	Whilst clarification may have been sought from a member of the hotel staff, interviewers were not on hand to proffer assistance.	Assistance was offered to respondents by the researcher in completing the questionnaire.
Respondent may not understand language of questionnaire, resulting in non- or partial completion.	Although the questionnaire was piloted on overseas students to test comprehension, the absence of the interviewer may have resulted in non-completion due to language difficulties.	Questionnaire was piloted on a group of overseas visitors to ensure easy comprehension. Researchers spoke a variety of foreign languages and were able to clarify most language problems.
Response rates are low if researcher is not present.	The response rate was extremely low, particularly in comparison to the attractions survey where the interviewer was present.	Interviewer was always present and response rate was excellent.

Source: Adapted from Jennings (2001)

Particularly in emerging urban tourism destinations, such as Manchester, the lack of information on visitor numbers and profile often necessitates the use of non-probability sampling. This frequently takes the form of site or street surveys in areas where there is a high probability of intercepting the required type of respondent. Veal (1997) notes that quota sampling should be used in site surveys to ensure representativeness, where information is available on the population. He stresses that, where this information is not available, the strict following of random sampling

procedures must be relied upon to ensure representativeness (*ibid*). However, where the number of visitors that a researcher wishes to target is limited, the targeting of, for example, every *n*th potential respondent may lead to greatly reduced sample numbers. In such cases there is a trade off between achieving a random sample and the need for a large enough data set to perform meaningful statistical analysis. Where the sample taken cannot be considered a random sample, aspects of the sampling procedure, such as sample size and survey location, needed to be examined more closely, particularly with regard to visitor profile.

Ryan (1995) emphasises the need to ensure that a sample possesses the same characteristics as the population with regard to certain characteristics, normally selected by the researcher. In order to obtain a representative sample, data was therefore required not only on the total number of overseas visitors to Greater Manchester, but also on some aspect of the visitor profile (e.g. nationality). In practice, accurate data was very difficult to obtain. Figures for the number of overseas visitors to Greater Manchester in 2000 range from 560,000 to 680,000 (BTA, 2002; NWTB, 2002), and no information was available on any aspect of visitor profile for the city. Therefore, no useful sampling framework was available to inform the sampling process.

4.5.8.1 The Value of Visitor Typologies in Sampling Manchester's Overseas Visitors

In the absence of a reliable visitor profile which could be used to ensure the representativeness of the sample, the researcher turned to the urban tourism literature for guidance on the type of visitor cities attract. A variety of typologies have been

constructed to explain the demand side of urban tourism and these have been outlined in section 2.4.1 of this report. However, the usefulness of such typologies is in doubt due to an increase in the range of urban destinations being promoted within the competitive environment of selling the city (Ashworth and Voogd, 1990). Whilst there have been accusations of homogeneity of the urban tourism product (Boniface and Fowler, 1993; Law, 1993), the socio-demographic market an individual city attracts remains largely dependent on a variety of factors relating not only to the attractions and facilities it offers, but also to its tourism marketing strategies and the spatial, socio-economic and cultural attributes of the city. Thus, it cannot be assumed that, across all urban destinations, urban visitors have similar socio-demographic characteristics or that trip characteristics are alike. Nevertheless, given Manchester's socio-economic characteristics, the overseas visitor population is likely to include business, leisure, VFR and education segments.

The lack of a sampling framework or visitor profile, and the financial and temporal limitations of the survey made it preferable to target *every* potential respondent in order to obtain a sufficiently large sample within time and budgetary limitations. Thus researchers at attractions and hotel employees were requested to target all overseas visitors who fulfilled the criteria set by the filter questions on the questionnaire. The approach employed is that of the convenience sample (Jennings, 2001). Whilst this type of sample has been described as 'the least desirable' of sampling methods (Patton, 1990:180), a more systematic approach to sample selection was not possible under the circumstances. Nonetheless, the limitations associated with convenience sampling are acknowledged and will be addressed below.

4.5.8.2 Sample Obtained

The response rate from the hotels survey was exceptionally poor⁸. Less than two percent of questionnaires were returned and none were fully completed. The lack of response from hotels in returning questionnaires points to poor communications and disregard for the importance of the survey on the part of hotel personnel, rather than any particular unwillingness on the part of the respondents. However, non-completion may potentially have been aggravated by language difficulties and the length of the questionnaire. Due to the poor response rate and the incomplete questionnaires, the decision was taken not to include the small number of questionnaires returned from hotels in the final analysis. The potential implications of the lack of data obtained from overseas visitors staying in hotels will be discussed below.

At the attractions, on the other hand, the interviewers experienced a very low refusal rate of less than one percent (mainly due to communication difficulties) and a total of 279 interviews were completed. A breakdown of the location of completion of questionnaires can be found in Appendix 8. Due to the low numbers of overseas visitors in circulation and the cooperation of staff at the attractions, it was possible for interviewers to intercept all visible overseas visitors at the interview locations throughout Manchester during the chosen survey periods, but the socio-demographic

⁸ A total of 480 questionnaires were sent to hotels and only 6 returned, giving a response rate of 1.25%. Participating hotels were requested to return those questionnaires which they had not distributed in a special envelope, however this instruction was not complied with. In several cases, on visiting the hotels to collect questionnaires, the researcher was unable to locate a member of staff who even knew what had happened to the questionnaires. Therefore, due to a lack of cooperation and coordination on the part of the hotels, it is not possible to say how many of the questionnaires were issued but not returned, and how many were misplaced or simply ignored by hotel personnel.

breakdown of the sample raises questions about its representativeness and consequently the generalisability of the results.

4.5.8.3 Characteristics of the Sample

The degree to which the sample is representative of the population surveyed (overseas visitors to Greater Manchester) requires discussion in view of the use of non-probability sampling methods. It would be useful to examine the characteristics of the sample within the context of the official statistics on overseas tourism in Greater Manchester. However, the value of the official statistics in constructing a sample frame, or indeed as a basis for validating the sample remains negligible due to a lack of data on the profile of overseas visitors to Greater Manchester. As a result, no direct comparison can be made between different samples of the population.

As will be demonstrated below, the sample shows specific socio-demographic and socio-economic characteristics which may have a bearing on the generalisability of any conclusions drawn from the survey. Some of these characteristics can be attributed to the nature of the sampling process; the survey was undertaken during the summer peak visitation period and visitors were primarily intercepted at sites frequented mainly by leisure visitors⁹. Together with the lack of return from the hotels survey, these two factors are likely to have created certain biases in the

⁹ As the survey progressed, the researcher had to make decisions on the most profitable locations for obtaining survey returns. Whilst responses were initially collected at the full range of survey locations identified above, the paltry number of overseas visitors at some sites did not justify the expense and time of repeatedly dispatching interviewers to these locations. Thus, towards the end of the survey, a smaller range of sites was used which were those that attracted the highest number of overseas visitors. The number of questionnaires completed at each survey site can be seen in Appendix 8.

sample; these will be discussed below. Other sample characteristics may genuinely be attributed to the profile of overseas visitors in Greater Manchester but, without further extensive and costly research, it is difficult to state definitively whether this is the case.

Gender

The sample was comprised of 56.6% male tourists, and 43.4% female. The higher number of male respondents is unlikely to be due to interviewer bias as all potential respondents were targeted.

Age

It has been observed above that the demographic market cities attract is likely to be influenced by their image. Manchester has a reputation for vibrant nightlife and a large student population. It is generally accepted that Manchester is a popular destination with the younger market; indeed, in its promotional literature Marketing Manchester portrays the city in just this way. Furthermore, Cockerell (1997) claims that the 20-39 year-old age segment is the most likely to take city trips. Therefore, it may be argued that a sample skewed towards the younger end of the market such as that found in our sample (see Table 4.4), may be an appropriate one.

Table 4.4 – Age Structure of Sample

Age Group	Frequency	Percent	Valid Percent	Cumulative Percent
15-24	91	32.6	34.0	34.0
25-34	104	37.3	38.8	72.8
35-44	36	12.9	13.4	86.2
45-54	20	7.2	7.5	93.7
55-64	13	4.7	4.9	98.5
65 and over	4	1.4	1.5	100.0
Total	268	96.1	100.0	
Missing	11	3.9		
	279	100.0		

Nationality

A total of 48 nationalities were represented in the sample and in a small minority of cases, country of residence differed from nationality. A complete list of respondents' nationalities, is displayed in Appendix 9. The top ten countries of residence from which the respondents originated are illustrated in Table 4.5. Almost two thirds of all visitors sampled originate from these ten countries.

Table 4.5 – Top Ten Nationalities in Sample

Country	Frequency	Percent	Valid Percent	Cumulative Percent
Spain	53	19.0	19.7	19.7
Australia	19	6.8	7.1	26.8
Germany	18	6.5	6.7	33.5
Japan	17	6.1	6.3	39.8
USA	15	5.4	5.6	45.4
Canada	14	5.0	5.2	50.6
China	12	4.3	4.5	55.0
France	10	3.6	3.7	58.7
Italy	10	3.6	3.7	62.5
Hong Kong	7	2.5	2.6	65.1
Total	175	62.8	65.1	

A comparison of Tables 4.5 and 4.6 demonstrates the differences between the sample of overseas visitors to Manchester, and the figures recorded for the North West Tourist Board Region (NWTB, 2002) for the same year, with regard to country of origin. In particular, Spanish and Japanese visitors are much better represented in the sample, possibly due to the large number of students of these nationalities that attend English language courses in Manchester. In addition, the percentage of respondents from China and Hong Kong exceeds that for the North West Tourist Board region. This may be attributable to the fact that Greater Manchester's four universities attract a considerable number of overseas students from these territories.

When interviewing overseas visitors, the ability of the interviewer and respondent to speak each others' language will have an effect on response rate. Due to financial limitations, it was not possible to employ interviewers whose language ability covered the entire range of nationalities visiting Greater Manchester. Both interviewers who conducted the survey were able to converse in English, Spanish, French and German, and whilst this may theoretically have enhanced the response rate from these nationalities, there were so few refusals ($n < 1\%$) to complete the questionnaire due to communication problems that the effect is likely to have been minimal.

Table 4.6 – Origin of Overseas Tourists to North West Tourist Board Region 2000

Country	Percentage
USA	17
Germany	11
France	9
Netherlands	7
Australia	6
Canada	5
Other countries	45

Source: NWTB (2002)

Occupation

As Table 4.7 demonstrates, students were the most numerous type of visitor sampled, followed by intermediate managerial. All other socio-demographic groups had much lesser representation. The chi square 'goodness of fit' test using the approximate percentage of families in the UK belonging to each category (see Dibb *et al.*, 1997) suggests that the sample does not fit the model. However, it is not necessarily to be expected that the socio-economic characteristics of overseas visitors to urban areas will match that of the UK population. Visitors to urban areas

tend to mainly belong to the top three socio-economic groups, a characteristic which is reflected in our sample.

Table 4.7 – Breakdown of Occupation in Sample

	Respondents' Occupation	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Higher managerial, administrative or professional	7	2.5	2.6	2.6
	Intermediate managerial, administrative or professional	95	34.1	35.6	38.2
	Supervisory or clerical and junior managerial, administrative or professional	32	11.5	12.0	50.2
	Skilled manual workers	15	5.4	5.6	55.8
	Semi and unskilled manual workers	6	2.2	2.2	58.1
	State pensioners or widows (no other earner), casual or lowest grade workers and other retired	3	1.1	1.1	59.2
	Student	103	36.9	38.6	97.8
	Retired	6	2.2	2.2	100.0
	Total	267	95.7	100.0	
Missing	-1	12	4.3		
Total		279	100.0		

The high percentage of students tallies with the number of visitors citing 'education' as their main purpose of visit. Manchester has a large overseas student population, and the high number of visitors to Manchester at the younger end of the market (many of whom are likely to be students) has already been discussed. Table 4.8 is a contingency table illustrating breakdown of occupation by age. Whilst it is not possible to test for a relationship between age and occupation in the sample due to the number of empty cells, the vast majority of students are in the 15-34 age brackets, whilst middle class (employed) respondents are mainly between 25 and 44. Cities attract visitors from the higher end of the socio-economic scale, due to several factors. Firstly, the cultural and heritage attractions of cities appeal to a better educated individual (Page, 1995). Secondly, many city breaks are taken in addition to main holidays and are therefore more common among higher earners with greater

levels of disposable income (Cockerell, 1997). These factors are reflected in the skew toward the higher end of the socio-economic scale evident in our sample.

Table 4.8 – Occupation by Age

		Age				Total
		15-24	25-34	35-44	45 and over	
Occupation	Higher managerial, administrative or professional	1	2	2	2	7
	Intermediate managerial, administrative or professional	6	48	27	14	95
	Supervisory or clerical and junior managerial, administrative or professional	6	14	4	7	32
	Skilled manual workers	4	5	1	5	15
	Semi and unskilled manual workers	2	2	0	2	6
	State pensioners or widows (no other earner), casual or lowest grade workers and other retired	0	3	0	0	3
	Student	72	29	1	1	103
	Retired	0	0	0	6	6
Total		91	103	35	37	267

Purpose of Trip

Table 4.9 shows purpose of trip for the sample (overseas visitors to Greater Manchester) alongside purpose of trip for overseas residents to the North West Tourist Board (NWTB) region in 2001 (NWTB, 2002). The sample of overseas visitors to Greater Manchester is skewed in favour of the leisure visitor. However, it is unlikely that Greater Manchester receives fewer business visitors than the NWTB region as a whole, since Manchester is the largest city in the region and cities are the most popular destinations for business trips due to the concentration of businesses and services they accommodate (Page, 1995; Law, 2002).

Table 4.9 – Overseas Visitor Purpose of Trip North West Tourist Board Region 2000

Purpose of trip	North West Tourist Board Sample %	Survey Sample %
Holiday	24	47.5
Visiting friends or relatives	30	25.2
Business	33	7.9
Other	12	19.4

Source: NWTB (2002)

Independent leisure visitors are almost twice as well represented as any of the other categories in the sample. This may be expected for a sample collected during the peak summer vacation period. VFR visitors are known to represent a large percentage of trips to cities and particularly those with an attractive image (Law, 2002). The large student population in Manchester may further encourage this type of tourism. A large proportion of the category ‘other’ consists of visitors who declared education to be the main purpose of their trip.

4.5.8.4 Representativeness of the Sample

It can be argued that factors such as time of year, the locations at which visitors were intercepted and interviewer bias may have had an effect on the responses obtained. It is accepted that interviewer bias (the tendency of the interviewer to target a certain type of respondent) may affect the number of responses from certain types of visitor (Tull and Hawkins, 1993). In a survey of overseas visitors, the ability of the interviewer to communicate with respondents adds further potential for bias. Without the resources to employ interviewers whose language ability covers the entire range of potential nationalities, it is probable that there will be more refusals from visitors with poor English language abilities and whose native language is not one of the major European languages. However, the refusal rate was so low ($n < 1\%$)

in the case of this survey that the issue of interviewer bias can potentially be disregarded.

The low response rate ($n=1.25\%$) to the questionnaires distributed at accommodation establishments is likely to have greatly contributed to an under-representation of business visitors, as the remaining interview locations were visitor attractions, tourist information points and a shopping district, arguably less likely to be frequented by business than leisure visitors. Furthermore, although the time of year at which the survey took place was the peak period for overseas visitors, it was low season for conferences and exhibitions and potentially for other types of business travel.

Nonetheless, despite the unusual distribution of the variables measuring demographics and trip characteristics and the under-representation of business visitors, it is reasonable to believe that the sample contains valid information on the types of overseas leisure visitor the city attracts. The high percentage of young visitors to Manchester ties in with the city's standing as a nightlife city and centre for popular music. Furthermore, urban destinations typically attract a high proportion of young visitors. For example, a study of visitors to the city of Sheffield by Bramwell (1998) found that 26 percent of visitors were between 16 and 24 years of age and 74 percent were under 45 years of age. Justification may also be found for the high proportion of Spanish, Japanese and Chinese visitors in the popularity of Manchester's English language schools and universities with students of these nationalities.

The high percentage of respondents citing their occupation as ‘students’ tallies with the considerable number of visitors in the sample giving ‘education’ as their main purpose of visit. Manchester has four large universities with an increasing overseas student population. Furthermore, city tourism has been claimed to appeal most to better educated individuals within the upper socio-economic groups A and B (Page, 1995). Consequently, it might be expected that a large percentage of the young, overseas market will be students.

In summary, there is some doubt as to whether the sample is representative of the population of overseas visitors to Greater Manchester due to the heightened effects of location and seasonality on the sampling process. However, no definitive judgement can be made on the representativeness of the sample without further, extensive research. Nonetheless, it is possible that the visitor profile and trip characteristics revealed by the survey presents a valid picture of leisure, education and VFR tourism in Greater Manchester. The findings of other parts of the survey are therefore valid and informative within this local context. However, the profile of overseas visitors to Greater Manchester revealed by the sample is unlikely to be typical of other urban destinations, which limits the opportunities to generalise survey findings and emergent theories of visitor behaviour to other cities.

4.5.8.5 Some Remarks on Sample Size

In most research projects sample size will be a compromise between cost, time and required accuracy (Veal, 1997). De Vaus (1996) notes that sample size required depends on the degree of accuracy desired for the sample and on the variation in the population with regard to key variables in the study. Where it is anticipated that

responses may be split 50/50 on variables, a larger sample is required. Furthermore, where analysis of subgroups is desired, this must be taken into account in determining the sample size. There is a dispute in the literature over whether sample size is related to overall size of the population. Neumann (2000) suggests that for populations of over 100,000 one percent of the population should be sampled. Given a minimum estimated overseas visitor population of 560,000 (BTA, 2002) the sample size according to this formula would be in the region of 5600 per annum or 860 for the eight week period of the survey, without taking seasonality into account¹⁰. However, Veal (1997) suggests that for large populations small samples are less problematic, since larger samples do not significantly increase confidence levels.

Due to the exploratory nature of the research and the lack of a sampling framework, it was not possible to speculate on either the homogeneity of responses or the size of subgroups within the population. Nonetheless, according to calculations of confidence intervals related to sample size cited by Veal (1997) it can be stated that for a sample size of 250 confidence levels range from 2.7% for a homogeneous population to 6.2% where there is a 50/50 split on variables.

An alternative method of calculating sample size is suggested by Tull and Hawkins (1993), who note that the sample size necessary to estimate the population for problems involving means can be calculated from the following information:

1. the allowed error, specified by the researcher ;

¹⁰ The figure 860 is derived by dividing 5600 by 52 (weeks in the year) and multiplying by 8 (weeks of the survey).

2. the confidence level, specified by the researcher, and
3. an estimate of the standard deviation for the population

The formula for calculating the sample is shown below where n is the sample size, Z is the confidence coefficient, σ^2 is the estimated variance and e is the allowable error.

$$n = \frac{Z^2\sigma^2}{e^2}$$

The error is fixed in the unit of measurement of the variable in question. In this case, the equation has been tested on the interval data elicited from the questionnaire where the unit of measurement is a seven point Likert scale. A five percent allowable error on a seven point Likert scale is 5 percent of 6 (0.3). The z value for a confidence level of 95% is 1.96 and Tull and Hawkins (1993) report that the estimated variance for a seven point scale calculated from previous research is 3.5. Using these figures, the equation gives a result of 149 as shown below, thus the recommended sample size for problems involving means on a seven point Likert scale with an allowable error of 5% and confidence level of 95% is 149.

$$n = \frac{1.96^2 3.5}{0.3^2} = 149$$

It must be stressed that the above equation is designed to calculate sample size for simple random samples. In the absence of a sampling framework it is not possible to draw a simple random sample from our population. Non-probability sampling techniques, such as those employed for the survey, are likely to require a larger sample size. Further guidance on sample size is provided by De Vaus (1996) who

suggests that for a heterogeneous population with a 5% sampling error an acceptable sample size is 256.

In summary, there is no agreed minimum sample size for a non-probability sample of this nature. De Vaus (1996:79) concludes that ‘...decisions about samples will be a compromise between cost, accuracy, the nature of the research problem and the art of the possible’. The problems of calculating required sample size for the research have been compounded by conflicting data on the size of the population and a lack of information on seasonality of overseas visits to Manchester. The use of a greater number of interviewers at an extended range of survey sites over a longer period would, no doubt, have increased the sample size obtained. However, given the limitations on the study and the high response rate obtained, the sample of 279 overseas visitors is considered adequate. Whilst the sample size may not be large enough to allow the analysis of certain subgroups in the data, it is sufficient to allow the majority of required statistical techniques to be employed.

4.5.9 Questionnaire Design

The rationale behind the choice of interviewer and self-complete questionnaire as a measurement instrument has been considered above. Therefore this section will be confined to a preliminary discussion of the importance of questionnaire design combined with a description of the development and testing of the questionnaire.

De Vaus (1996) notes that there are five principal means of selecting questions for surveys. These are summarised in Table 4.10 with illustrations of how these points were addressed in the research.

The range of considerations for the design of questionnaires discussed in the tourism and marketing research literature is too wide to be replicated here. The account of the questionnaire design process will therefore be limited to those considerations which were most significant to the research and will be addressed within the context of the design process.

The questionnaire (see Appendix 7) was designed in three sections. Section A contained firstly questions on the nature of the stay in Manchester, such as length and purpose of stay and activities undertaken. The majority of these questions were closed multiple response questions with response categories based on WTO guidelines for the collection of data of this nature (see WTO, 1995). Two open-ended questions were included on mode of arrival in the UK and in Greater Manchester as it was felt that the permutations of these responses could not satisfactorily be captured in a closed response question.

The latter part of Section A contained the first two attribute measurement scales of the questionnaire¹¹. Question 9 contained a scale of 16 attributes designed to measure the importance of aspects of public transport SQ at any urban destination. The attributes included in the importance scale were the system factors affecting overseas visitors' use of urban public transport extracted from the interview data. It was desirable that this question should be placed near the front of the questionnaire so that it would be removed from the Manchester specific questions later in the instrument, thus minimising contamination of responses between the importance and

performance scales. Research by Duke and Persia (1996) has found that the timing of importance ratings measurement in relation to the service experience is of importance since it may result in attributes being rated differently. However, it was impractical to conduct visitor surveys both before and after use of a public transport service since visitors would have been extremely difficult to trace.

Table 4.10 – Means of Selecting Questions for Survey

Means of Selecting Questions	How addressed in survey
The research problem will affect which concepts need to be measured.	The selection of concepts and indicators has been informed by a review of the literature on urban visitor behaviour and mode of transport choice. In addition, the analysis of interviews carried out with overseas visitors to Manchester has enabled the identification of well-founded concepts and indicators which can be used to measure the constructs.
The indicators devised for the concepts to be measured determine which questions to ask.	
The researcher's instincts about the way in which concepts are linked or factors which explain relationships require certain questions to be asked.	The researcher's hypotheses on the relationship between the transport network and destination satisfaction have informed the selection of causal variables.
The way in which data will be analysed affects how information is collected.	The use of the importance-performance method of measuring CS and SQ has influenced the structure of the questionnaire and the measurement scales used. The construction of other closed questions has been influenced by the wish to subject the data to certain statistical tests and the level of measurement required.
The way in which questionnaires will be administered affects what type of questions can be asked.	In order to simplify the analysis process the same questions were used for both the hotels and attractions surveys. Thus the limitations of self-complete questions were placed on the research and the questionnaire was piloted on this basis. The use of open ended questions was also limited for this reason.

Source: Adapted from de Vaus (1996)

Question 10 comprised the so called determinant scale whose purpose was to establish which personal factors most affect use of transport at an overseas destination. For example, visitors were asked to indicate their level of agreement with the phrase 'I like to walk in foreign cities'. This scale consisted of ten attributes

¹¹ The selection of attributes for the importance, determinant and performance scales was informed by the results of the qualitative data. These attributes are discussed in more detail in the data analysis section.

which were derived from qualitative analysis of the interview data. The final question in Section A asked respondents to indicate which types of information they would require to make a journey by public transport in a foreign city. The information items which comprised the response categories for this question were adapted from Balcombe and Vance (1998) and are therefore very similar to those used in the analysis of attractions leaflets (see Figure 4.3).

The middle section, Section B, attempted to gain a picture of visitors' travel patterns in Manchester in terms of modal choice. The first question in this section requested information on the number and mode of journeys taken. It was hoped that this question would help identify the most popular modes of urban tourist travel across different areas of the destination. In practice, responses to the question were unreliable. Instead of entering a number in the matrix to indicate how many journeys of that nature had been taken, visitors simply ticked boxes to show they had made at least one journey. Problems of recall, imprecise question wording or the complexity of the question may have been responsible for this anomaly.

In Section B, visitors were also asked whether they had a car at their disposal during the trip and about the transport information sources they had used in Manchester and their usefulness. Finally visitors were asked to rate a series of satisfaction measures. Section B question 5 used a scale of eighteen attributes of public transport SQ (mapped closely to those used in the importance scale) derived from the interview data to measure satisfaction with public transport. Two attributes relating to parking were also inserted for test purposes and because parking had been identified by interviewees as an external factor affecting use of public transport. Section B

concluded with questions on overall satisfaction and future behaviour with regard to reuse of public transport. This allowed for analysis of the relationship between the performance attributes and overall satisfaction/future behaviour. Two open ended questions were inserted to give respondents the opportunity to make pertinent comments on the Greater Manchester transport network, but in practice few responses were received. The final section of the questionnaire recorded socio-demographic information which could be used to disaggregate the data.

4.5.9.1 Wording and Content of Questionnaire

The issue of question wording is one which deserves a great deal of attention in the design of questionnaires. De Vaus, (1996) presents the following checklist of sixteen points to assist in the wording of questions:

1. use simple language
2. ask short questions
3. do not ask double barrelled questions
4. do not ask leading questions
5. do not use negative wording
6. consider whether the respondent has the knowledge to answer the question
7. consider whether the question means the same to all subgroups
8. avoid prestige bias
9. use unambiguous wording
10. consider whether direct or indirect questioning is most appropriate
11. ensure a clear frame of reference for the question (e.g. temporal)
12. do not ask questions which may create opinions
13. consider whether a personal or impersonal approach is most appropriate
14. avoid objectionable wording
15. always place subject of question before alternative answers
16. avoid creating questions which may elicit socially acceptable responses

Given the target population of overseas visitors, several of these tips were particularly pertinent. Great care was taken by the researcher (a trained linguist) to ensure that the wording was unambiguous and in simple language which could be

understood by non-native speakers with a passable knowledge of English. Indeed, some questions were worded differently than they would have been for a sample of English speakers. For example the phrase ‘arriving on time’ was used instead of ‘punctuality’ to simplify vocabulary. Two tests were carried out on the questionnaire for comprehension. Firstly the researcher conducted a protocol analysis (Tull and Hawkins, 1993) by reading through the list of questions with a series of overseas students of different nationalities and asking them to identify what they understood by each of the questions. Minor simplifications to the vocabulary of the questions were consequently made.

A further check on the content of the questionnaire was made by forwarding the questionnaire to two members of the academic staff at University of Salford (Professor Ian Cooper and Mr Chris Law) who had examined the research proposal at the candidate’s interim assessment and were aware of the objectives of the research. Comments were received and changes made to reflect the input of these two individuals.

4.5.10 Pilot study

The questionnaire was refined further by piloting on a group of overseas students taking a summer course in English as a foreign language at the University of Salford. Permission was obtained from the course leader to administer the questionnaires during a teaching session. The students were largely in their early twenties, so that the pilot study did not allow for testing across age groups and occupations, however obtaining a more representative group of overseas visitors on whom to pilot the study would have involved temporal and financial input beyond the scope of the

study. Nonetheless, the cohort of students was seen as a suitable test group as the students spoke a basic level of English and, at the time of the pilot study, had been in Manchester for at least two weeks, which had given them the opportunity to experience Manchester's transport network. Furthermore, very few of them had a car at their disposal, so that they were more likely to be captive public transport users.

A substantial number of changes were made to the questionnaire as a result of the pilot study. Firstly, the questionnaire was reduced in length as the amount of time spent completing it by the students was considered to be unreasonable for an intercept survey. The pilot cohort had been instructed to inform the researcher (who remained present during the pilot study) of any difficulties they were experiencing completing the questionnaire. These difficulties were noted and a number of aspects (mainly vocabulary items) were changed as a result. In addition, attention was paid to areas where there was a high rate of non-completion. Modifications were subsequently made in an attempt to improve the completion rate of these sections. Question 13, for example, had previously requested responses on whether types of information were required before or during a journey, but was simplified as the question was onerous and it was found that responses were identical to both parts of the question.

4.5.11 Reliability and Validity

In quantitative research, the issue of reliability relates to whether a measurement technique yields the same results each time it is repeated (Babbie, 1990). The reliability of scales can be measured using a number of statistical techniques. For

single item questions, de Vaus (1996) notes that the test-retest method is the only means of checking reliability and is often very difficult to achieve. The difficulties of obtaining responses from overseas visitors to Manchester and the limitations of the project precluded the use of the test-retest method. However other methods of improving reliability for single item questions are suggested by de Vaus (1996) and are summarised in Table 4.11, with indications of how these methods were applied to the research.

In the case of multiple attribute scales, reliability is enhanced as the use of several indicators of the same concept reduces the effect of badly worded questions. De Vaus (1996) comments that knowing which questions to include in the scale is the greatest problem in scale development. Often, scale items will be chosen for inclusion on the basis of previous research. In the case of the importance, determinant and performance scales, the scale items were developed as a result of the interviews carried out in the preliminary stages of the research. The creation of these scales has been documented above. All scales were measured on a 7 point Likert scale which included a neutral response option and a 'don't know' option.

The reliability of scales can be tested using the test-retest method on the individual scale items. However, this is often not a possibility and statistical techniques have been developed to examine the consistency of responses within a scale. Cronbach's alpha coefficient, which has a range of zero to one, is an indicator of the inter-item correlation of a scale, defined as the proportion of a scale's total variance that is attributable to a common source (DeVellis, 1991). Nunnally (1978) and de Vaus (1996) suggest that there is internal consistency reliability if the alpha coefficient for

the scale is higher than 0.7. By calculating the alpha value if an item is deleted from the scale, unreliable items can be removed to enhance scale reliability. The alpha coefficients for the three scales in the questionnaire calculated from the survey responses are reported in Table 4.12.

Table 4.11 – How Methods of Improving Reliability were Applied to Single Item Questions

Method of Improving Reliability	How Applied to Research
Use well-tested questions from reputable questionnaires.	Due to the investigative nature of the research, it was not always possible to utilise pre-tested questions. Indeed, an important aspect of the research was to produce a reliable and valid measurement instrument for the factors affecting overseas visitors' use of urban transport networks. Nonetheless, where possible, questions were formulated in response to previous research. As noted above, visitor and trip characteristics were measured using WTO recommended classifications (WTO, 1995). In addition, the research of Balcombe and Vance (1998) was used to inform response options to questions on transport information.
Use carefully worded questions in questionnaire.	Questions were formulated to be easily understood by non-native English speakers. During the pre-testing stage and the pilot study, a great deal of attention was paid to this issue.
Ensure adequate training of interviewers.	Reliability is increased where there are a small number of interviewers. Two interviewers intercepted visitors and assisted with the completion of questionnaires. Both were fully informed as to the meaning of questions and were invited to provide feedback on areas of the questionnaire creating practical difficulties during the field work.
Ensure standardised coding methods. (Interrater reliability)	The coding was carried out by the researcher. A comprehensive codebook was created at the same time as the questionnaire was produced to ensure standardisation of coding process. Furthermore, standard coding methods such as the JICNARS classification of socio-economic grouping (Dibb <i>et al.</i> , 1997) and the United Nations standard country and region codes (UN, 2002) were employed.
Provide neutral response options.	For single item questions where the multiple response options could not be considered exhaustive an 'other' category was provided.

Source: Adapted from de Vaus (1996)

Table 4.12 - Alpha Coefficients for Importance, Determinant and Performance Scales

Scale	Alpha Coefficient
Determinant Scale	0.6242
Importance Scale	0.9533
Performance Scale	0.9018

The high alpha values for the importance and performance scales are indicative of a good degree of internal reliability for these scales. The determinant scale, on the other hand, has an alpha value which, whilst not particularly low, may indicate that the scale, as a measure of a single concept, is less than reliable. This is not considered to be of particular concern, since the development of the determinant scale sought less to generate questions to tap a particular concept, than to explore which of the factors raised by the interviews were of particular influence in overseas visitors' travel decisions at the destination.

Validity is concerned with ensuring that a measurement technique measures the concept it is designed to measure. The four types of validity most commonly investigated are face, criterion-related, content and construct validity (de Vaus, 1996; Ryan, 1995; Jennings, 2001). The questionnaire can be considered to have face validity as the questions posed relate to the concept being measured 'on the face of it' (Sarantakos, 1998:79 cited in Jennings, 2001:149) and seem to be a reasonable way of measuring the phenomena in question. Criterion-related validity is based on the ability of the questionnaire to produce the same results as an established questionnaire. In this case, there is no established criterion against which to measure the validity of the questionnaire.

In order to achieve content validity the researcher must determine what constitutes a relevant domain of content for the concept being measured. However, it is often difficult to define what the range of potential items is and whether a scale is representative of these (DeVellis, 1991). The importance, and performance scales in the questionnaire are considered to have content validity as the attributes being measured were indicated by preliminary research (interviews and literature review) to be a comprehensive set of indicators of the concept being measured and the scales appear to have internal reliability. However, it is accepted that the determinant scale does not include an exhaustive list of variables covering the range of visitor specific personal factors affecting transport use. Further, more extensive qualitative research would be required to increase the content validity of the determinant scale.

Construct validity is concerned with whether expectations about the theoretical relationships between variables are met (de Vellis, 1991; de Vaus, 1996). Three types of construct validity are commonly sought: convergent, discriminant and nomological validity. The latter is referred to as the interrelated laws supporting a given construct (Cronbach and Meehl, 1954) although the impossibility of attaining the levels of proof demanded in the harder sciences for most constructs used in the social sciences was later acknowledged by Cronbach (1989). Convergent validity is the degree to which concepts that should be related theoretically are interrelated in reality and discriminant validity is the degree to which concepts that should not be related theoretically are, in fact, not interrelated in reality (Trochim, 2002). In order for a measure to have construct validity, it must exhibit both convergence and discrimination.

Trochim (2002) suggests measuring convergent and discriminant validity through the use of a correlation matrix to examine whether measures that should be related are related (convergence) and measures that should not be related are not related (discrimination). Trochim (2002) uses the example of three variables thought to measure self esteem and three which theoretically measure locus of control, demonstrating that the correlations between the variables measuring the same construct (e.g. self esteem) are higher than the correlations between variables measuring different constructs. He notes that there is no benchmark for the size of these correlations other than that convergent correlations should be higher than discriminant ones (*ibid*). Table 4.13 presents a correlation matrix which includes four variables from the importance scale. Two of the variables measure the importance of parking and the remaining two are thought to measure the importance of aspects of public transport (punctuality and speed). It would be anticipated that the importance measures of aspects of public transport would correlate more highly with each other (convergence) than with the importance of parking measures (discrimination) and *vice versa*.

Table 4.13 – Correlation Matrix Demonstrating Convergent and Discriminant Validity within the Importance Scale

		importance of punctuality	importance of speed	importance of parking costs	importance of easy parking
importance of punctuality	Pearson Correlation	1	.837	.266	.301
importance of speed	Pearson Correlation	.837	1	.336	.398
importance of parking costs	Pearson Correlation	.266	.336	1	.784
importance of easy parking	Pearson Correlation	.301	.398	.784	1

N.B. All correlations are significant at the 0.01 level (2-tailed)

The correlation coefficients suggest that variables measuring importance of aspects of public transport are highly correlated with one another and those measuring

importance of parking are also highly correlated with each other. By contrast, the correlations between public transport and parking variables are considerably lower. It is therefore reasonable to suggest that convergent and discriminant validity are present within the importance measurement scale, after Trochim (2002).

A similar correlation matrix (Table 4.14) equally shows convergent and discriminant validity within the performance scale. As in the case of the importance scale, variables measuring the performance of parking provision at the destination correlate more highly with each other than they do with the variables measuring the performance of public transport and vice versa.

Table 4.14 – Correlation Matrix Demonstrating Convergent and Discriminant Validity within the Performance Scale

		public transport in Mcr arrives on time	public transport in Mcr is a fast way to travel	it is easy to park my car in Mcr	My car is safe when parked in Mcr
public transport in Mcr arrives on time	Pearson Correlation	1	.704	.551	.457
public transport in Mcr is a fast way to travel	Pearson Correlation	.704	1	.349	.492
it is easy to park my car in Mcr	Pearson Correlation	.551	.349	1	.719
My car is safe when parked in Mcr	Pearson Correlation	.457	.492	.719	1

N.B. All correlations are significant at the 0.01 level (2-tailed)

Additionally, it is possible to test the nomological validity of the performance scale¹². ‘Nomological validity of a measure is the extent to which the measure correlates in a theoretically predicted way with a measure of a different-but-related construct’ (Yüksel and Rimmington, 1998:65). The correlation between the performance scale and a measure of overall satisfaction with public transport was

compared to the correlations between the performance scale and likelihood of reusing public transport and/or destination satisfaction (different-but-related constructs) in order to establish whether the measures demonstrate convergent, discriminant and nomological validity. The performance scale in the questionnaire consists of attributes measuring satisfaction with aspects of the transport network, of which sixteen related to public transport. It would be theoretically predicted that the respondents' overall mean score on the sixteen attributes of the performance scale relating to public transport would correlate more highly with their score on an overall measure of satisfaction with public transport than with intention to reuse public transport (the measure of future behaviour included in the questionnaire) which in turn should show a higher correlation with the performance scale than the (less related) measure of destination satisfaction. Furthermore, a multiple regression analysis would be expected to show that the performance scale explains more of the variation in the variable 'overall satisfaction with public transport' than in either of the other two variables¹³. For the purpose of clarification, the relationship described above is illustrated in Figure 4.4

Table 4.15, which contains the R and R² values for the performance scale (public transport attributes only) and the overall measures of satisfaction and future behaviour, shows this to be the case. Thus, convergent, discriminant and nomological validity (and thus construct validity) are supported.

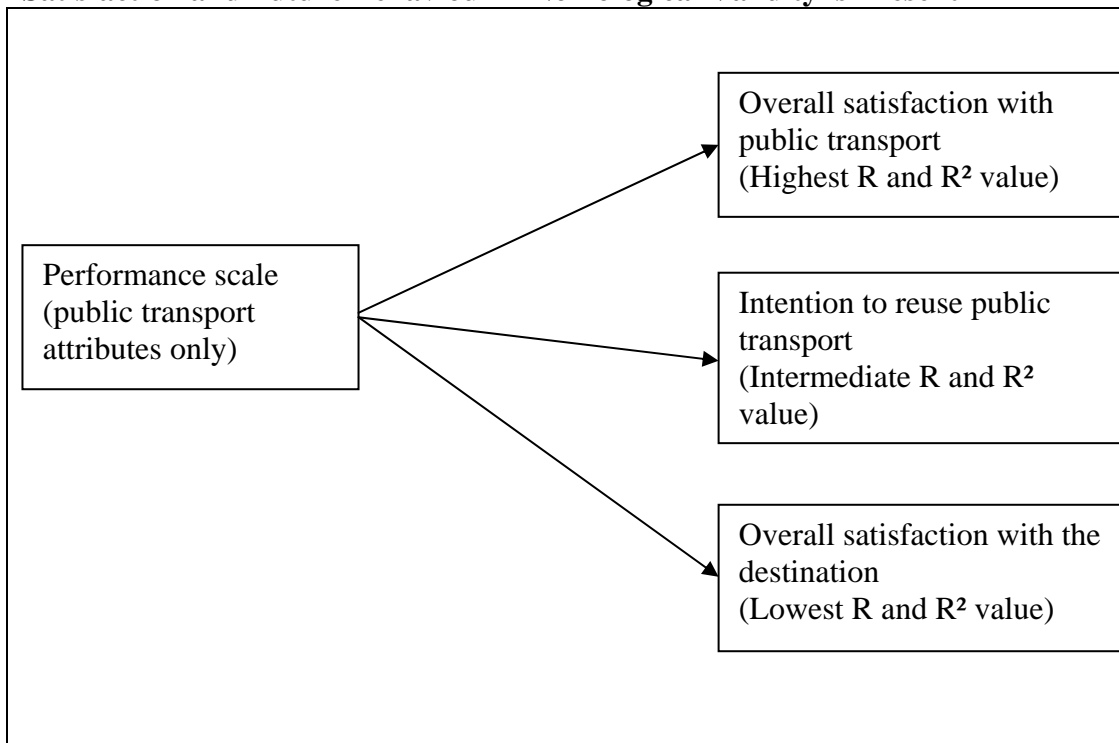
¹² Nomological validity of the importance scale can not be assessed due to the lack of a measure of overall importance on the questionnaire.

¹³ Full details of the regression analysis are displayed in Chapter 5, section 5.3.16.

Table 4.15 – Results of Reliability, Multiple Regression and Correlation Analyses

Model	Coefficient alpha	Adjusted R ² Overall Satisfaction with Public Transport	Correlation with...		
			Satisfaction with Public Transport	Intention to Re-use Public Transport	Satisfaction with Destination
Performance only attributes	0.9018	0.138	0.383	0.344	0.173
Performance attributes weighted by importance	0.9445	0.059	0.261	0.340	0.203

N.B. Spearman's Rho used for correlations

Figure 4.4 – Theoretically Predicted Relationship between Measures of Satisfaction and Future Behaviour if Nomological Validity is Present

A further test of nomological validity in the research was performed by comparing the R² value for the performance scale and overall satisfaction with public transport with that of the performance scale weighted by importance. Within the CS literature a series of studies have found that the ‘performance only’ measure explains more of the variation in overall satisfaction and future behaviour than performance weighted by importance (see Cronin and Taylor, 1992; Brown *et al*, 1993; Crompton and

Love, 1995; Yüksel and Rimmington, 1998; Kozak, 2001). Again the R^2 values shown in Table 4.15 support the case for nomological validity as the measures behave as theoretically predicted.

In the case of the determinant scale, the case for construct validity cannot be established due to the diverse and incomplete nature of the attributes in this scale and the lack of a different-but-related measure against which to measure it. However, the determinant scale plays only a supporting role since it is concerned with visitor related attributes rather than aspects of the destination.

4.6 The Data Analysis Process

After initial input of the data, the matrix was checked for errors by examining minimum and maximum values and the frequencies of the nominal and ordinal data. Some rogue values which lay outside the possible categories for the nominal and ordinal variables were located and amended by reference back to the questionnaires. In the case of the interval data, again minimum and maximum values were checked and those which fell outside of the range of the variables (1-7) were amended by reference to the questionnaires.

Following this preliminary check, an independent party was engaged to check for data entry errors. A random sample of the questionnaires was selected by throwing two dice. The score achieved being the number seven, the checking procedure began with the seventh questionnaire. Every subsequent seventh was compared with the data in the SPSS dataset to identify any errors which had occurred at the data entry stage. As a result of this process a very small number of errors were located and

corrected. Due to the insignificance of the errors, it was considered unnecessary to check all other questionnaires. Recoding subsequently took place of several of the variables and the open-ended string variables were coded (nationality, occupation, mode of arrival, etc.) A second check for rogue values was then run on the data during which no errors were found.

The scale variables were subjected to normality checks and the results used to make a decision on the type of statistical test which could legitimately be applied to the data. Full details of this process are outlined at the beginning of Chapter 5. Univariate tests were conducted to reveal the descriptive nature of the data. Bivariate relationship testing was conducted in order to uncover relationships between pairs of variables. An importance-performance (IP) matrix (Martilla and James, 1977) was created as a practical management tool for identifying the strengths and weaknesses of public transport from the overseas visitor perspective and for developing the marketing of public transport to overseas visitors. Multivariate analysis included a principal components analysis of the scales, which attempted to uncover more general concepts among the scale attributes, and multiple regression analysis, which was performed to investigate the predictive power of certain variables on destination satisfaction. The results of the above statistical analyses are presented in the following Chapter.

CHAPTER 5

DATA ANALYSIS AND RESULTS

5.1 Introduction

A review of the literature in Chapters 2 and 3 has investigated the immediate subject domains within which the research sits, set the context for the study and identified important research questions to be addressed during the primary research phase. Theoretical and practical issues concerning the implementation of the primary research have been dealt with in Chapter 4. Chapter 5 now seeks to present a focussed analysis of the data collected from the principal survey. Given the amount of data collected by means of the questionnaire, the analysis has been confined to a well directed testing of the hypotheses which have been presented in Chapters 1 to 4.

The chapter commences with a thorough statistical analysis of the distribution of the ratings on the scale variables in order to select appropriate techniques for hypothesis testing. A small amount of descriptive data is then presented, where this is considered to be important to subsequent analysis. This is followed by thorough analyses of the determinant, importance and performance scales which are investigated for between-groups differences and are contrasted with the results of previous studies identified in the literature review. An IP analysis is included in order to facilitate data interpretation and derive destination management solutions. Principal components analysis (PCA) is performed on the interval level data in order to verify the internal consistency of the scales and identify underlying dimensions

within the scales. Finally, multiple regression analysis is conducted in order to test the construct validity of the measurement instrument and assess the contribution of principal components (factors) to subjects' overall satisfaction levels.

5.2 Choosing Appropriate Statistical Techniques for Hypothesis Testing

The choice of statistical technique for hypothesis testing must be informed by the characteristics of the data. The usual approach in social research is to distinguish between four types of data; nominal, ordinal, interval and ratio (Dancey and Reidy, 1999). However, Howitt and Cramer (2000) report that the more traditional approach is a broader distinction between nominal and numerical data. Pallant (2001) on the other hand, differentiates between categorical variables (nominal and ordinal) and continuous variables (interval and ratio). The level of measurement is a primary consideration in choosing statistical techniques; however other criteria must also be taken into consideration. Criteria for selecting appropriate statistical tests are outlined below and applied to the Likert scale data obtained from the questionnaire survey. Conclusions are drawn as to the techniques which are most appropriate in each instance.

5.2.1 Criteria for Using Parametric Statistical Tests

Special statistical tests (such as chi-square) exist for nominal data. In the case of numerical data, where only an ordinal level of measurement can be assumed, non-parametric tests should be used. Parametric statistical tests can be used for interval and ratio data as this type of data is truly quantitative (Siegel, 1956). However, parametric tests require certain assumptions to be met about the data and the

population that it is taken from. Field (2000) and Siegel (1956) both cite four assumptions of parametric tests: interval level data, normally distributed data, homogeneity of variance and independence. The degree to which the data collected by the determinant, importance and performance scales meets these four assumptions is discussed below.

5.2.2 Likert Scales as Interval Level Data

The precedent for treating psychometric scales (such as Likert scales) as interval level data was set in psychological research by Stevens (1946). Pallant (2001), for example, treats variables representing Likert-scale ratings as ‘continuous’ data, suggesting that statistical tests which are suitable for interval data may be used on Likert-scale ratings. The obvious advantage to this assumption is the ability to analyse the data using more sophisticated techniques. However, Hayes (2000:243) notes that this assumption is ‘terrifically controversial’ as variables within a scale may have different levels of importance, affecting the summated approach to analysing Likert scales. With regard to profile analysis, Smith (1995) warns that the assumption that Likert scales have interval properties may be unwarranted due to inequality of distance between points on the Likert scale. The pattern of distribution of data produced by Likert scales has also been debated. Hayes (2000) states that, technically, a five point scale item does not qualify as a Likert scale unless its results are normally distributed. Other types of distribution (e.g. binomial) are indicative of nominal or ordinal data. Ryan (1995), on the other hand, states that within tourism research, scores on a Likert scale are frequently not normally distributed, particularly in attitudinal research where data tends to be negatively skewed towards the top end

of the scale as tourists are likely to have positive experiences.

Further analysis of the data produced by Likert scales has concluded that it may be reliable when handled as interval data (Moser and Kalton, 1974). It has further been suggested that the distinction between ordinal and interval level data cannot always be clearly defined (*inter alia* Nunnally, 1978). Certainly within the tourism literature there is a strong precedent for treating Likert scales as interval level data (see Ryan and Garland, 1999). Furthermore, Smith (1995) claims that they are the most frequently used scale in tourism research. Within the literature on tourism research Ryan (1995) suggests the use of mean scores of Likert scales to order items according to their ratings and numerous studies of tourist behaviour and satisfaction have used this technique (e.g. Heung and Cheng, 2000; Qu *et al.*, 2000; Avgoustis and Achana, 2002). Veal (1997) further cites the fact that Likert scales can be quantified as one of their advantages, although none of the above discusses the validity of this approach.

The construction of Likert scales is of ultimate importance in the decision to treat Likert scale data at the interval level. Responses on attitudinal scales can be indicated graphically or through the use of numbers and/or labels. The researcher must choose between various alternatives, such as the number of possible responses and the inclusion of a neutral option. As Likert scales consist of declarative sentences with response options indicating varying degrees of agreement (DeVellis, 1991), a commonly used set of labels exists, normally ranging from 'very strongly disagree' to 'very strongly agree'. This often is used for a seven point scale. Field (2000) notes that the distance between points on an attitudinal scale should be equal

at all points along the scale. It is therefore essential that this equality of points along the scale be communicated as clearly as possible to the respondent. Garland (1990) concludes that the choice of using labels or numbers for semantic differential scales depends on the nature of the survey sample. Ryan (1995) suggests that for Likert scales, it is possible to combine numerical and labelled scales. The use of numbers alongside labels for each point of the scale strengthens the cause for treating the data as interval level, as responses are represented as a continuum with equally spaced choice options along its length. Given the precedence in the literature and the care taken in constructing the Likert scales in the questionnaire, the data collected from the importance, determinant, performance and overall satisfaction scales will be treated as having been measured at the interval level.

5.2.3 Independence, Homogeneity of Variance and Normal Distribution

As all interview subjects were intercepted individually there is no reason to believe that the assumption of independence has been violated. Homogeneity of variance is normally tested as part of other statistical procedures, for example by using Levene's test for homogeneity of variances. However, prior to undertaking further hypothesis testing on the data, the distribution of the interval level data will be examined below. Where the sample data is normally distributed, the population is typically assumed to also have a normal distribution. If the data is not normally distributed, or any of the other assumptions are not met, for the purpose of hypothesis testing the data should be treated as ordinal and non-parametric statistical tests should be applied.¹

¹ It should be noted that most nonparametric statistical tests also make assumptions, namely independence and underlying continuity. However these assumptions are fewer and weaker than those associated with parametric tests (Siegel, 1956).

5.2.4 Criteria for Normal Distribution

SPSS provides two statistical tests which indicate whether the distribution of a variable is significantly different from that of a normal distribution with the same mean and standard deviation. These are essentially goodness of fit tests which reveal whether the data fits the model, in this case a normal distribution². If the results of the Kolmogorov-Smirnov (K-S) test and Shapiro-Wilk (S-W) test are significant, the null hypothesis that the sample has been drawn from a normally distributed population should be rejected. Thus, a significant result indicates a violation of the assumption that the population has a normal distribution. Of the two tests, S-W is considered to be the more accurate (Field, 2000).

Skewness and kurtosis values for each of the variables are calculated by SPSS. The values themselves are not meaningful; however they can be converted to z scores by dividing by their standard error and, in the case of kurtosis, by taking the square root of the result (Field, 2000)³. At the 95 percent confidence level, the results of these equations are problematic when they exceed 1.96, indicating a significant deviation from a normal distribution, in which skewness and kurtosis should be zero.

As a further indication of whether the data fits the model, SPSS also provides stem and leaf plots and histograms with normal curves. However these show only the distribution of the responses and do not provide any criteria for assuming a normal

² It should be pointed out that both these tests are nonparametric.

³ Hair *et al* (1998) suggest alternative formulae for calculating the significance of skewness and kurtosis values. Both sets of tests will be applied.

distribution. Normal and detrended normal Q-Q plots⁴ show observed values plotted against expected values, although any judgement on the degree to which the distribution is normal remains subjective. Parametric statistical techniques are also sensitive to outliers in the data, thus box plots are used to denote their presence.

All of the variables which have measured at the interval level are explored below and subjected to normality tests. Skewness and kurtosis values are noted and conclusions are drawn as to the appropriate techniques for hypothesis testing with these variables, on the basis of the normality of their distribution, all other assumptions being satisfied.

5.2.5 Distribution of the Importance Scale

As can be discerned from Table 5.1, all K-S test results are highly significant, indicating that the distribution of the sample is significantly different from that of a normal population. The S-W test results are also highly significant, which equally indicates a deviation from a normal distribution. Therefore the assumption of normality is violated in the case of this scale.

Table 5.2 shows further details of the distribution of the interval level data in the importance scale. As can be seen, there is a substantial negative skew on most of the variables, indicating that the majority of responses are at the right-hand side of the normal curve. This is in line with Ryan's (1995) claim that importance scores on a

⁴ These plot the quantiles of a variable's distribution against the quantiles of any of a number of test distributions. Probability plots are used to determine whether the distribution of a variable matches a given distribution.

Likert type scale are often skewed towards the top end in attitudinal research relating to holidays.

Table 5.1 - Tests of Normality: Importance Scale

Variable Label	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
importance of vehicle safety	0.250	245	0.000	0.774	245	0.000
importance of punctuality	0.238	265	0.000	0.832	265	0.000
importance of speed	0.218	263	0.000	0.856	263	0.000
importance of ticket costs	0.283	265	0.000	0.787	265	0.000
importance of parking costs	0.129	217	0.000	0.919	217	0.000
importance of cleanliness of vehicles	0.190	257	0.000	0.911	257	0.000
importance of cleanliness of stops	0.225	256	0.000	0.895	256	0.000
importance of easy ticketing system	0.277	262	0.000	0.800	262	0.000
importance of access to attractions by public transport	0.270	256	0.000	0.762	256	0.000
importance of helpful personnel	0.246	251	0.000	0.791	251	0.000
importance of special public transport pass for tourists	0.241	262	0.000	0.800	262	0.000
importance of effective customer service	0.257	248	0.000	0.813	248	0.000
importance of information about public transport	0.273	261	0.000	0.722	261	0.000
importance of personal security	0.286	260	0.000	0.696	260	0.000
importance of easy parking	0.136	230	0.000	0.909	230	0.000
importance of ease of use	0.247	259	0.000	0.816	259	0.000

Table 5.2 – Distribution of Importance Scale Variables

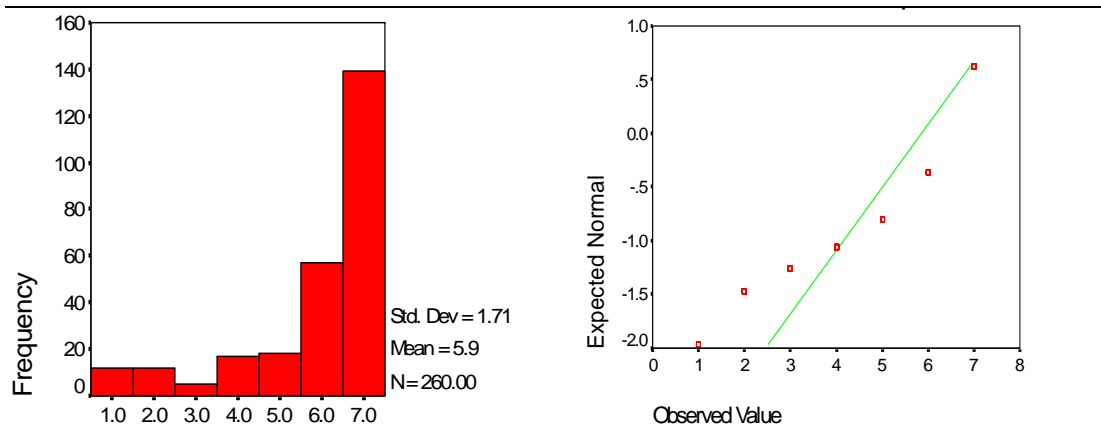
	Mnemonic	Valid	Missing	Mean	SDev	SE	Kurtosis	Skewness	K-S
1	Isafety	245	34	5.45	1.921	0.123	0.256	-1.201	0.250
2	Ipunct	265	14	5.32	1.696	0.104	0.564	-1.163	0.238
3	Ispeed	263	16	5.26	1.588	0.098	0.643	-1.094	0.218
4	Iptcost	265	14	5.55	1.667	0.102	1.084	-1.378	0.283
5	Ipkcost	217	62	4.15	1.944	0.132	-1.056	-0.216	0.129
6	Icleanv	257	22	4.95	2.267	0.940	0.259	-0.744	0.190
7	Icleanst	256	23	5.09	1.906	0.086	0.947	-0.867	0.225
8	Iticket	262	17	5.58	1.578	0.097	1.236	-1.372	0.277
9	Iaccess	256	23	5.68	1.691	0.106	1.186	-1.435	0.270
10	Iperson	251	28	5.66	1.588	0.100	1.385	-1.401	0.246
11	Ipass	262	17	5.48	1.765	0.109	0.618	1.233	0.241
12	Iservice	248	31	5.61	1.533	0.097	1.214	-1.319	0.257
13	Iinfo	261	18	5.75	1.735	0.107	1.604	-1.596	0.273
14	Isecure	260	17	5.86	1.710	0.106	1.662	-1.637	0.286
15	Ipark	230	49	4.42	1.976	0.130	-1.002	-0.340	0.136
16	Ieasyuse	259	20	5.40	1.759	0.109	0.481	-1.175	0.247

N.B. All K-S values are highly significant at 0.000

This tendency towards a negative skew is illustrated by Figure 5.1 which contains a histogram showing the distribution of the most heavily skewed variable ISECURE

(importance of personal security) and the Normal Q-Q Plot for the same variable, showing the difference between expected (normally distributed) and observed values.

Figure 5.1 – Distribution of Variable ISECURE



In addition to most of the variables exhibiting substantial negative skew, many of the variables also have leptokurtic distributions. The most extreme is ISECURE with a kurtosis value of 1.662. Other variables, such as those relating to parking (IPKCOST, IPARK) are showing platokurtic distributions, indicated by negative kurtosis values. Table 5.3 shows the z values for the skewness and kurtosis values calculated using the formulae suggested by Field (2000) and Hair *et al.* (1998). The assumption of normality can be rejected for those variables with z values exceeding ± 1.96 . The only variable in the importance scale for which the z score does not indicate a significant deviation from normality for both skewness and kurtosis (using Field's (2000) formula) is IPKCOST (importance of parking costs).

Table 5.3 – Significance of Kurtosis and Skewness values: Importance Scale

		Field (2000)	Hair <i>et al.</i> (1998)		Field (2000)	Hair <i>et al.</i> (1998)
Variable Label	Kurtosis Statistic	Z Kurtosis	Z Kurtosis	Skewness Statistic	Z Skewness	Z Skewness
Isafety	0.256	0.909	0.871	-1.201	-7.699	-8.175
Ipunct	0.564	1.376	1.920	-1.163	-7.753	-7.916
Ispeed	0.643	1.466	2.188	-1.094	-7.293	-7.447
Iptcost	1.084	1.907	3.689	-1.378	-9.187	-9.380
Ipkcost	-1.056	1.792	-3.594	-0.216	-1.309	-1.470
Icleanv	0.259	0.925	0.881	-0.744	-4.895	-5.064
Icleanst	0.947	1.768	3.223	-0.867	-5.704	-5.902
Iticket	1.236	2.030	4.207	-1.372	-9.147	-9.339
Iaccess	1.186	1.978	4.036	-1.435	-9.441	-9.768
Iperson	1.385	2.127	4.714	-1.401	-9.097	-9.536
Ipass	0.618	1.435	2.103	1.233	8.220	8.393
Iservice	1.214	1.985	4.132	-1.319	-8.510	-8.978
Iinfo	1.604	2.312	5.459	-1.596	-10.570	-10.864
Isecure	1.662	2.350	5.657	-1.637	-10.841	-11.143
Ipark	-1.002	1.770	-3.410	-0.34	-2.125	-2.314
Ieasyuse	0.481	1.262	1.637	-1.175	-7.781	-7.998

5.2.6 Distribution of the Determinant Scale

The tests of normality indicate that the variables in the determinant scale are not normally distributed. Table 5.4 shows that the K-S and S-W test results are all highly significant, indicating that the variables are not normally distributed.

An examination of Table 5.5 shows that, whilst the variables are not as skewed as those in the importance scale, only the variables DRIVE and CHILDREN have normal distributions in terms of skewness with z values of less than +/- 1.96. The variable WALK is highly skewed toward the top end of the distribution with a value of -1.576 (z value 10.577). The kurtosis value of 3.288 (z value 3.322) shows that the same variable has a very peaked distribution.

Table 5.4 - Tests of Normality: Determinant Scale

Variable Label	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
use public transport when travelling with small children	0.209	145	0.000	0.918	145	0.000
find it easy to obtain information for journeys by public transport	0.219	245	0.000	0.930	245	0.000
use public transport when overseas despite potential language difficulties	0.213	253	0.000	0.894	253	0.000
public transport is a safe way to travel	0.221	264	0.000	0.903	264	0.000
use public transport when travelling with heavy bags	0.151	262	0.000	0.946	262	0.000
feel personal safety may be threatened by other passengers	0.191	250	0.000	0.933	250	0.000
like to have information on public transport system at destination before leaving home	0.174	258	0.000	0.919	258	0.000
like to drive in foreign cities	0.152	226	0.000	0.930	226	0.000
like to walk in foreign cities	0.214	266	0.000	0.794	266	0.000
like to cycle in foreign cities	0.149	251	0.000	0.923	251	0.000

Table 5.5 – Distribution of Determinant Scale Variables

	Mnemonic	Valid	Missing	Mean	SDev	SE	Kurtosis	Skewness	K-S
1	Children	145	134	3.98	1.525	0.127	-0.015	-0.286	0.209
2	Easyinfo	245	34	4.62	1.345	0.86	-0.009	-0.371	0.219
3	Language	253	26	5.15	1.400	0.088	0.835	-0.815	0.213
4	Ptsafe	264	15	5.02	1.244	0.077	1.080	-0.669	0.221
5	Luggage	262	17	4.13	1.599	0.099	0.511	-0.055	0.151
6	Threat	250	29	3.55	1.377	0.087	0.016	0.397	0.191
7	Homeinfo	258	21	5.06	1.431	0.089	0.099	-0.609	0.174
8	Drive	226	53	3.93	3.156	0.118	-0.751	-0.129	0.152
9	Walk	266	13	5.83	1.282	0.079	3.288	-1.576	0.214
10	Cycle	251	28	4.70	1.604	0.101	-0.114	-0.558	0.149

N.B. All K-S values are highly significant at 0.000

5.2.7 Distribution of the Performance Scale

The K-S and S-W tests of normality indicate that all of the variables in the performance scale have non-normal distributions, the test results all being highly significant. The deviation from normality is partly explained by the skewness and kurtosis values illustrated in Table 5.6.

The majority of variables are negatively skewed, thus values are clustered towards the high end of the distribution. Table 5.7 shows that, whilst some of the skewness

and kurtosis values are at an acceptable level (z values less than +/- 1.96), others such as ACCINFO and EASYUSE are unacceptably high. Normal Q-Q plots and histograms for the performance scale also indicate that some of the variables do possess the characteristics of a normal distribution, as illustrated by Figure 5.2.

Table 5.6 – Distribution of Performance Scale Variables

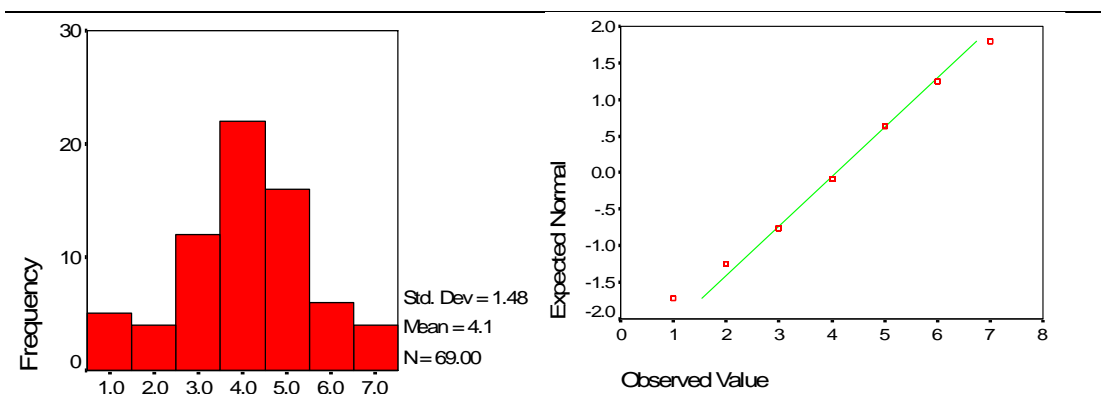
	Mnemonic	Valid	Missing	Mean	SDev	SE	Kurtosis	Skewness	K-S
1	Access	160	119	4.97	1.152	0.091	-0.060	-0.089	0.220
2	Choice	168	111	4.17	1.480	0.114	-0.084	-0.425	0.192
3	Park	86	193	4.10	1.616	0.174	-0.530	0.015	0.130
4	Parksafe	69	210	4.07	1.478	0.178	-0.032	-0.184	0.176
5	Safept	160	119	4.74	1.235	0.098	1.038	-0.574	0.232
6	Ptcost	165	114	4.85	1.364	0.106	0.539	0.116	0.141
7	Parkcost	79	200	4.86	1.517	0.171	0.512	0.346	0.153
8	Perssafe	210	69	4.79	1.416	0.098	0.504	-0.594	0.206
9	Punctual	164	115	4.13	1.688	0.132	-0.720	-0.242	0.167
10	Speed	171	108	4.20	1.482	0.113	-0.422	-0.227	0.150
11	Vclean	178	101	4.38	1.438	0.108	0.022	-0.706	0.239
12	Stclean	175	104	4.08	1.412	0.107	-0.422	-0.267	0.206
13	Ticket	180	99	4.66	1.470	0.110	0.618	-0.913	0.298
14	Person	172	107	4.82	1.251	0.095	0.681	-0.742	0.249
15	Custsrvc	158	121	4.65	1.237	0.098	0.722	-0.606	0.214
16	Accinfo	211	68	5.13	1.411	0.097	1.509	-1.110	0.273
17	Easyuse	180	99	4.93	1.222	0.091	1.636	-0.987	0.266
18	Areaaccs	137	142	4.26	1.416	0.121	-0.080	-0.272	0.215

N.B K-S values are highly significant at <0.003

Figure 5.2 shows the distribution of the variable PARKSAFE (my car is safe when parked in Manchester). Whilst the number of responses to this variable was fairly small (only 69 cases are valid) the distribution shown by the histogram and normal Q-Q plot show the results are fairly normally distributed around a mean of 4. Nonetheless, the K-S and S-W test statistics for this variable are highly significant at 0.000 and 0.003 respectively.

Table 5.7 – Significance of Kurtosis and Skewness Values: Performance Scale

		Field (2000)	Hair <i>et al.</i> (1998)		Field (2000)	Hair <i>et al.</i> (1998)
Variable Label	Kurtosis Statistic	Z Kurtosis	Z Kurtosis	Skewness Statistic	Z Skewness	Z Skewness
Access	-0.06	0.397	-0.204	-0.089	-0.464	-0.606
Choice	-0.084	0.475	-0.286	-0.425	-2.273	-2.893
Park	-0.53	1.015	-1.804	0.015	0.058	0.102
Parksafe	-0.032	0.237	-0.109	-0.184	-0.637	-1.252
Safept	1.038	1.651	3.533	-0.574	-2.990	-3.907
Ptcost	0.539	1.197	1.834	0.116	0.614	0.790
Parkcost	0.512	0.978	1.743	0.346	1.277	2.355
Perssafe	0.504	1.228	1.715	-0.594	-3.536	-4.043
Punctual	-0.72	1.382	-2.450	-0.242	-1.274	-1.647
Speed	-0.422	1.069	-1.436	-0.227	-1.220	-1.545
Vclean	0.022	0.247	0.075	-0.706	-3.879	-4.806
Stclean	-0.422	1.075	-1.436	-0.267	-1.451	-1.817
Ticket	0.618	1.310	2.103	-0.913	-5.044	-6.215
Person	0.681	1.360	2.318	-0.742	-4.011	-5.051
Custsrvc	0.722	1.371	2.457	-0.606	-3.140	-4.125
Accinfo	1.509	2.129	5.136	-1.11	-6.647	-7.556
Easyuse	1.636	2.132	5.568	-0.987	-5.453	-6.718
Areaaccs	-0.08	0.441	-0.272	-0.272	-1.314	-1.851

Figure 5.2 – Distribution of Variable PARKSAFE

5.2.8 Distribution of the Overall Satisfaction Variables

Both the K-S tests and S-W tests for all the variables in the overall satisfaction scale had highly significant results. As can be seen from Table 5.8, there is considerable negative skew on all the variables, indicative of satisfaction levels clustered around the high end of the Likert scale. All of the z scores for skewness are greater than +/-

1.96, indicating that the variables are significantly different from a normal distribution in this respect. Similarly, many of the variables are showing significantly leptokurtic distributions. Thus, assumptions of normality are violated in respect of all the variables in Table 5.8.

Table 5.8 – Distribution of Overall Satisfaction Scale Variables

	Mnemonic	Valid	Missing	Mean	SDev	SE	Kurtosis	Skewness	K-S
1	Sdest	253	26	5.10	1.166	0.073	0.636	-0.769	0.253
2	Sbus	130	149	4.85	1.330	0.117	1.382	-1.153	0.275
3	Stram	70	209	5.01	1.291	0.154	1.881	-1.234	0.238
4	Strain	103	176	4.58	1.600	0.158	-0.161	-0.797	0.263
5	Likebus	132	147	5.48	1.367	0.119	0.885	-1.043	0.202
6	Liketram	97	182	5.39	1.335	0.136	2.186	-1.265	0.212
7	Liketrai	123	156	5.31	1.421	0.128	1.780	-1.208	0.211

N.B. All K-S values are highly significant at 0.000

5.2.9 Conclusions on Suitability of Data for Parametric Testing

The use of parametric statistical techniques is preferred where all of the assumptions of the above tests are met as better use is made of the information available from interval level data. Parametric techniques take advantage of interval level data to measure precise numerical proportions of total variability, making them more powerful (Greene and D'Oliveira, 1999). Nonparametric tests calculate probabilities on the basis of rank ordering scores; therefore much of the numerical information is lost. However, Siegel (1956) and Conover (1980) cite several advantages of nonparametric statistical tests, including the fact that they are easier and quicker to apply and require less mathematical knowledge. The most important of these advantages for the data set in question is that exact probabilities can be obtained irrespective of the shape of the population (Siegel, 1956).

Given the advantages of parametric techniques, the decision to use nonparametric techniques should be taken on the basis of non-fulfilment of the requirements for applying parametric tests. None of the variables discussed above fits the model of a normal distribution in respect of the results of the K-S and S-W tests. In addition, the majority of variables are skewed and many show leptokurtic distributions. The tendency towards negative skew in this type of research has already been discussed. Tabachnick and Fidell (1996) indicate that skewness and kurtosis make little difference with samples of more than 200 cases. Indeed, it is not uncommon for studies to employ parametric statistical tests, despite a non-normal distribution in respect of skewness. Nonetheless, the failure to fit the model, the deviations from a normal distribution indicated by the histograms and normal Q-Q plots and the fact that many of the variables have outliers indicate that the use of non-parametric statistical tests is preferable for the interval level data in the data set.

The principal tests which were employed for the data set are therefore the Mann-Whitney and Kruskal-Wallis between groups tests which compare two or more groups of cases on one continuous variable. The Mann-Whitney test is the non-parametric alternative to the independent samples t-test and the Kruskal-Wallis test is equivalent to a one-way analysis of variance by ranks. It tests the null hypothesis that multiple independent samples come from the same population. Unlike the t-test and ANOVA, the Mann-Whitney and Kruskal-Wallis tests do not assume normality, and can be used to test ordinal variables. A non-parametric alternative to Pearson's product-moment correlation also exists in the form of Spearman's rank order correlation (ρ).

5.3 Empirical Findings of the Research

The following section presents the results of mainly bivariate and multivariate tests on the data collected from the primary survey. The section commences with a description of the modes of travel selected and employed by overseas visitors to Greater Manchester and an investigation of differences between groups. In the subsequent section the interval level data is investigated to examine the role of personal and system factors in mode of transport choice. Again, any differences between groups are examined. An importance-performance analysis is carried out on the system factors using the importance and performance scales. Finally PCA and regression techniques are employed to investigate underlying dimensions among the system factors and the relationship between these factors and overall satisfaction with Manchester's public transport system and Manchester as a visitor destination.

5.3.1 Overseas Visitors Travel To and Around Greater Manchester

Due to its proximity to the UK's third largest international airport and its distance from major ports, it was anticipated that overseas visitors to Greater Manchester would mainly fall into the category of captive public transport users as defined by Hovell *et al.* (1975). Figure 5.3 illustrates that the vast majority of overseas visitors to Greater Manchester (87 percent) arrived in the UK by air with only three percent of visitors arriving by car. When asked whether they had a car at their disposal during their stay in Greater Manchester, 75.2 percent of respondents said no. Thus, whilst a minority of visitors had either hired a car during their stay or had at their disposal the car of a friend or relative, almost two thirds can be classified as captive public transport users.

Respondents were further asked to provide information on the modes of transport they had used during their stay. Table 5.9 shows the percentage of visitors who had used the various modes of transport available in Greater Manchester during their stay. More respondents had used the bus than any other form of transport. All of the modes of public transport (bus, train and tram) had been used by more respondents than private modes (car and coach). This confirms the fact that public transport is an important means of travel for overseas visitors around Manchester and thus awards importance to the study of overseas visitors' use of public transport and the factors affecting public transport SQ from an overseas visitor perspective.

Figure 5.3 – Mode of Arrival in United Kingdom

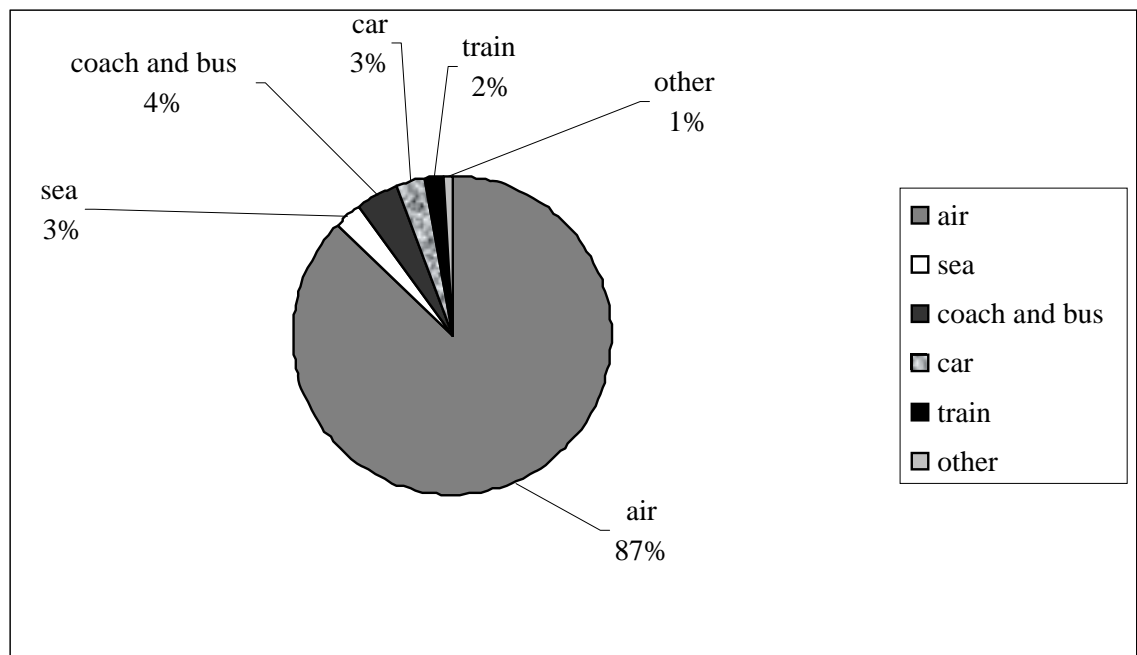


Table 5.9 - Mode of Transport Used by Overseas Visitors to Greater Manchester During Stay

Mode of Transport	Percentage of Overseas Visitors Having Used Mode of Transport
Bus	28.7
Walking	27.6
Train	19.1
Metrolink (Tram)	12.6
Own car	11.4
Taxi	6.8
Hire Car	3.8
Private Coach	3.7
Other	2.6
Cycling	2.1

N.B. Multiple response. Total is greater than 100 percent.

The fact that only 3 percent of visitors arrived in the UK by car and yet 11.4 percent have used their own car for travel around Manchester indicates, as mentioned above, that some visitors rely on transport provided by friends and relatives. It is likely that this will apply mainly to VFR visitors. However, due to the way in which the data was collected, it is not possible to establish whether there were differences between groups according to purpose of visit with regard to mode of transport used.

As noted in Chapter 2, Haywood and Muller suggest that ‘ease of finding and reaching places within the city’ and ‘pleasurability of walking or strolling about the city’ (1988:456) are important variables in urban visitors’ assessment of the quality of the urban tourism experience. However, in the case of Greater Manchester, more visitors have used the bus to travel around the city than have walked. There are several possible explanations for this. Firstly, just over 40 percent of respondents were lodging with friends and family during their stay⁵. These respondents are therefore likely to have been staying outside of the city centre and using bus, train

and tram to travel in and out of the centre. By contrast, for travel within the city centre, a much greater percentage of respondents had walked than had used other modes of transport (see Table 5.10). The remarks of Haywood and Muller (1988) are therefore substantiated.

Tourists are most visible where they are concentrated in large numbers, with the result that destination management and planning for tourist activity is most heavily focussed on the city centre, where the majority of tourist activity normally takes place. However, the above results demonstrate that, for the case of transport planning for visitors to a city, consideration must equally be given to patterns of visitor behaviour outside the city centre. This is particularly true for cities such as Manchester where there are a large number of VFR visitors and important attractions, such as the Manchester United football ground at Trafford and Salford Quays, located outside the city centre.

Table 5.10 - Mode of Travel Around the City Centre by Overseas Visitors to Greater Manchester During Stay

Mode of Transport	Percentage of Overseas Visitors Having Used Mode of Transport
Walking	84.5
Bus	36.5
Train	18.5
Metrolink (Tram)	17.0
Taxi	11.4
Own car	11.1
Private Coach	4.4
Hire Car	4.1
Cycling	2.6
Other	1.8

N.B. Multiple response. Total is greater than 100 percent.

⁵ A greater percentage of respondents stated that they were lodging with friends and family (40.4 percent) than claimed that visiting friends and relatives was the main purpose of their journey (25.2 percent). At the same time, not all VFR visitors were actually lodging with friends and family.

5.3.2 Personal Factors Affecting the Use of Public Transport – An Overseas Visitor Perspective

Analysis of the data obtained from interviews revealed that personal factors were of greater importance to overseas visitors in mode of transport choice than external factors, which were only considered in relation to the system factors. The determinant scale contains a set of variables, drawn from the interview data, which measure respondents' personal attitude towards (mainly public) transport at overseas destinations. An analysis of the ratings on the determinant scale (see Table 5.11) indicates to what extent the personal factors elicited from the interview data apply to the wider population of overseas visitors to Greater Manchester. The range of personal factors affecting the use of public transport is very wide (e.g. health, disposable income, mood), thus the variables in the determinant scale are restricted to those which emerged from the interviews and are considered to be generic to overseas visitors. Differences in attitude will, however, be explored between socio demographic groups and by purpose of visit by means of non-parametric testing.

Table 5.11 - Overseas Visitors' Ratings: Determinant Scale

Determinant Variable	Mean	Standard Error	Standard Deviation
like to walk in foreign cities	5.83	.08	1.282
use public transport when overseas despite potential language difficulties	5.15	.09	1.400
like to have information on public transport system at destination before leaving home	5.06	.09	1.431
public transport is a safe way to travel	5.02	.08	1.244
like to cycle in foreign cities	4.70	.10	1.604
find it easy to obtain information for journeys by public transport	4.62	.09	1.345
use public transport when travelling with heavy bags	4.13	.10	1.599
use public transport when travelling with small children	3.98	.13	1.525
like to drive in foreign cities	3.93	.12	1.776
feel personal safety may be threatened by other passengers	3.55	.09	1.377

Respondents were asked to state, on a seven point Likert scale, to what extent they agreed with the statements in Table 5.11. The appeal of walking as a means of discovering an overseas destination is confirmed by above results. The mean score on the variable ‘like to walk in cities’ indicates that respondents, on average, agree quite strongly with this statement. Furthermore, the standard deviation indicates less variation in the responses to this question than in most other variables. The importance of public transport as a means of travel around overseas destinations is also confirmed by the fact that respondents agreed they would use public transport despite language difficulties and generally agree that public transport is a safe way to travel around an overseas destination.

The average score of 3.93 on the variable ‘like to drive in foreign cities’ demonstrates an unwillingness to use the private car at overseas urban destinations. Lack of local knowledge, anxiety and a desire to avoid congestion may be contributing factors to this result. There may be also be a particular unwillingness among overseas visitors to drive within the UK due to the system of driving on the left side of the road. Given the above preferences, it is important to facilitate access around the destination by means other than the private car.

Whilst interview respondents had indicated that travelling with small children or heavy bags were factors which would mitigate against the use of public transport, the mean responses to these two variables are located around the middle of the Likert scale, suggesting that neither of these two factors are major variables in the decision to use public transport. A further interesting feature of the responses to the statement ‘I use public transport when travelling with small children’ is that 45.2 percent of

respondents selected the non-response option ‘no opinion, compared to 3.2 percent for the variable ‘I use public transport when travelling with heavy bags’. This may be a validation of the inclusion of the non-response option as advocated by Ryan and Garland (1999) since respondents who do not have children may have selected this option on the basis that they genuinely have no opinion.

The issue of safety on board public transport is an important one. Respondents agreed (although not strongly) that public transport is a safe way to travel, however they did not conclusively disagree that their personal safety is threatened by other passenger at overseas destinations. Whilst the first of these two variables can be understood to include both personal and vehicle safety, the latter clearly refers only to personal safety. Thus a possible conclusion is that public transport vehicles are perceived as safe, but there is a potential threat from other passengers. The perceived threat to personal safety on board public transport is an interesting case, since it could be regarded as an external factor (behaviour of other users at the destination) affecting public transport use. However, it is the *perception* of risk on the part of the visitor (which may be greater at overseas destinations due to anxiety about travelling in a foreign city or differences in what is considered acceptable behaviour on board public transport) that potentially has the greatest impact on the decision to use public transport. Thus the variable must be considered a personal factor affecting modal choice.

To reiterate, it should be noted that visitor opinions on the attributes included in the determinant scale appear to behave in the manner predicted by the interview data and the literature review. Visitors like to walk in foreign cities and prefer not to drive.

They are willing to use public transport despite language difficulties but prefer to have information in advance. Nor are they strongly deterred from using public transport by the fact that they may be carrying luggage or be accompanied by children. However, the levels of agreement or disagreement are, in several cases, less than conclusive and the standard deviations quite high, which suggests that there is a large amount of variation in opinion, as would be expected across personal factors. Although public transport is revealed by these results to be an acceptable mode of transport at overseas destinations, the validity of a generic set of personal factors affecting overseas visitors' use of public transport is questionable. This will be studied in more detail below by means of PCA.

Tests were conducted to investigate the presence of differences between groups on all the variables in the determinant scale. Although there was no reason to believe there would be differences for the majority of variables, the tests were able to be carried out by computer in a very short period of time, which allowed the researcher to rule out the presence of significant results which may otherwise have been overlooked. The variable relating to personal safety on board produced the only difference between the gender groups significant at the 95 percent confidence level ($U=5789$, $p=0.017$). The mean rank on this variable was 111.65 for males and 132.68 for females, indicating that females were significantly more likely than males to agree that they felt a threat to their personal safety on board public transport. The same variable was also the only one on which a statistically significant difference was found between the age groups in the sample, using the Kruskal-Wallis test for K independent samples, $\chi^2=16.012$, (5df, $N=242$) $p=0.007$. Table 5.12 shows that

younger age groups had produced higher scores on the variable than older age groups⁶.

Table 5.12 - Mean Ranks on Variable ‘Feel Personal Safety May be Threatened by Other Passengers’ by Age Group

Variable	Age	N	Mean Rank
feel personal safety may be threatened by other passengers	15-24	84	139.86
	25-34	96	120.88
	35-44	32	96.53
	45 and over	30	98.73
	Total	242	

Likewise, there was a significant difference between occupational groups on this variable $\chi^2=18.186$, (7df, $N=242$) $p=0.011$, with the lower socioeconomic groupings (working class and lowest level of subsistence) showing higher mean ranks on this variable than the upper middle and middle classes (see Table 5.13).

Table 5.13 - Mean Ranks on Variable ‘Feel Personal Safety May be Threatened by Other Passengers’ by Socioeconomic Group

Variable	Occupation	N	Mean Rank
feel personal safety may be threatened by other passengers	upper middle class	6	79.00
	middle class	86	103.20
	lower middle class	30	139.17
	skilled working class	15	129.73
	working class	3	160.50
	lowest level of subsistence	3	206.17
	student	96	130.08
	retired	3	114.83
	Total	242	

⁶ Whilst the one way ANOVA post hoc tests flag up the groups between which statistically significant differences have been found, the results of the Kruskal Wallis only allow judgements to be made on the most likely area of differences on the basis of mean ranks. However, the Mann Whitney test may be used to test for statistically significant differences in the mean ranks between two of the groups where differences are suspected.

Thus, whilst the sample as a whole disagreed that personal safety is threatened by other passengers on public transport, young visitors and those at the lower end of the socioeconomic scale were more likely to agree. These findings are noteworthy since precisely these groups are potentially more reliant on public transport for financial reasons.

With regard to purpose of trip, the only significant between groups difference was found on the variable ‘like to cycle in foreign cities’. The mean rankings of a Kruskal Wallis test, $\chi^2=12.864$, (3df, $N=250$) $p=0.005$, shown in Table 5.14, suggest that respondents who were intercepted on a business visit to Greater Manchester have indicated a lower level of agreement with the statement ‘I like to cycle in foreign cities’ than other types of visitor. Since the question asked respondents to indicate their level of agreement with this statement with regard to any overseas destination, the purpose of trip at the time of interception should not be a differentiating factor between the groups. However, in the case where a respondent normally travels to overseas destinations on business rather than leisure, this may lead them to answer from the perspective of a business visitor. It is notable, however, that there is no difference between the groups on other variables with regard to walking, driving or the use of public transport.

Table 5.14 - Mean Ranks on Variable ‘Like to Cycle in Foreign Cities’ by Purpose of Trip

Variable	Purpose of trip	N	Mean Rank
like to cycle in foreign cities	holiday	113	122.38
	business	22	89.61
	VFR	66	123.00
	other	49	152.16
	Total	250	

5.3.3 The Importance of the Attributes of Public Transport Quality to Overseas Visitors

After a review of the pertinent literature in Chapter 3, it was proposed that factors specific to the overseas visitor (personal factors) and destination specific (external) factors influence modal choice directly, but also indirectly through their effect on the importance rating and perceived performance of attributes of public transport SQ (system factors). One of the principal aims of the research was thus to establish whether the attributes of public transport quality valued by overseas visitors were different from those valued by local users. Furthermore, the interview data revealed that urban visitors consider additional attributes of public transport, such as ease of access to visitor attractions, to be important at overseas destinations. An examination of the importance data allows the wider significance of these variables to overseas visitors to be investigated.

The importance scale comprises fourteen variables relating to public transport which represent the system factors extracted from the interview data. In addition, two variables measuring the importance of parking facilities were included since these had been shown, through analysis of the interview data, to be a factor in mode of transport choice. Respondents were asked to rate the importance of these variables at any overseas destination. The aim of this approach to measuring importance was, as far as possible, to exclude the effect of destination specific (external) factors on importance ratings. In this way, any differences noted between the salient attributes visitors take into account when measuring satisfaction with public transport and those shown to be important to local users within the literature review could be mainly attributed to personal factors generic to the overseas visitor (e.g. lack of local

knowledge, use of public transport for leisure purposes only). In other words, whilst the determinant variables measure the *direct* effect of personal factors on modal choice, the ratings on the variables in the importance scale (the system factors) provide an indication of the *indirect* effect of personal factors specific to overseas visitors on mode of transport choice.

Table 5.15 shows the mean ratings for the variables on the importance scale displayed in order of descending means. Notwithstanding the tendency towards a positive skew with importance ratings on Likert scales, the skewness towards the higher end of the seven point scale on the importance variables (lowest mean = 4.15) implies that the attributes of urban public transport SQ extracted from the interview data are generalisable to the wider population of overseas visitors in Manchester. The fact that the lowest rated variable relating to public transport (cleanliness of vehicles) has a mean almost one scale point above the middle point of the scale in particular confirms the attributes included in the importance and performance scales as valid indicators of public transport quality from an overseas visitor perspective.

Personal safety has the highest mean rating of the scale (5.86), which suggests that, although respondents do not feel that their personal safety is generally threatened by other users at overseas destinations⁷, personal safety is nonetheless an important attribute of public transport quality at overseas destinations. Moreover this result serves to confirm that personal safety has an indirect influence on use of public transport in addition to the direct influence indicated by the results of the determinant scale. As foreseen by the findings from the determinant scale above, a Mann-Whitney test showed there to be a statistically significant difference between

genders with regard to the importance of personal safety ($U=6665$, $p=0.048$) with the mean ranks equal to 134.85 for females and 118.27 for males ($N=250$).

Table 5.15 - Importance of Attributes of System Factors (Attributes of SQ and CS)

Importance Variable	Mean	Standard Error	Standard Deviation
importance of personal safety	5.86	.11	1.710
importance of information about public transport	5.75	.11	1.735
importance of access to attractions by public transport	5.68	.11	1.691
importance of helpful personnel	5.66	.10	1.588
importance of effective customer service	5.61	.10	1.533
importance of easy ticketing system	5.58	.10	1.578
importance of ticket costs	5.55	.10	1.667
importance of special public transport pass for tourists	5.48	.11	1.765
importance of vehicle safety	5.45	.12	1.921
importance of ease of use	5.40	.11	1.759
importance of punctuality	5.32	.10	1.696
importance of speed	5.26	.10	1.588
importance of cleanliness of stops	5.09	.09	1.381
importance of cleanliness of vehicles	4.95	.09	1.506
importance of easy parking	4.42	.13	1.976
importance of parking costs	4.15	.13	1.944

Aside from personal safety, attributes of public transport quality of the greatest importance at overseas destinations include information (5.74) and access to attractions at the destination (5.66). These results substantiate the importance of good, accessible public transport information and the integration of the public transport network with the tourist city, as discussed in the literature review. Furthermore, variables relating to visitors' attitudes to aspects of *public* transport at overseas destinations are rated more highly than those pertaining to *private* transport. Ease of parking and parking costs, whilst scoring an above average mean, nonetheless appear at the bottom of Table 5.15. Thus, the importance of public transport as a means of travel around the destination is substantiated.

⁷ See discussion of determinant scale above.

A comparison of differences in the importance of system factors to overseas visitors and local users is rendered more difficult by the fact that no directly comparable study is available. Many of the studies of public transport SQ and CS reviewed in Chapter 3 have focussed on only one mode of public transport and, in the few cases where the importance of SQ attributes has been measured, the range of attributes is inevitably different to the one used for this study. Furthermore, the indirect effect of external factors on importance ratings, as posited in Chapter 3, means that any comparison must take into account the fact that studies have been conducted in different geographical locations.

Nonetheless, it is possible to identify similarities and differences between the attributes of public transport SQ which are of importance to overseas visitors and local residents. Firstly, it must be stressed that there is evidence to support the hypothesis that overseas visitors apply additional criteria to assessing urban public transport SQ and CS. The attributes emerging from the interview data which relate specifically to visitor use of public transport have been substantiated as important to a wider population of overseas visitors to Greater Manchester. Access to attractions by public transport (mean importance rating 5.68) and a special public transport pass for tourists (mean 5.48) have been shown to be more important to the sample than punctuality and speed, which are among the most commonly measured attributes of public transport SQ and the most important to local users (see Chapter 3).

Reliability of public transport and the availability of information received high importance ratings across the consumer led studies reviewed in Chapter 3 (Swanson *et al.*, 1997; Friman *et al.*, 1998; FaberMaunsell, 1999; Prioni and Hensher, 2000).

Information about public transport was also highly rated in terms of importance by overseas visitors to Manchester. However, of the three main indicators of reliability (frequency, punctuality and waiting time) only one (punctuality) was identified as an attribute of public transport SQ by the interview respondents. Furthermore, punctuality was rated eleventh out of sixteen variables on the importance scale with a mean rating of 5.32, whilst speed was rated twelfth (mean 5.26), suggesting that punctuality and speed are of lesser importance to visitors than to local residents. This may be a product of the high number of leisure visitors in the sample. Moreover, the findings of Prioni and Hensher (2000) suggest that onboard safety, vehicle cleanliness, driver attitude and availability of information make the most significant contribution to overall bus SQ. Whilst safety, helpful personnel and information have also been identified as amongst the most important attributes in Table 5.15, cleanliness of both stations/stops and public transport vehicles is close to the bottom of the table and these attributes are rated lower in terms of importance than all other attributes of public transport quality in the importance scale. This contradicts the hypothesis that higher standards of cleanliness are applied by visitors to a city than by residents.

It has been shown above that punctuality and speed were of lesser importance to overseas visitors to Greater Manchester than has been found to be the case in previous studies of local users. This phenomenon was attributed to the high number of leisure visitors in the sample and the fact that time may be less of a premium for these visitors. In addition, Chapter 3 presented the hypothesis that business visitors to a city would be more likely to have similar perceptions to local users of the importance of attributes of public transport SQ, than to visitors who are using the

city for leisure purposes only. However, Kruskal Wallis tests led to this hypothesis being rejected since, although there are significant differences between groups on this variable, the mean ranks suggest that speed and punctuality are of lesser importance to business visitors than to all other groups (see Tables 5.16 and 5.17). One possible explanation for this phenomenon is that leisure visitors are more reliant on public transport than business visitors. It emerged during the qualitative stage of the research that the business visitors who were interviewed rarely used public transport for business reasons when abroad, relying more heavily on taxis and lifts from colleagues. Therefore respondents who normally travel to foreign cities for business purposes may award less importance to the quality attributes of public transport since they are unlikely to use it.

Table 5.16 - Kruskal Wallis Test Statistics ‘Importance of Speed’ and ‘Importance of Punctuality’ by Purpose of Trip

	importance of punctuality	importance of speed
Chi-Square (χ^2)	11.922	8.552
Degrees of Freedom (df)	3	3
Significance (p)	.008	.036

Table 5.17 - Mean Ranks on Variable ‘Importance of Speed’ and ‘Importance of Punctuality’ by Purpose of Trip

	Purpose of Trip	N	Mean Rank
importance of punctuality	holiday	122	122.91
	business	21	104.81
	VFR	67	137.75
	other	54	158.42
	Total (N)	264	
importance of speed	Holiday	120	123.36
	Business	22	113.73
	VFR	66	132.52
	Other	54	155.58
	Total (N)	262	

5.3.4 The Performance of Greater Manchester’s Public Transport System – An Overseas Visitor Perspective

The performance scale measured the performance of Manchester’s public transport system on the same attributes of public transport SQ (and parking) that are present in the importance scale, although some slight differences exist between the two scales largely because of the difficulty in wording questions related to some attributes. In addition three other variables were included which tested ease of parking, the extent to which visitors perceived that the public transport system had influenced their choice of attractions to visit, and whether certain areas of the city were perceived as inaccessible by overseas visitors as captive public transport users. These latter two variables were drawn from the literature review, rather than the interview data on the basis of suggestions by Ashworth and Tunbridge (1990) and Jansen-Verbeke (1988) that urban tourists’ spatial behaviour may be partly controlled by transport availability and accessibility. The results in Table 5.18 partially support this hypothesis. Although respondents on average agreed that visitors attractions in Manchester are easy to reach by public transport, it was also agreed (although only slightly) that choice of attractions had been influenced by the public transport network (mean 4.17) and that certain areas of Manchester are too difficult to reach (mean 4.97). These results suggest that the public transport system does have some influence on the movement of overseas visitors around the city, which may be expected given that the majority do not have their own means of transport. However, the findings also indicate that, whilst certain areas of the city may be perceived as inaccessible, there is still a general level of satisfaction with the accessibility of visitor attractions by public transport. Thus, the fact that not all areas of the city are perceived as accessible may not have significant bearing on

satisfaction with the destination. The relationship between the performance variables and destination satisfaction will be explored further below, by means of multiple regression analysis.

Table 5.18 - Performance of System Factors (Attributes of SQ and CS)

Performance Variable	N	Mean	Standard Error	Standard Deviation
I am able to find the information needed to make journeys by public transport	211	5.13	.10	1.411
visitor attractions are easy to reach by public transport	160	4.97	.09	1.152
public transport in Manchester is easy to use	180	4.93	.09	1.222
parking in Manchester is expensive	79	4.86	.17	1.517
public transport in Manchester is expensive	165	4.85	.11	1.364
public transport staff are helpful	172	4.82	.10	1.251
I would feel safe travelling alone on public transport in Manchester	210	4.79	.10	1.416
public transport vehicles in Manchester are safe	160	4.74	.10	1.235
it is easy to buy the right ticket for your journey	180	4.66	.11	1.470
any problems or questions I had were dealt with effectively	158	4.65	.10	1.237
the public transport vehicles are clean	178	4.38	.11	1.438
some areas of Greater Manchester which I would like to travel to are too difficult to travel to	137	4.26	.12	1.416
public transport in Manchester is a fast way to travel	171	4.20	.11	1.482
the public transport network has influenced my choice of attractions to visit	168	4.17	.11	1.480
public transport in Manchester arrives on time	164	4.13	.13	1.688
it is easy to park your car in Manchester	86	4.10	.17	1.616
the public transport stations/stops are clean	175	4.08	.11	1.412
my car is safe when parked in Manchester	69	4.07	.18	1.478

The differences in the total number of responses (N) in Table 5.18 can be explained partially by missing responses but mainly by the fact that the non-response option was also coded as a missing response in order to preclude any affect on the mean. This is particularly evident in the case of the three variables relating to parking, on which the majority of respondents had no opinion.

The mean scores on the performance variables are not as high as those recorded on the importance variables (see Table 5.15), however this is a common phenomenon in

this type of research since importance scores are often negatively skewed (Ryan, 1995). The performance scores have a relatively narrow range between 4.07 and 5.13, with only one variable (accessibility of information) scoring above 5. It can therefore be concluded that there is no high degree of satisfaction with the performance of any of the attributes of Greater Manchester's public transport system. By contrast, some level of dissatisfaction is evident, in particular with the cost of public transport in Manchester, although parking is perceived as slightly more expensive than public transport.

The best level of perceived performance is on provision of information (mean 5.13), which was identified by this study and others in the literature review (Swanson *et al.*, 1997; Friman *et al.*, 1998) as an area of considerable importance. However, given the importance of this attribute, a higher level of performance may be considered desirable. The same is true for the variable measuring personal safety on board public transport, which was identified in Table 5.15 as the variable of greatest importance to respondents (importance mean = 5.86), but is not an attribute on which Manchester performs particularly well (performance mean = 4.79). Whilst the majority of respondents agreed that they would feel safe travelling alone on public transport in Manchester (median = 5), again a higher level of performance is likely to be desirable on such an important attribute.

Whilst the determinant scale indicated that women were significantly less likely than men to agree that public transport at overseas destinations is a safe way to travel, in the case of public transport performance in Greater Manchester there was no significant difference on this variable. It is, however, not clear whether this is due to

raised feelings of safety among women, or increased perceptions of danger among men. However, a Kruskal Wallis test found that there is a significant difference on the attribute of personal safety on the basis of how many times respondents have visited Manchester ($\chi^2=11.320$, 4df, $N=210$ $p=0.023$) with mean rankings highest (indicating greater feeling of safety) for first time visitors to the city and lowest for those who had visited more than 6 times. It therefore appears that perceived risk to personal safety when travelling on Manchester’s public transport system increases with frequency of visit, a fact which has the potential to reduce Manchester’s appeal to return visitors.

No between-groups differences were found on the basis of occupation. However, significant differences were found between the age groups with regard to perceptions of the cost of public transport in Greater Manchester ($\chi^2=11.095$, 5df, $N=162$ $p=0.05$). The mean ranks for this variable are reported in Table 5.19 and show that the youngest and oldest age groups are most likely to agree that public transport in Manchester is expensive. This is consistent with expected levels of disposable income across the different age groups, although the number of valid cases within the categories at the upper end of the age spectrum is very small.

Table 5.19 - Mean Ranks on Variable ‘Public Transport in Greater Manchester is Expensive’ by Age

Variable	Age	N	Mean Rank
public transport in Manchester is expensive	15-24	58	89.07
	25-34	68	81.57
	35-44	20	82.65
	45-54	10	43.15
	55-64	5	56.00
	65 and over	1	126.00
	Total	162	

5.3.5 The Importance and Performance of Information

The importance of public transport information to the overseas visitor was highlighted throughout the literature review and therefore requires further mention. The availability of public transport information has been identified as the second most important attribute of public transport SQ at overseas destinations and one on which Manchester is perceived to perform at an above average level. As highlighted in Chapter 3, the inaccessibility of public transport information for overseas visitors at urban tourist destinations has been noted by van der Berg *et al.* (1995). In order to investigate the use of information by overseas visitors to Manchester, respondents were questioned on the range of public transport information sources used in Greater Manchester and their respective usefulness. Table 5.20 shows the number and percentage of respondents who had used the various available information sources. However, it should be noted that the figures relate to all respondents and not only those who had used public transport, therefore, the number of visitors who had used the information sources as a percentage of those who had used public transport may be higher. By the same token, the percentage may be lower as certain respondents may have sought public transport information but ultimately decided against using public transport. Nonetheless, the high percentage of respondents having used the information sources indicates extensive use of public transport information by overseas visitors to Manchester.

Table 5.20 - Public Transport Information Sources Used by Overseas Visitors to Greater Manchester During Stay

Information Source Used During Stay	Number of Respondents Having Used Information Source	Percentage of Respondents Having Used Information Source	Number of Respondents Having Used Information Source as a Percentage of Total Responses
tourist information centre	210	82.4	13.0
local people	193	75.7	12.0
attractions leaflets	187	73.3	11.6
internet	159	62.4	9.9
public transport information leaflets	159	62.4	9.9
public transport information centre	145	56.9	9.0
other tourists	139	54.5	8.6
reception at accommodation	133	52.2	8.3
'Manchester City Guide'	120	47.1	7.5
public transport information line	92	36.1	5.7
'Experience Manchester' booklet	73	28.6	4.5
Total responses (<i>N</i> =255)	1610	631.4	100.0

N.B. Multiple response analysis

Respondents were most likely to have used one of Manchester's TICs to access public transport information. The results confirm anecdotal evidence from discussions with TIC counter staff that overseas visitors use the TIC as a source of public transport information rather than the GMPTE public transport information centre, despite its geographical proximity. Nonetheless, 56.9 percent of visitors claim to have used the public transport information centre. Indeed, given that in total 1610 positive responses were recorded to this question, the indication is that many visitors have utilised more than one source of public transport information in Manchester. The importance of local people in providing public transport information is confirmed by the fact that over three quarters of respondents said they had obtained public transport information from this source. This confirms the findings of GMPTE (1991) and Blackledge (1992) that occasional public transport users largely depend on friends for information and is likely to apply particularly to

VFR visitors.

Significantly, the internet was the fourth most popular public transport information source for overseas visitors to Greater Manchester. This confirms the importance of new technologies in the provision of transport information and also suggests that visitors may be accessing public transport information in advance of their trip, as they may not have convenient access to the internet during their stay. The fact that the determinant variable ‘like to have information on public transport system at destination before leaving home’ has a mean rating of 5.06 on a seven point Likert scale is further evidence for this phenomenon.

Despite containing public transport information guides geared to the visitor, Manchester’s two free tourist information booklets are less well used than most other sources of public transport information and appear towards the bottom of Table 5.20. It was noted in Chapter 3 that these booklets do not provide information on travel times and frequencies, which may partially account for their lack of use. However, visitors are more likely to obtain public transport information from tourist attraction leaflets (which provide very basic information) than from either of these guide books. The GMPTE public transport information line has been used by less than one third of respondents, substantiating the hypothesis that telephone information lines are not perceived to be accessible information sources for overseas visitors. In total, GMPTE operated information sources account for only 24.6 percent of total responses, although GMPTE may have an input into the information provided in the two Manchester guide booklets. There are thus important implications for SQ, as suggested in Chapter 3. Information about public transport has been shown to be an

important attribute of public transport SQ for overseas visitors to Manchester. Public transport information is likely to be judged not only on the basis of availability, but also on accuracy and reliability. Since the public transport authority has direct control over less than one quarter of the information sources which overseas visitors to Manchester use, the quality of public transport information is largely out of their control. There is therefore scope for greater cooperation between the public transport authority and other information providers in order to ensure the accessibility of reliable information.

In order to gain a better picture of overseas visitors' satisfaction with the public transport information sources they have used, respondents were further asked to rate the information sources they had used on a three point scale (not at all useful, quite useful, very useful) with a non-response option. The mean ratings for the various information sources cannot meaningfully be compared as the data was collected at the ordinal level. However, four of the variables have a mode rating of 3 (very useful): internet, public transport information centre, Manchester TIC and local people. Thus, although attractions leaflets were used by a greater overall percentage of visitors, the GMPTE information centre was found to be more useful. This is not an unexpected result as the public transport information quality included in the attractions leaflets is lacking in detail and often of poor quality. None of the variables had a mode of less than 2 (quite useful) which suggests general satisfaction with public transport information sources. However, the fact that incongruities appear to exist between the public transport information that is most readily available to the visitor and that which is of greatest use again recommends greater cooperation between the public transport authority and other information providers.

In addition to investigating the use and usefulness of information sources, the questionnaire also measured the items of public transport information which overseas visitors would require to make a journey by public transport in a foreign city. As stated in the research methodology (Chapter 4), the information items employed for this part of the questionnaire were borrowed from research by Balcombe and Vance (1998) with the aim of comparing information requirements of local users and overseas visitors. Table 5.21 compares the results of this question with data from Balcombe and Vance (1998) showing the percentage of local users who require the items of information to make a journey⁸.

Table 5.21 - Items of Public Transport Information Required to Make Journey: Comparison of Overseas Visitors and Local Users

Type of information required	Percentage of respondents requiring information	
	Local Users New journeys	Overseas Visitors
Departure time	79	91
Bus number	61	78
Boarding point	53	93
Frequency	50	84
Alighting point	48	88
Changing point	41	85
Arrival time	40	81
Fares	39	88
Bus route	39	79
Journey length	25	67
Ultimate destination of bus	19	78

Source: Balcombe and Vance (1998)

The most notable aspect of Table 5.21 is that the percentage of overseas visitors requiring the items of information is higher in the case of every item. This is a clear indication that overseas visitors have a greater requirement for information than local

⁸ Balcombe and Vance (1998) provide data on information required by frequent local users, occasional local users and local users making new journeys. It is hoped, by effecting a comparison with *local users making new* journeys, to identify differences which are due to personal factors generic to the overseas visitor, rather than the fact of making a journey for the first time. Nonetheless, any direct comparison must still be realised with caution, since different data collection procedures have been followed in the two studies.

users when making public transport journeys. Notably, whilst a very high 92.9 percent of overseas visitors require information on where to board public transport, only 53 percent of local users require this information. The large difference is likely to be due to the fact that local users are familiar with public transport nodes at the destination, even if they seldom use them, whereas overseas visitors are unfamiliar with the city as a whole. A similar phenomenon is in evidence in the case of information on ultimate destination of bus. It is also worth mentioning that information on journey length is required by considerably fewer respondents than all other items, potentially reflecting the use of public transport for leisure purposes. However, this variable was also relatively unimportant to local users.

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5.3.6 Importance-Performance Analysis

The above section has discussed the importance of attributes of public transport SQ to overseas visitors and the perceived performance of Greater Manchester's public transport system on these same attributes. Plotting the mean importance ratings against the performance ratings for each attribute on a two dimensional grid, using a technique developed by Martilla and James (1977), presents a graphically simple representation of the strengths and weaknesses of Greater Manchester's public transport system. The resulting grid is displayed as Figure 5.4.⁹

IP analysis is a technique for prioritising attributes, based on measurements of importance and performance, whose applications to SQ and tourism research have been numerous (Oh, 2001). A major advantage of IP analysis is the simplistic presentation of marketing and management implications for decision-makers (Kozak, 2001). The four quadrants of the IP grid represent different management solutions, based on the measures of importance and performance, with each attribute falling into one of four quadrants. With regard to attributes appearing in quadrant A, managers are urged to 'concentrate here' since these attributes are perceived as important, but have obtained below average performance scores. In the case of quadrant B (keep up the good work), attributes have high importance and performance ratings. Quadrant C (low priority) contains attributes which have a low performance rating, but are not of great importance to respondents. Finally,

⁹ Only fifteen attributes have been plotted. This is due to the fact that, at the time of the survey, no special public transport pass for tourists exists in Manchester on which to base a performance measure.

attributes located in quadrant D (possible overkill) are rated high on performance, but have low priority.

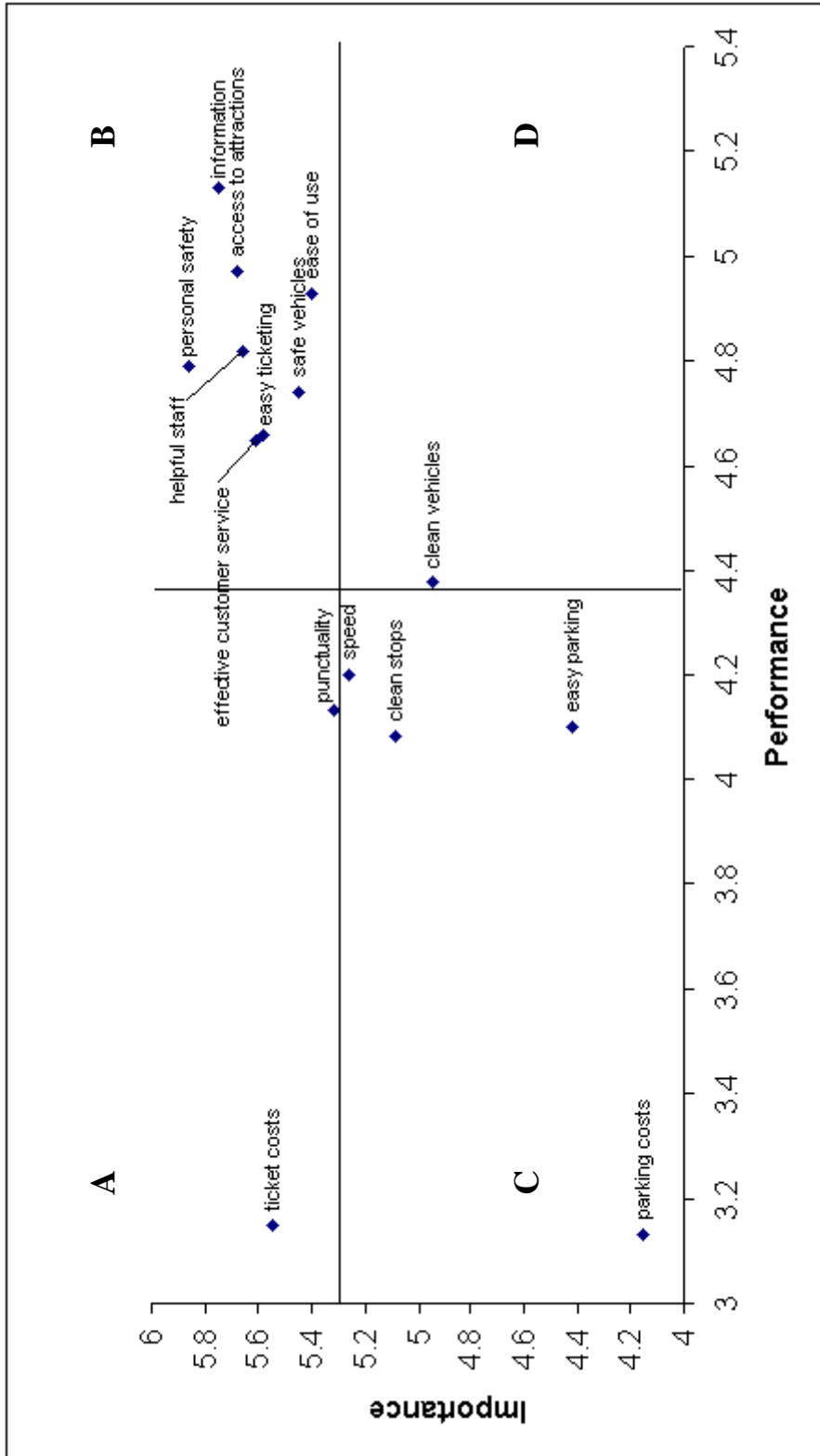
Despite its apparent simplicity, however, some of the aspects of the IP methodology remain problematic. For example, there is no agreement over whether the mean or median values of the attributes should be plotted. Martilla and James (1977) suggest the use of median values where there is doubt that the data is measured at interval level or where the distribution of the data deviates from normal. However, they suggest the use of the mean, where it is consistently close to the median (*ibid*). In the case of the data presented in Figure 5.4, there has been shown to be a non-normal distribution. However, due to the overwhelming preference for plotting the mean, rather than median, values in the tourism literature, the more conventional procedure of plotting the means has been adopted. It should also be noted that negatively worded variables (e.g. public transport in Manchester is expensive) have been reversed to correspond with the other, positively worded, variables.

Likewise, crosshairs on the IP grid have variously been positioned according to the observed mean, derived from the overall mean of the scores on the attributes (Avgoustis and Achana, 2002), the middle point of the Likert scale used for measurement (Evans and Chon, 1989) and arbitrarily (Go and Zhang, 1997). Oh (2001:625) recommends that the middle point of the measurement scale be used, although she does not rule out the use of observed means ‘as a special case’. The decision was taken to use the observed means of the importance and performance scales for the positioning of the crosshairs, due to the precedent in the literature, however the fact that the importance variables are highly negatively skewed will be

taken into account when interpreting the IP grid. Whilst it is not the purpose of this section to present an analysis of the validity of IP analysis, criticisms and shortcomings of the methodology presented by Oh (2001) have been noted.

It is encouraging to note that the majority of attributes (eight from fifteen) fall into the category ‘keep up the good work’. Furthermore, were the vertical crosshair to be shifted slightly to the left to reflect the middle point of the performance scale, as recommended by Oh (2001), all but two variables would be shown to be performing adequately, with those in the D quadrant performing more than adequately, given their low priority. It is with regard to the cost of transport in Manchester that measures are most required to increase visitor satisfaction. Thus cost may be considered the principal barrier to public transport use for visitors to Greater Manchester. Whilst parking costs are also perceived as expensive, they are of low priority to respondents relative to the other attributes in the scale, possibly due to the fact that the majority of overseas visitors are captive public transport users. Nonetheless respondents’ average rating of the importance of parking costs (4.15) is above the middle point of the importance measurement scale, indicating that this may also be an area where attention is required. However, there is greater evidence of dissatisfaction with the cost of public transport tickets due to the larger gap between importance and performance. It is therefore primarily on this attribute that management must focus in order to improve customer satisfaction.

Figure 5.4 – Importance Performance Analysis of Attributes of Greater Manchester’s Public Transport System: An Overseas Visitor Perspective



A = Concentrate here B = Keep up the Good Work C = Low Priority D = Possible Overkill

5.3.7 Overall Satisfaction Scales

Levels of overall satisfaction with Manchester’s three modes of public transport were measured on a seven point Likert scale (extremely unsatisfied through extremely satisfied). The results presented in Table 5.22 illustrate that whilst respondents were, on average, satisfied with all three modes of public transport, levels of satisfaction with the Metrolink were highest, followed by bus and lastly train. This result was anticipated due to the modern image and user-friendly nature of the Manchester Metrolink. However, it should be noted that, whilst travel by tram elicited greater levels of satisfaction from respondents, it was used by fewer visitors than the bus and train (see Tables 5.9 and 5.10). It has been shown that respondents feel public transport in Manchester is overpriced. Since the Metrolink is the most expensive of Manchester’s three modes of public transport, there may consequently be reluctance to use this mode, despite the fact that it generates greater levels of satisfaction among users. However, the Metrolink’s limited route coverage is almost certainly also a factor in the level of usage.

Table 5.22 - Overall Satisfaction with Public Transport Modes

Variable	N	Mean	Standard Error	Standard Deviation
overall level of satisfaction with tram	70	5.01	.15	1.291
overall level of satisfaction with bus	130	4.85	.12	1.330
overall level of satisfaction with train	103	4.58	.16	1.600

Two public transport policy implications are suggested by the above findings. Firstly, the extension of the Metrolink to cover a wider area of Greater Manchester (for which plans are in place) may lead to greater levels of satisfaction with Manchester’s public transport system, particularly if travel is offered at a price more

agreeable to the visitor. Secondly, consideration should be given to improving the performance of bus and train travel for overseas visitors. However, a more in-depth study of how the attributes of public transport SQ are rated across the three modes of public transport would be necessary to inform the latter policy.

Overall satisfaction with Manchester as a visitor destination was measured on the same scale as overall satisfaction with the modes of public transport. The mean score on this variable was 5.10, indicating that overseas visitors to Greater Manchester are, on average, satisfied with Manchester as a visitor destination. A more detailed discussion of the relationship between overall satisfaction with the public transport network and overall destination satisfaction will be investigated below by means of multiple regression analysis (see regression Hypothesis 1 in section 5.3.18 below).

5.3.8 Future Use of Public Transport in Manchester

Additionally, visitors' likelihood of using the three available public transport modes on future visits to Manchester was measured on a seven point Likert scale (extremely unlikely through extremely likely). The mean scores on each variable are presented in Table 5.23.

Table 5.23 - Likelihood of Using Public Transport Modes on Future Visits

Variable	N	Mean	Standard Error	Standard Deviation
how likely to use bus on future visits	132	5.48	.12	1.367
how likely to use tram on future visits	97	5.39	.14	1.335
how likely to use train on future visits	123	5.31	.13	1.421

Whilst the tram was the mode of transport with which respondents were most satisfied, the bus is the most likely to be used on future visits. This suggests that extraneous factors are exercising an influence on future travel behaviour. Moreover, it strengthens the evidence for the direct effect of variables other than system factors (i.e. personal and external factors) on modal choice. In particular, the fact that the Metrolink serves only a limited area of the city is likely to decrease the likelihood of its being used on future trips. The bus, on the other hand, serves all areas of the city, a fact which may explain its position as the mode most likely to be used on future visits. The fact that the train is the least likely form of public transport to be used on future visits may reflect a combination of the lower level of overall satisfaction with this mode and the fact that route coverage is limited in comparison to bus route coverage.

5.3.9 Investigating Underlying Dimensions in the Importance, Performance and Determinant Scales

Given that the thesis explores a relatively uncharted field, an important outcome of the research is the validation of the methodology for exploring factors affecting overseas visitors' use of urban public transport. In Chapters 2 and 3 the factors affecting overseas visitors' choice of mode of transport were refined to a set of public transport quality indicators. The previous section of this chapter has established, *inter alia*, that these attributes are generalisable to the wider population of overseas visitors to Greater Manchester. This stage of the analysis employs more complex statistical techniques to examine the internal consistency of the measurement scales and investigate whether the list of attributes can be reduced to a

smaller set of underlying dimensions of public transport SQ from an overseas visitor perspective.

5.3.10 Outline of Factor Analysis Procedure

Factor analysis is used to identify underlying variables, or factors, that explain the pattern of correlations within a set of observed variables. In this section an exploratory factor analysis of the underlying dimensions of the various scales is performed. First of all, the methods used to test the reliability of the scales and extract the factor solutions are outlined and justified and the factor solutions are then presented for the determinant, importance and performance scales. The internal reliability and unidimensionality of each scale is explored and the data is tested to establish whether it meets the assumptions of factor analysis. A correlation matrix is calculated for each scale and any variables with low correlations are discarded. A factor solution is then extracted and the factors rotated to improve clarity for interpretation purposes. The factors extracted from each scale are ultimately presented, along with an analysis of their reliability and internal consistency.

5.3.11 Criteria for Factor Analysis

Factor analysis using SPSS will find a factor solution for any set of variables. Thus, in order for the factors extracted from the data to be meaningful, it is necessary to perform a variety of tests on the data to ensure their suitability for factor analysis.

Sample size

As with most statistical techniques, size of the sample is important. It is generally agreed that 200 cases is a fair sized sample and 300 cases a good sized sample for factor analysis (Comrey and Lee, 1992; Tabachnick and Fidell, 1996). In this case, the sample of 279 cases can therefore be considered more than adequate. Further guidelines suggest that the sample should have ten times as many subjects as variables. The largest of our scales contains eighteen variables, so using this criterion, the sample size can again be considered adequate. However, in addition to sample size, the weight of factor loadings is also important. As a general rule, the greater the factor loadings are, the more reliable the factor. In cases where a good number of variables are loaded high on a factor, smaller sample size may be adequate (see Field, 2000). In order to test sampling adequacy, the Kaiser-Meyer-Olkin (KMO) statistic is calculated. A test statistic of greater than 0.5 indicates that the sample is 'adequate' but below 0.7 care should be taken (de Vaus, 1996; Field, 2000). For values less than 0.5, additional data may be required.

Missing values

There are a variety of ways of dealing with missing values in factor analysis, but not all of these are available within SPSS. Missing values can be excluded listwise or pairwise. The disadvantage with these methods is that the number of cases can be greatly reduced. An alternative method is to replace missing values by a figure computed from all or some of the other responses to the variable. This figure is normally either the mean (or the mean of a subgroup) for the variable or an integer calculated through regression on the basis of response to other variables and

correlation between the variables. For simplicity and ease of implementation, the method used here is that of replacing missing values with the mean for the variable. Advantages of this approach are that the mean is the best single replacement value (Hair *et al.*, 1998) and the standard deviation is reduced (Cureton and D'Agostino, 1983). However, disadvantages also exist, including the understating of the true variance in the data, distortion of the distribution and reduction of the observed correlation (Hair *et al.*, 1998). As SPSS does not facilitate the calculation of mean values for separate groups within factor analysis, the mean for all valid responses is employed here.

Reliability Analysis

Since a factor solution can generally be found for any set of variables, it is important to ensure that the variables analysed are actually associated, otherwise the solution will be meaningless. Therefore, the inter-item correlation between the variables on the scale should be examined and any variables which do not correlate well with the others in the scale should be excluded from the factor analysis. Bartlett's test of sphericity tests whether the correlation matrix is an identity matrix, where variables are correlating only with themselves. If the test statistic is significant, the hypothesis that the correlation matrix is an identity matrix can be rejected. However Bartlett's test of sphericity is notoriously sensitive and is likely to be significant for large samples, even if correlations are very low (Tabachnick and Fidell, 1996). Therefore, it is useful to employ other, additional statistical techniques.

Unidimensionality can be assessed by an examination of the Pearson correlation coefficient between individual item scores and the scores on the rest of the scale (item-total correlation). The higher the correlation coefficient, the more the item can be claimed to belong to the scale. Where there is a low correlation coefficient, the item should be dropped from the scale before factor analysis is attempted. de Vaus (1996) *inter alia* suggests that items which have an item-total correlation coefficient of less than 0.3 should be removed from the scale. Once all items with low correlation coefficients have been removed, the scale should have unidimensionality. If the scale is truly unidimensional, the results of factor analysis should show all items loading on one variable only.

The internal reliability and unidimensionality of the scales can be assessed using a variety of statistical tests. Cronbach's alpha coefficient is the accepted measure of reliability (internal consistency) for a multi-item scale and is defined as the proportion of a scale's total variance that is attributable to a common source (DeVellis, 1991). However, there is little agreement in the literature on what constitutes an acceptable alpha statistic (Kent, 1999). Nunnally (1978) and de Vaus (1996) suggest that there is internal reliability if the alpha coefficient for the scale is higher than 0.7 but that for important decisions in applied research a minimum alpha coefficient of 0.9 should be sought. However, DeVellis (1991) points out that it is not unusual to see published scales with alpha values of lower than 0.7 and suggests that consideration should be given to shortening scales with alpha values above 0.9. For the purpose of this research an alpha value of 0.7 is considered to imply sufficient internal reliability. At the same time, however, alpha values are related to the number of items in the scale and the average inter-item correlation should also be

noted (Ryan, 1995; Kent, 1999). Furthermore, the alpha value can normally be increased by removing variables with low item-total correlations from the scale.

Multicollinearity and singularity can be tested by checking the determinant of the correlation matrix. This should be greater than 0.00001 (Field, 2000). If it is less than this figure, consideration should be given to removing one or more variables with very high correlations. However, Hair *et al.* (1998) suggest that some degree of multicollinearity is desirable, as the objective of factor analysis is to identify the interrelation between sets of variables.

Method of Extraction

PCA is a commonly used alternative to factor analysis, although the two techniques are similar in terms of what they attempt to produce. The outcome of both of these techniques is a reduction in the number of variables to a set of underlying dimensions (factors) which are common to two or more of the variables. Factor analysis uses a mathematical model to calculate factors, whereas PCA uses a linear technique. The techniques also differ in that PCA analyses the total variance of each variable to calculate factors, whereas factor analysis uses only the common variance. Thus, in PCA unique variance is ignored; the total variance for each variable is one and the total variance for all variables in the scale is equal to the number of variables in the scale.

The advantages of PCA are firstly that it does not require variables to be normally distributed¹⁰ (Ryan, 1995) and secondly that it calculates the relationship between individual variables and components (Field, 2000). PCA is the appropriate strategy where there are no hypotheses about the components (factors) prior to data collection and is a useful exploratory method of revealing the probable number and nature of factors in a set of variables. (Tabachnick and Fidell, 1996). Whilst the dispute in the literature as to the merits of PCA has been duly noted, for the purpose of this research the principal components method will be employed but, rather than *component*, the term *factor* is preferred to describe underlying dimensions extracted from the scales.

Criteria for Extraction of a Factor

In contrast to common factor analysis, the number of factors is not specified prior to extraction by exploratory PCA. It is therefore necessary to set criteria by which factors will be extracted and there are several measures of this. Kaiser's eigenvalue rule uses the principal of extracting factors which explain more variance than one of the original variables (see Nunnally, 1978). It is standard practice in PCA to extract factors which have an eigenvalue greater than one with the remaining factors being disregarded (Goddard and Kirby, 1976; Hair *et al*, 1998). However, Hair *et al* (1998) claim that, where the number of variables is less than 20, this method tends to extract too few factors.

¹⁰ It should be pointed out at this stage that the data described below are not normally distributed. Whilst this does not impede PCA, departure from normality can diminish correlations between variables (Hair *et al*, 1998; Tabachnick and Fidell, 1996).

Scree tests are also produced by SPSS and can be used to make a judgement on the number of factors that should be extracted. It has been mentioned above that PCA used both unique and common variance. The point at which the scree plot begins to straighten out indicates the point at which too much unique variance would be included in a factor. All factors above this ‘elbow’ in the plot qualify for extraction. Hair *et al.* (1998) observe that the scree test criterion often extracts more factors than the eigenvalue rule, as factors with an eigenvalue less than one but above the elbow may be extracted. At the same time, scree plots may be difficult to interpret, where most of the variance is accounted for by a small number of factors and the resulting scree plot begins very steeply.

SPSS by default extracts factors with an eigenvalue greater than one; however, it is wise to also examine the associated scree plot for additional information. Meanwhile, Goddard and Kirby (1976) state that the ultimate test of when to stop extracting factors is the interpretability of the resulting factors.

Factor Loadings and Rotation

The results of factor extraction can be rotated in order to make the solution more transparent to the researcher. Rotation normally takes place using orthogonal (varimax) or oblique techniques. Where factors can be assumed to be independent of one another, varimax and oblique techniques should produce identical results and the factor correlation matrix should be an identity matrix. Where the factors are related, the oblique method of rotation is thought to produce more reliable results. The method of rotation used will be judged for each of the scales.

Factor loadings are the loadings of the individual variables on the factors. A variable is judged to be practically significant to the factor if the loadings are 0.5 or above, however, loadings of 0.3 are considered to meet the minimum acceptable level (Hair *et al*, 1998). A loading of 0.5 indicates that 25 percent of the variance in the variable is accounted for by that factor. A cut off of 0.4 for inclusion of a variable in definition of a factor has been used here (after Field, 2000).

Interpretation and Labelling of Factors

There are several issues to be considered in the interpretation and naming of factors. A useful discussion by Rummel (1970) reviews criteria and approaches for naming factors, distinguishing between descriptive, causal and symbolic approaches. The symbolic approach is of little relevance and will not be discussed here. The descriptive approach should be used where factors are classificatory and names should define each category. The causal approach is relevant where naming of the factor should reflect a common, underlying influence. On a more general level, Rummel (1970) stipulates that importance considerations when naming variables are the need to *communicate* the nature and meaning of the factor to others, the avoidance of *surplus meaning* within a factor (normally due to the mnemonic being too general) and the need to assign names which can be remembered and suggest hypotheses for future testing. Finally the factor should be assigned a name which is indicative of the variables loading on that factor. Variables which have the highest loadings on factors should be awarded more significance in the naming of the factor (Hair *et al*, 1998). The label should represent the underlying dimensions of the factor, as suggested by the variables which load on it.

PCA has been carried out on the importance, determinant and performance scales in the questionnaire. The results of the reliability analysis and the outcome of the PCA are outlined below for each of the scales.

5.3.12 Results of the Reliability Tests and Principal Components Analysis: Importance Scale

The importance scale consists of sixteen variables measuring the importance of aspects of transport networks at urban destinations to overseas visitors. The average score per respondent on all the items in this scale is 86.84 with a standard deviation of 19.96.

Reliability analysis

Cronbach's alpha coefficient for the importance scale is calculated at 0.95 indicating that the scale has internal reliability. The final column of Table 5.25 shows the alpha values for the scale if a variable is deleted. There are no items whose deletion would greatly increase the reliability of the scale. The mean inter-item correlation for the importance scale is 0.58, which also indicates a good level of internal consistency.

The summary statistics for the items on the importance scale in Table 5.24 show further relationships between individual items and the rest of the scale. Two variables are showing a lower than average correlation with the rest of the scale: IPKCOST (importance of parking costs) and IPARK (importance of ease of parking). However, the alpha coefficient would not be increased through the deletion of either of these items, probably due to the fact that the two variables are highly correlated with one another. This can be established from the correlation

matrix. In addition, a high percentage (around 70 percent) of the observed variability in the response to these two items can be explained by the other items (squared multiple correlation). Thus these items will not be removed from the scale. Bartlett's test of sphericity is applied to test whether the correlation matrix is an identity matrix. The value of the test statistic is 3052.89 with 120 degrees of freedom and a high significance level of zero. Therefore the hypothesis that the population correlation matrix is an identity matrix can be rejected. The KMO measure of sampling adequacy can be described as marvellous at 0.934 (Kaiser, 1974). The determinant of the correlation coefficient matrix was calculated at 0.0000002318, which is less than the minimum requisite statistic (0.00001). Consideration was therefore given to removal of one or more of the variables. However, no items had correlation coefficients that were particularly large (0.9 or higher). The degree of multicollinearity between the variables was therefore not thought to be problematic.

Table 5.24 – Item Total Summary Statistics: Importance Scale

	Scale Mean if item deleted	Scale Variance if Item deleted	Corrected Item Total Correlation	Squared Multiple Correlation	Alpha if item deleted
ISAFETY	81.3022	348.3145	0.6714	0.5963	0.9519
IPUNCT	81.3956	349.9642	0.7751	0.7808	0.9495
ISPEED	81.5110	351.0026	0.8145	0.7766	0.9489
IPTCOST	81.1758	350.7866	0.7664	0.6962	0.9497
IPK COST	82.6099	364.5597	0.4048	0.6976	0.9581
ICLEANV	81.8242	355.4606	0.7227	0.7871	0.9506
ICLEANST	81.6593	359.1430	0.7518	0.7972	0.9503
ITICKET	81.1538	350.7939	0.8129	0.7631	0.9489
IACCESS	81.0769	345.6736	0.8252	0.8234	0.9485
IPERSON	81.1264	347.0723	0.8438	0.8331	0.9482
IPASS	81.2582	349.1208	0.7563	0.6594	0.9499
ISERVICE	81.1703	349.5123	0.8250	0.8080	0.9487
IINFO	80.9286	346.4203	0.8356	0.8631	0.9483
ISECURE	80.8681	345.7394	0.8317	0.7959	0.9484
IPARK	82.2637	359.2229	0.4719	0.7383	0.9568
IEASYUSE	81.2857	346.3599	0.8074	0.7278	0.9488

Factor extraction

PCA identified two underlying factors among the sixteen variables in the importance scale. It was felt that an oblique rotation was most appropriate, as the factors were thought to be related. This fact was verified by the component correlation matrix, which showed a correlation coefficient of 0.395 between the two factors. However, in the event, the unrotated solution proved to be clearer and easier to interpret than the rotated solution.

The factors extracted are presented in Table 5.25. All of the sixteen variables were included in the final factor analysis, as there were no grounds for removing any items. The variable with the lowest common variance (52.9 percent) was ISAFETY (importance of vehicle safety). The variable with the highest common variance (83.9 percent) was IINFO (importance of information about public transport). The two factors extracted explained 71.1 percent of the total variance.

It should be clear from Table 5.25 that there is a split between factors of importance relating to public transport (Factor 1) and those relating to the private car (Factor 2). Factor 1 ‘Importance of aspects of public transport’ explained 61.21 percent of the variance, with an eigenvalue of 9.79. Factor 2 ‘Importance of aspects of private transport’, had an eigenvalue of 1.58 and explained 9.88 percent of the variance. Both of the variables relating to private transport also have loadings of between 0.4 and 0.5 on Factor 1. Nonetheless, a cut off point of 0.5 produced a clean solution and the other variables are loading on Factor 1 to a much greater degree.

Table 5.25 – Results of Unrotated Principal Components Analysis on Importance Scale

No.	Factor	Factor loading		Communality
		1	2	
1	Importance of aspects of public transport			
	Importance of information about public transport	0.886		0.839
	Importance of access to attractions by public transport	0.872		0.790
	Importance of personal security	0.871		0.771
	Importance of easy ticketing system	0.849		0.733
	Importance of speed	0.835		0.709
	Importance of helpful personnel	0.829		0.708
	Importance of special public transport pass for tourists	0.828		0.707
	Importance of ticket costs	0.826		0.698
	Importance of ease of use	0.824		0.680
	Importance of punctuality	0.816		0.673
	Importance of effective customer service	0.787		0.646
	Importance of cleanliness of stops	0.775		0.641
	Importance of vehicle safety	0.725		0.617
Importance of cleanliness of vehicles	0.725		0.529	
2	Importance of aspects of private transport			
	Importance of parking costs		0.794	0.810
	Importance of easy parking		0.778	0.825
Eigenvalue		9.79	1.58	
Variance %		61.21	9.88	
Cumulative Variance %		61.21	71.09	
Cronbach's alpha		0.96	0.88	
Factor mean		5.58	4.31	
Number of items		14	2	

It should be noted that Factor 2 consists of only two items. Factors should have at least two, preferably three non-zero loadings (Tabachnick and Fidell, 1996). An oblique rotation of the component matrix showed the two variables concerned with cleanliness (of public transport vehicles and stops) also loading on Factor 2. However, the unrotated solution shown in Table 5.25 is felt to generally correspond with attitudes to transport use. Furthermore, the correlation matrix shows that the two items relating to private transport have a high correlation with each other, but are relatively uncorrelated with other variables, which may indicate that the factor is reliable (Tabachnick and Fidell, 1996). Cronbach's alpha was calculated for both of

the factors, and shows good internal consistency with values of 0.96 for Factor 1 and 0.88 for Factor 2. As can be discerned from Table 5.25, the mean for Factor 2 is considerably lower than Factor 1. This may reflect the greater importance of factors relating to public transport at urban destinations, as illustrated by the mean ratings for the importance scale in the analysis section.

5.3.13 Results of the Reliability Tests and Principal Components Analysis: Determinant Scale

The determinant scale contains ten measures of user related aspects of the decision to use public and private transport at overseas destinations. This scale is designed to measure personal factors affecting transport use at overseas destinations. The average score on the items in this scale is 46.24 with a standard deviation of 7.13. The determinant statistic for the coefficient matrix at 0.323 is acceptable, indicating that multicollinearity is not present.

Reliability Analysis

The value of Cronbach's alpha coefficient for all ten items in the determinant scale is 0.62, which is lower than the recommended level of 0.7. In addition, the mean inter-item correlation is very low at 0.15. An examination of the summary statistics for the scale (Table 5.26) reveals that the variable DRIVE (like to drive in foreign cities) is showing a very low inter-item total correlation and its deletion would increase the alpha value. It is likely that this variable does not belong in the scale and it was therefore removed before undertaking factor analysis. Whilst the variables HOMEINFO and WALK are showing an inter-item total correlation of less than 0.3, the alpha value would not be increased through their deletion, thus they have been

retained. The alpha value for the remaining nine variables is 0.66 and the mean inter-item correlation is still low at 0.18. Furthermore, the correlation matrix is showing low inter-item correlations and some of the significance levels are greater than 0.05. However, the communalities are all greater than 0.3 and the removal of any of the other items would result in a reduced alpha statistic; therefore we proceeded with caution.

Table 5.26 - Item Total Summary Statistics: Determinant Scale

	Scale Mean if item deleted	Scale Variance if Item deleted	Corrected Item Total Correlation	Squared Multiple Correlation	Alpha if item deleted
CHILDREN	42.2764	41.3164	0.3749	0.3120	0.5801
EASYINFO	41.6341	42.6110	0.3515	0.3382	0.5870
LANGUAGE	41.0732	42.4454	0.3088	0.4117	0.5953
PTSAFE	41.3252	40.3524	0.4699	0.3654	0.5600
LUGGAGE	42.0569	41.3000	0.3052	0.3065	0.5965
THREAT	42.5935	42.4236	0.3214	0.3173	0.5926
HOMEINFO	41.0244	44.8601	0.2227	0.1782	0.6135
DRIVE	42.0407	48.1049	0.0074	0.0601	0.6639
WALK	40.4715	44.8578	0.2766	0.3543	0.6033
CYCLE	41.6992	40.6055	0.3436	0.2500	0.5866

Bartlett's test of sphericity is highly significant with a value of 151.61 and 36 degrees of freedom. The KMO statistic of 0.66 is 'mediocre' and caution was therefore taken with the extraction and interpretation of factors.

Factor Extraction

Three factors were extracted, explaining 54.77 percent of the total variance. The component matrix was rotated using the oblique method to allow for some correlation between the factors. The component correlation matrix showed low levels of correlation between the three factors, with Factors 1 and 3 showing the highest level of correlation at 0.18. Varimax rotation was therefore attempted and produced a similar result. However, the pattern matrix of the oblique rotation was cleaner and therefore used for the interpretation. All variables have factor loadings of greater than 0.5 which indicates that they are practically significant. The three factors extracted from the nine variables are shown in Table 5.27.

The concept represented by Factor 1, which accounts for 25.51 percent of the total variance, appears to comprise variables which describe dedicated and habitual use of public transport. The variables loading on Factor 2 also suggest regular and dedicated use of public transport. An interesting difference between these two factors is that whilst Factor 1 suggests willingness to use public transport as a safe way to travel, Factor 2 appears to indicate the necessary use of public transport, which takes place despite determinants such as threats to personal safety or language difficulties. Therefore, if Factor 1 represents ‘confident and willing travel’ Factor 2 can be labelled ‘anxious but necessary travel’.

Table 5.27 – Results of Oblique Rotation of Principal Components Analysis on Determinant Scale

No.	Factor	Factor Loading			Communality
		1	2	3	
1	Confident and willing travel				
	Find it easy to obtain information for journeys by public transport	0.751			0.568
	Use public transport when overseas despite potential language difficulties	0.749			0.628
	Public transport is a safe way to travel	0.544			0.546
2	Anxious but necessary travel				
	Use public transport when travelling with small children		0.764		0.621
	Use public transport when travelling with heavy bags		0.682		0.508
	Feel personal safety may be threatened by other passengers		0.654		0.531
3	Independent travel				
	Like to have information on public transport system at destination before leaving home			0.755	0.624
	Like to walk in foreign cities			0.692	0.588
	Like to cycle in foreign cities			0.511	0.315
Eigenvalue		2.30	1.48	1.15	
Variance %		25.51	16.42	12.84	
Cumulative Variance %		25.51	41.93	54.77	
Cronbach's alpha		0.66	0.65	0.41	
Factor mean		4.96	3.92	5.20	
Number of items		3	3	3	

The implication of the variables loading on Factor 3 is an underlying concept of an independent approach towards travel at a destination. Factor 3 was therefore labelled 'independent travel'. It should be noted that the alpha coefficient for Factor 3 is below the acceptable level. However, an indication of the validity of the factors is the fact that Factors 1 and 3 are shown to be the most highly correlated of the three. From a theoretical standpoint, we would expect this to be the case, as confidence and independence may be related to each other, but not to anxiety. The component correlation matrix shows Factors 1 and 2 (confident and willing travel and anxious but necessary travel) to be unrelated.

5.3.14 Results of the Reliability Tests and Principal Components Analysis: Performance Scale

The performance scale is constructed from eighteen variables measuring overseas visitors' level of satisfaction with attributes of public and private transport SQ in Greater Manchester and, unlike the importance scale, the results are therefore destination specific. However, the variables in this scale correspond to variables in the importance scale. The performance scale mean is 83.87 with a standard deviation of 14.83.

Reliability Analysis

Cronbach's alpha coefficient for the performance scale is 0.9018 and the mean inter-item correlation is 0.33, which indicates that the scale has internal reliability and consistency. As can be seen from Table 5.28, two variables, PARKCOST (parking in Manchester is expensive) and AREAACCS (some areas of Greater Manchester which I would like to travel to are too difficult to reach) should be considered for deletion. Both of these variables have a low correlation (less than 0.3) with the rest of the scale and their deletion would increase the alpha value. However, on closer examination of the correlation matrix, PARKCOST is correlated with several of the other variables and as its deletion only slightly raises the alpha value, it was therefore retained for the initial PCA, however it proved not to load significantly onto any of the factors. Therefore, a further extraction was completed omitting this variable. AREAACCS was also deleted before PCA took place, leaving a total of sixteen variables in the scale.

Barlett's test statistic for the scale was significant at 187.30 with 120 degrees of freedom. The KMO statistic was calculated at 0.74, which suggests that the adequacy of the sample is 'middling'. The determinant of the correlation matrix is greater than the required figure at 0.004621. Since the factors emerging from the importance scale were shown to be related, and the performance scale contains measures of similar items, an oblique rotation was attempted. The component coefficient indeed showed some relationship between some of the factors as can be seen in Table 5.30 below.

Table 5.28 – Item Total Summary Statistics Performance Scale

	Scale Mean if item deleted	Scale Variance if Item deleted	Corrected Item Total Correlation	Squared Multiple Correlation	Alpha if item deleted
ACCESS	78.8065	201.6280	0.4616	0.8963	0.8992
CHOICE	79.0968	0204.2237	0.4630	0.8180	0.8991
PARK	79.3226	188.6258	0.7993	0.8825	0.8890
PARKSAFE	79.5806	190.7183	0.7328	0.8750	0.8910
SAFEPT	79.0968	195.4237	0.6187	0.8866	0.8946
PTCOST	79.2903	207.9462	0.3079	0.8029	0.9030
PARKCOST	78.8710	211.6495	0.2452	0.7918	0.9039
PERSSAFE	79.0645	189.7957	0.6995	0.7929	0.8918
PUNCTUAL	78.9355	191.5957	0.6336	0.8956	0.8939
SPEED	79.0968	192.8903	0.5817	0.8143	0.8957
VCLEAN	79.2258	184.9806	0.7872	0.8931	0.8885
STCLEAN	79.9032	187.6237	0.6849	0.7984	0.8921
TICKET	79.2258	192.1806	0.6857	0.9406	0.8925
PERSON	78.8710	201.0495	0.4662	0.8879	0.8991
CUSTSRVC	79.4516	205.8559	0.3827	0.6844	0.9011
ACCINFO	79.0968	195.2903	0.6090	0.9265	0.8949
EASYUSE	79.4194	193.5849	0.6168	0.8615	0.8945
AREAACCS	79.4516	214.0559	0.0847	0.7117	0.9112

Factor Extraction

Five factors with an eigenvalue of greater than one were extracted using an oblique rotation. These factors explained a total variance of 65.31 percent and are illustrated in Table 5.29. Whilst the main elbow in the scree plot and the number of factors loading on the first two variables indicates that these are more significant than Factors 3, 4 and 5, as a piece of exploratory research it is nonetheless useful to attempt an interpretation of all five factors. Factors 1, 2 and 3 are reliable with high values on the alpha scale, but Factors 4 and 5 are showing alpha values which may indicate that they may not be reliable.

Factor 1 explains 26.81 percent of the total variance and is related to satisfaction with various aspects of the public transport system. Rummel (1970) warns against the danger of applying labels to variables which contain surplus meaning. Thus, rather than focussing on the concept of reliability or satisfaction, both of which could refer to any aspect of the transport network (e.g. information), the variable label should reflect specifically the attributes of safety and speed, or should reflect the fact that the variables loading on this factor measure attributes of the onboard journey experience; the factor is therefore labelled '*journey quality*'.

Factor 2, by contrast, reflects general dissatisfaction with facets of the public transport system. Specifically, the variables loading on this factor (which accounts for 14.36 percent of the total variance) are all related to poor ease of use with regard to information, ticketing and customer service. Thus, this variable relates to '*service*

shortfall, rather than quality of journey since the variables loading on the factor could be argued to be extraneous to the on-board journey experience.

Factor 3 is clearly related to ‘*good parking*’. Whilst there are only two variables loading on this factor, they are both loading strongly and the correlation matrix shows that their correlation with one another is considerably higher than with any of the other variables. Furthermore, the alpha value shows reliability.

The alpha value for Factor 4 is very low at 0.26, however the factor will be interpreted as it is explaining more than 8 percent of the variance. However, the factor is interpreted with caution and on a purely exploratory basis. This factor again reflects the concept of general dissatisfaction. However, whereas Factor 2 represented dissatisfaction with service aspects of the public transport network, this factor suggests discontent with more basic aspects of the system. There are three items contributing to this factor; two of them relate the cleanliness of public transport vehicles and stations/stops, but these variables are not loading very strongly. The other relates to high price and is loading quite strongly (coefficient of 0.845). More than straightforward dissatisfaction with aspects of the public transport network, this factor seems to indicate real displeasure/disgust with very basic aspects of the system (price and cleanliness). However, Hair *et al.* (1998) stress that the degree to which variables load on the factor should be taken into account in naming the factors. Given the high loading of the variable representing cost, Factor 4 was labelled *poor value*.

Table 5.29 – Results of Oblique Rotation of Principal Components Analysis on Performance Scale

No.	Factor	Factor Loading					Communality
		1	2	3	4	5	
1	Journey quality						
	Public transport in Manchester is a fast way to travel	0.825					0.703
	I would feel safe travelling alone on public transport in Manchester	0.778					0.668
	Public transport vehicles in Manchester are safe	0.761					0.616
	Public transport in Manchester arrives on time	0.750					0.639
2	Service shortfall						
	Public transport in Manchester is easy to use		-0.788				0.648
	I am able to find the information I need to make journeys by public transport		-0.771				0.617
	Any problems or questions I had were dealt with effectively		-0.729				0.571
	It is easy to buy the right ticket for your journey		-0.725				0.551
	Public transport staff are helpful		-0.677				0.518
3	Good parking						
	It is easy to park your car in GMcr			0.872			0.778
	My car is safe when parked in Manchester			0.859			0.755
4	Poor value						
	Public transport in GMcr is expensive				0.845		0.697
	The public transport vehicles are clean				-0.595		0.729
	The public transport stops are clean				-0.498		0.567
5	Attractions access						
	The public transport network has influenced my choice of attractions					0.915	0.838
	Visitor attractions are easy to reach by public transport					0.552	0.555
Eigenvalue		4.29	2.30	1.42	1.33	1.11	
Variance %		26.81	14.36	8.85	8.34	6.95	
Cumulative Variance %		26.81	41.17	50.02	58.36	65.31	
Cronbach's alpha		0.85	0.83	0.84	0.26	0.47	
Factor mean		4.44	4.85	4.21	4.38	4.63	
Number of items		4	5	2	3	2	

Factor 5 consists of only two items which are fairly highly correlated with each other ($R^2=0.62$). They reflect an underlying concept which links visitor attractions and

public transport network. The alpha value for this factor is barely acceptable at 0.47, but the factor relates to the underlying hypothesis of the research and therefore should be retained. It has been labelled ‘*attractions access*’.

Table 5.30 - Component Correlation Matrix: Performance Factors

Component	1	2	3	4	5
Journey quality	1.000	-.206	-.107	-7.658E-02	6.057E-02
Service shortfall	-.206	1.000	9.591E-02	.134	-.118
Parking	-.107	9.591E-02	1.000	.122	-.147
Poor value	-7.658E-02	.134	.122	1.000	-.105
Attractions access	6.057E-02	-.118	-.147	-.105	1.000

The component correlation matrix for the factors extracted from the performance scale is shown in Table 5.30. The relations are weak, with the strongest (-0.206) indicating (as would be expected) a negative relationship between service shortfall and journey quality. However, none of the correlations are strong enough to be reliably interpreted.

5.3.15 Underlying Dimensions of Public Transport Performance – An Overseas Visitor Perspective

It is useful to examine the results of the factor analysis of the performance scale in the context of other studies of the dimensions of SQ and public transport satisfaction. The general lack of agreement on the attributes and dimensions of SQ has been noted in Chapter 3. However, two classifications of quality attributes commonly cited and used as benchmarks are Grönroos’ (1984; 1988) dichotomous classification of the attributes of SQ (the ‘what’ and ‘how’ of a service) and the five generic SERVQUAL dimensions established by Zeithaml *et al.* (1990). The results of the factor analysis in Table 5.29 above can therefore be compared with these two studies.

In Chapter 3, two possible classifications of the ‘what’ (the technical attributes) of public transport were noted: firstly, the outcome of the public transport service (i.e. arrival at the desired destination) (Ennew *et al.*, 1993) and, secondly, the tangible attributes of the public transport service, such as vehicles, stations and stops (Ryan, 1995). However, the contribution of technical attributes to the measurement of public transport SQ and public transport satisfaction was questioned. Thus, none of the attributes in the performance scale relate to ‘what’ of public transport SQ. Moreover, the scale is clearly not dichotomous in terms of its underlying dimensions since the percentage of variance explained is reasonably well distributed amongst the five factors in Table 5.29. Therefore, there is no similarity between the factor solution and Grönroos’ (1984; 1988) dichotomous classification of technical and functional attributes.

Parasuraman *et al.* (1988) established five ostensibly generic dimensions of SQ: tangibles, reliability, responsiveness, assurance and empathy. The failure to replicate these dimensions across other service sectors has been discussed in Chapter 3. Nonetheless, some of the SERVQUAL dimensions have been confirmed in subsequent studies within the tourism and public transport fields. For example, Saleh and Ryan’s (1992) study of hotel SQ distinguished factors equivalent to tangibles, assurance and empathy. Additionally, reliability has been found to be the most important dimension of SQ across a range of different services (see Schofield and Fallon, 2001) including the work of Friman *et al.* (1998) on public transport SQ. Furthermore, of the other two dimensions established by Friman *et al.* (1998), employee behaviour has similarities with the SERVQUAL dimension responsiveness, whereas simplicity may be related to assurance but with regard to

access to information rather than employee knowledge and courtesy. A fourth dimension of public transport (design) established in a later study (Friman *et al.*, 2001) roughly equates to the tangible dimension of SERVQUAL (Zeithaml *et al.*, 1990) since it is concerned with the comfort, security and cleanliness of physical equipment and facilities.

Similarities can be observed between the five factor solution presented above and findings of Friman *et al.* (1998). It has been observed that Factor 1 represents the dimension of journey quality. The attributes loading onto this factor, which are concerned with safety, speed and punctuality on board public transport, can be argued to represent both public transport reliability and safety. Punctuality, in particular, has been shown to be an attribute of public transport reliability (Bradley *et al.*, 1989; Friman *et al.*, 1998). Moreover, the results of numerous other studies are confirmed, which have identified reliability as the most important dimension of SQ across a range of services (Schofield and Fallon, 2001).

Safety is not one of the generic dimensions of SERVQUAL, but safety is likely to be of much greater importance in the evaluation of public transport than for other service industries. Nevertheless, the fact that the study by Friman *et al.* (1998) did not identify safety as one of the dimensions of public transport SQ may suggest that its significance here is related to the influence of external factors (i.e. crime) specific to Greater Manchester as a destination. On the other hand the fact that, in addition to personal safety, vehicle safety is also loading strongly onto this factor partially mitigates against this argument.

Factor 2, service shortfall, links closely with the dimension of simplicity (Friman *et al.*, 1998) and confirms the importance of this dimension to the public transport service. As has been noted above, this dimension has similarities with the SERVQUAL assurance dimension, but with the focus less on the role of employees in invoking trust and confidence, and more on passenger confidence provided through simplicity of system design. It should also be noted that, whilst Friman *et al.* (1998) established separate dimensions for employee behaviour and simplicity of information, there is no clear divide between these dimensions in the factor solution above. However, Friman *et al.* (1998) employed a manual, inductive technique for categorising critical incidents, a method which they admit may be unreliable due to its subjectivity.

Factors 3, 4 and 5 above cannot be equated to any of the dimensions of SQ established in previous research. However, this is to be expected of Factors 3 and 5. Factor 3 is concerned with satisfaction with attributes of private, rather than public transport and would therefore be expected to be represented by a separate factor. Meanwhile, Factor 5 represents attributes which are specific to quality of public transport from an overseas visitor perspective and are therefore unlikely to have emerged in any previous research on public transport satisfaction among local users.

5.3.16 Summary of Principal Components Analysis

The PCA has replicated certain aspects of previous studies, in particular the importance of reliability as a generic attribute of SQ. Other SERVQUAL dimensions, however, have not been confirmed. Moreover, differences between the

dimensions of public transport SQ uncovered by the research and those of previous studies may be attributed to the differences in methods used. With the exception of Factor 4, which has a very low alpha value and is interpreted with caution, other dimensions revealed by the research are largely consistent both with previous research, and with the hypothesis that public transport SQ, viewed from an overseas visitor perspective, has at least one additional dimension.

In the following section, a series of multiple regression analyses will be conducted using the factors above extracted from the performance and determinant scales in order to investigate the major hypotheses of the research, i.e. the relationship between personal (determinant) factors, system (performance) factors and overall satisfaction with Greater Manchester as a visitor destination and with its public transport system.

5.3.17 Multiple Regression Analysis

Regression analysis is a statistical technique that estimates the predictive power of independent (predictor) variables on a dependent (outcome) variable. In this section, multiple regression analysis is performed to test a series of hypotheses. Firstly, the assumptions of regression are clarified. The approach to variable selection and the advantages and disadvantages of the stepwise method of estimation to be used here are then discussed. Finally, each hypothesis is outlined and a regression analysis performed to investigate the degree and character of the relationship between the outcome and predictor variables.

Assumptions of Multiple Regression Analysis

There are a substantial number of assumptions which must be checked both before and after multiple regression analysis is undertaken. Generally speaking, assumptions which should be considered when undertaking regression analysis serve to determine whether the model fits the observed data and whether the model is generalisable (Field, 2000). Assumptions of multiple regression analysis apply both to the individual predictor and outcome variables and to the regression variate as a whole. It is therefore necessary to test assumptions prior to analysis on the individual predictor and outcome variables. In addition assumptions of the regression variate itself must be tested after the model has been estimated. Outliers, residuals and influential cases affect the fit of the model to the observed data and should be tested for. Furthermore, the generalisability of the model may be influenced by a range of assumptions (Field, 2000).

The assumptions of multiple regression analysis relating to the individual predictor and outcome variables are similar to those which apply to parametric tests in general. The adherence of the importance, determinant, performance and overall satisfaction scales to these assumptions has been tested at the very beginning of this chapter. It is therefore only necessary at this point to investigate the degree of adherence of the ‘new’ variables, i.e. the factors extracted from the PCA and the case mean variables calculated for the purpose of regression analysis, to the aforementioned assumptions. A discussion of this process can be found in Appendix 10.

Figure 5.5 outlines the assumptions which are applied to the regression variate and the criteria which will be used for testing these assumptions. It is important that these assumptions are met if the regression model is to be used to draw conclusions about the population. These assumptions will be tested for each regression analysis, once the regression model has been calculated. More detailed discussion of the assumptions may be carried out where appropriate, but will be largely limited to instances where the assumptions are thought to have been violated by the variate.

Approach to variable selection

The importance of selecting predictor and outcome variables on conceptual or theoretical grounds is stressed by Field (2000) and Hair *et al* (1998). In the absence of prior research into the relationship between public transport use and destination satisfaction, the multiple regression analysis undertaken here is purely exploratory; thus both outcome and potential predictor variables were selected on the basis of the researcher's hypotheses and a sequential, or stepwise, search method was used to select the independent variables included in the model (after Wright, 1997). Such methods use mathematical criteria in selecting the independent variables to optimise prediction (Tabachnick and Fidell, 1996).

Advantages and disadvantages of the stepwise method of regression analysis

Stepwise estimation assesses variables for their contribution to predicting the outcome variable. Variables are added or deleted on the basis of their relative contribution to predicting the outcome variable. Each independent variable is considered for inclusion in the regression equation and the variable making the

largest contribution is added first. Further independent variables are added on the basis of the size of their contribution to the remaining (semi-partial) correlation with the outcome variable (Tabachnick and Fidell, 1996).

Figure 5.5 – Assumptions of Multiple Regression Analysis Relating to the Regression Variate

Assumptions	Criteria for Testing
Independent errors	Standardised residuals have been plotted for each regression analysis to test the assumption of independent errors. A Durbin-Watson statistic between 1 and 3 indicates independence of errors (Field, 2000).
Normal distribution of errors around a mean of zero	Histograms and normal P-P plots of the residuals have been examined for any deviation from a normal distribution. Casewise diagnostics have been performed to test for outliers and cases which are exerting undue influence on the regression model using the following criteria: <ul style="list-style-type: none"> • No more than 5 percent of standardised residuals should be less than -2 or greater than 2. • A Cook's distance statistic of greater than 1 indicates that a case is exerting undue influence on the model. • Cases which have a leverage statistic of greater than twice the average leverage value may be exerting undue influence on the model. • A Mahalanobis distance statistic greater than 15 may indicate an influential case.
Linearity of the relationships measured	Partial regression plots have been examined in each instance to check for the presence of non-linear relationships.
No perfect multicollinearity	The use of factors as predictor variables greatly reduces the possibility of collinearity. Simple correlations between the predictor variables have been checked using a correlation matrix to detect the presence of high correlations between the predictor variables. Ideally, the correlation matrix should show high correlations between the predictor variables and the outcome variable, but low correlations between the predictor variables themselves. The Tolerance and VIF statistics also give an indication of collinearity in the data. A VIF statistic of greater than 1 may indicate bias in the regression (Bowerman and O'Connell, 1990). A Tolerance statistic below 0.2 indicates collinearity in the data (Menard, 1995).
Predictors uncorrelated with external variables	Two factors from the performance scale were excluded from the factor analysis due to low correlations with other variables in a reliability analysis. Whilst it cannot be guaranteed that the predictor variables are uncorrelated with external variables, it should be noted that the predictor variables have been chosen on the basis that the research is exploratory.
Homoscedasticity of error terms	Partial regression plots have been examined for each regression variate to check for the funnelling effect which may indicate the presence of heteroscedasticity.

List of assumptions adapted from Tabachnick and Fidell (1996); Hair *et al.* (1998); Field (2000).

5.3.18 Results of Multiple Regression Analysis

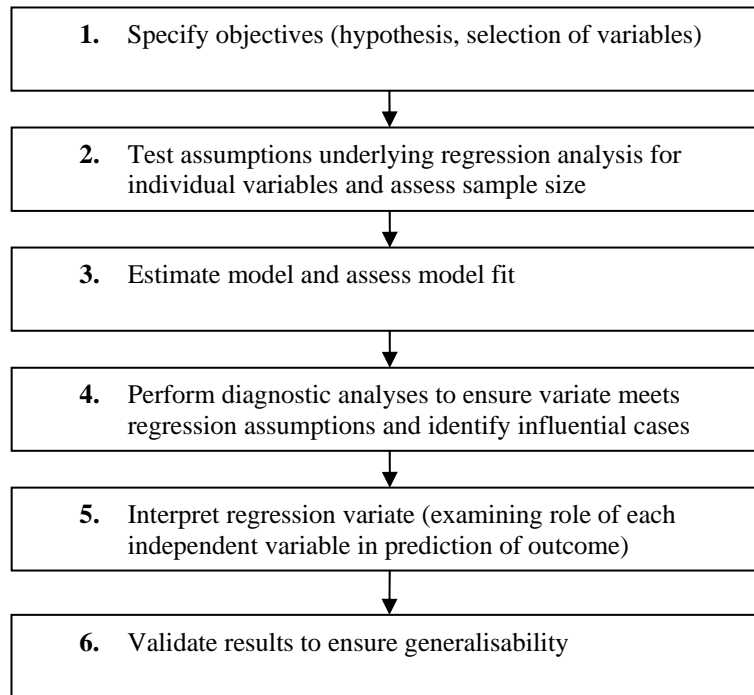
In the section which follows, a number of relationships are investigated using the stepwise method of multiple regression analysis. The initial regression analysis performed here (Hypothesis 1) will make use of a six stage regression model building process modified from Hair *et al.* (1998) to discuss each step in the regression analysis. This model is illustrated in Figure 5.6 and has been used to exemplify the checking process which has occurred for each of the hypotheses. However, whilst subsequent hypotheses have been subject to the same systematic process, discussion of the results has been abridged for the ease of the reader.

Hypothesis 1

A significant objective of the research was to establish any relationship between performance of the transport system at a destination and overall satisfaction with the destination. As a result of the PCA (see Table 5.29 above) five factors were extracted from a scale of 18 variables representing the performance of SQ attributes of the Greater Manchester transport network. Four of these factors relate to public transport and one is concerned specifically with car parking. Two of the factors relating to public transport are negative, representing negative performance of aspects of the public transport network. A stepwise multiple regression analysis was carried out on the variable SDEST (overall level of satisfaction with Manchester as a visitor destination) using as predictor variables the five factors extracted from the performance scale, which represent visitors' judgements on the performance of Manchester's transport network. The aim was to establish which of the factors have

the greatest predictive power over satisfaction with the destination as a whole. The relationship between the outcome and predictor variables is also explained.

Figure 5.6 – Six Stage Regression Model Building and Checking Process



Adapted from Hair *et al.* (1998)

Stage 1 – Objectives

As a product of the factor analysis, performance factor scores for each case were calculated and saved as variables using the Anderson-Rubin method which is preferred where uncorrelated scores are required (Tabachnick and Fidell, 1996). In multiple regression analysis the use of uncorrelated factor scores overcomes problems of collinearity (Field, 2000). The variable SDEST was regressed against the performance factor scores. Although it is recognised that visitor satisfaction is affected by a range of factors (see Pizam *et al.*, 1978) the research has attempted

only to measure the effects of the performance of the transport network on destination satisfaction. It was therefore anticipated that the percentage of variance in the outcome variable explained by the predictor variables would be relatively small. Nonetheless, if one or more of the five factors were identified as being statistically significant predictors of destination satisfaction, then a relationship between destination satisfaction and the performance of the transport network would have been established. Thus Hypothesis 1 can be characterised as follows:

H₀: Destination satisfaction cannot be partially predicted by performance of the transport network at the destination.

H₁: Destination satisfaction can be partially predicted by performance of the transport network at the destination.

Stage 2 - Initial Assumptions

The sample size for the regression analysis is 253 as 26 cases did not have complete data for one of the variables being correlated. The deviation of the variables from a normal distribution is discussed in Appendix 10. The ratio of 50 cases to each predictor variable is considered large enough to offset the need to transform the variables. Nonetheless, the regression model will be interpreted with caution. All other assumptions of multiple regression analysis are met by the individual predictor and outcome variables. A sample of 250 with five predictor variables is able to detect relationships with R² values of approximately 5 percent at a power of 0.80 at the 95 percent significance level (Hair *et al.*, 1998).

Stage 3 - Model Estimation and Fit

Table 5.31 presents the correlations between the five factors extracted from the performance scale and their correlation with the outcome variable. Tabachnick and Fidell (1996) stress that regression works best where the predictors are strongly correlated with the outcome variable but uncorrelated with each other. Using the benchmarks provided by Smithson (2000) for judging the size of R (based on Cohen's (1988) benchmarks for R^2) the highest significant correlation, between Factor 2 (service shortfall) and the outcome variable, is a small correlation. At the same time however, Smithson (2000) notes that the relative size of R depends on what values are normally found in similar studies. No comparative benchmarks exist from previous research to assist in assessing the magnitude of R^2 . However, it is noted that the correlations between the outcome and predictor variables appear to be generally low. The same is true, and also desirable, for the correlations between the predictor variables themselves. This is to be expected, as the predictor variables are factors.

Table 5.32 contains the results of a stepwise regression procedure with SDEST as the outcome variable and the five performance factors as predictor variables. Two factors are included in the regression equation as being significantly better predictors of the outcome than the mean: Factor 2 (service shortfall) and Factor 4 (poor value). Both of these predictors have a negative relationship with the outcome variable. The value of adjusted R^2 is small according to Cohen's (1988) benchmarks and indicates that 5.1 percent of the total variance in overall level of satisfaction with Manchester

as a visitor destination is explained by service shortfall and poor value with regard to public transport.

Table 5.31 - Correlation Matrix Outcome and Predictor Variables Hypothesis 1

Variables	Predictors				
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
<i>Predictors</i>					
Factor 1 Journey quality	1.000				
Factor 2 Service shortfall	-0.193*	1.000			
Factor 3 Good parking	0.191*	-0.128*	1.000		
Factor 4 Poor value	-0.162*	0.163*	-0.077	1.000	
Factor 5 Attractions access	0.171*	-0.160*	0.092	-0.050	1.000
<i>Outcome</i>					
Overall level of satisfaction with Mcr as a visitor destination	0.109	-0.204*	-0.116	-0.162*	0.000

N.B. correlations marked with * are significant at the 0.05 level (2-tailed)

Table 5.32 - Multiple Regression Analysis of Overall Satisfaction with Destination with Performance Factors as Predictor Variables

Summary Statistics				
Count: 253	R: 0.242	R Square: 0.059	Adjusted R Square: 0.051	
Analysis of Variance				
	Degrees of Freedom	Sum of Squares	Mean Squares	F Test
Regression	2	20.056	10.028	7.774
Residual	250	322.474	1.290	$P=0.001$
Total	252	342.530		
Beta Coefficient Table				
Variable (Factor)	Coefficient	Std. Coefficient	t -Value	Significance
Constant	5.099		74.988	0.000
Factor 2 Service shortfall	-0.212	-0.182	-2.926	0.004
Factor 4 Poor value	-0.154	-0.132	-2.129	0.034

Stage 4 - Assumptions of the Variate

An examination of the studentised residuals¹¹ plotted against the predicted values shows a very general pattern similar to a null plot, where the points are randomly and evenly dispersed throughout the plot (Field, 2000). Neither this plot nor the standardised partial regression plots for each of the predictor variables show any non-linear pattern. The scatter plot of the studentised residuals and predicted values also indicates homoscedasticity within the data as there is no apparent funnelling effect of increasing or decreasing residuals. The Durbin Watson statistic of 1.964 is very close to the ideal 2 denoting independence of errors. The normal P-P plot of standardised residuals denotes some deviation from a normal distribution indicating that the deviation from normality present in the initial variables also occurs in the variate. Some outliers are present, but their number is considered acceptable for the sample size (less than 5 percent of cases have standardised residuals less than -2 or greater than 2 and 99 percent of residuals have values which lie between -3 and 3). Mahalanobis and Cook's distance statistics do not provide any evidence of influential cases according to the criteria suggested by Field (2000). Leverage values, on the other hand, do indicate the presence of influential cases. Eighteen cases have leverage values of more than three times the average, which may indicate that they are exerting undue influence over the outcome variable (Stevens, 1992). However, the standardised DFBeta values and covariance ratio do not back this up. In summary, only the leverage points indicate that the regression model is affected by influential cases and Hair *et al.* (1998) suggest that this need not be a problem

¹¹ The studentised residual is the unstandardised residual divided by the estimate of its standard deviation. Studentised residuals provide a more precise estimate of error variance for specific cases (Field, 2000).

provided the influential observations fall in the general pattern of the other observations. This is likely to be the case here, since the other tests for influential statistics have all failed to show any significant problems.

Stage 5 - Interpretation of the Regression Model

The regression equation contains two predictors in addition to the constant. The regression equation can thus be presented as follows:

$$\text{Destination satisfaction} = 5.099 + (-0.212\text{Service shortfall}_i) + (-0.154\text{Poor value}_i)$$

This equation might be used to predict the expected level of satisfaction with the destination where satisfaction with the performance of the transport network is known.

The regression coefficients also provide a means of assessing the relative importance of the factors in the prediction of destination satisfaction. In this case the predictor and outcome variables have all been measured on the same seven point Likert scale, therefore direct comparisons can be made between the values. The value of the beta coefficient for the constant is 5.099. This figure indicates the point at which the regression line intercepts the Y axis when the value of the predictors is zero. The value of the constant does not have a precise meaning in this instance, as there is no zero point on the Likert scale. The beta coefficient for service shortfall (Factor 2) is -0.212. This value indicates that as service shortfall increases by one unit, destination satisfaction decreases by 0.212 units when the effect of poor value is held constant. For poor value (Factor 4) the value of the beta coefficient is -0.154. Thus

poor value has a lesser predictive effect on destination satisfaction. As poor value increases by 1 unit, destination satisfaction decreases by 0.154 units when the effect of service shortfall is held constant. Both of these factors are making a significant contribution to the model. It is notable that both factors which have been shown to be significantly better predictors of the outcome variable than the mean have negative relationships with the outcome variable. This is an important finding, as it appears to indicate that *dissatisfaction* with aspects of the transport network has a stronger influence on destination satisfaction than does *satisfaction* with aspects of the transport network

Stage 6 – Validation of the Results

The primary concern at this stage of the process is to establish to what extent the results are generalisable to the population, rather than specific to the sample. The acquisition of a second sample for comparative purposes was not possible due to temporal and financial constraints. Nor was it considered advisable to split the existing sample as this would reduce the sample size to an unacceptable level. Therefore, other approaches have been used to assess the validity of the model. Comparison of the adjusted R^2 value with the R^2 value is an indication of the degree to which the model is overfitted to the sample. In this instance, the difference between R^2 and adjusted R^2 is 0.008, indicating a 0.8 percent shrinkage in predictive power if the model had been derived from the population (see Figure 5.32). This indicates that the model should generalise well. However, Field (2000) notes that Wherry's equation, used to calculate adjusted R^2 , has been the subject of criticism, as it gives no indication of how well the model would fit a different sample from the

sample population. In order to cross-validate the model to different samples Stevens (1992) suggests the use of Steins's formula. When applied to the sample, the value of this formula is 0.040, compared to the R^2 value of 0.059, which implies a less satisfactory result with regard to the cross-validity of the regression model. Stein's formula and its calculation for Hypothesis 1 can be found in Appendix 12. Given the deviation from normality of the predictor and outcome variables and the low degree of cross-validity, it is not advisable to generalise from this regression model beyond the population of overseas visitors to Greater Manchester.

Hypothesis 1 - Conclusions and Implications

The presence of two statistically significant predictors of the outcome variable leads us to reject the null hypothesis that destination satisfaction cannot be partially predicted by performance of the transport network at the destination. There are three noteworthy conclusions which can be made regarding Hypothesis 1. Firstly, the performance factor related to parking is not a significant predictor of destination satisfaction. Thus it may be argued that satisfactory performance of the public transport network (as opposed to the private car) is of greater importance in predicting destination satisfaction for overseas visitors to Manchester. The fact that only 24.8 percent of respondents had the use of a private car during their visit gives credence to this outcome. The importance of public transport provision for overseas visitors to Manchester should therefore not be underestimated in the destination management process.

Secondly, those public transport performance factors which are significant predictors of destination satisfaction relate to underperformance of the public transport system. Thus, where certain tangible and intangible elements of public transport provision are perceived to under-perform, there is a negative impact on destination satisfaction. Conversely, where aspects of the transport system are functioning adequately, there is no evidence of a resulting increase in destination satisfaction. Consequently, from a destination management perspective, the maintenance of an *acceptable* standard of public transport performance in Greater Manchester may be of greater value than the achievement of a superlative public transport system. This may be a particularly important consideration in the provision of any transport service in Greater Manchester which is intended mainly for visitor, rather than local use.

Finally, in section 5.3.4 above, it was proposed, on the basis of the mean ratings on the performance attributes, that the fact that not all areas of the city are perceived as accessible may not have a significant bearing on satisfaction with the destination. The regression analysis substantiates this proposal, since it shows that the factor representing access to attractions was not found to be a significant predictor of destination satisfaction. The implications are that, whilst overseas visitors place importance on integration between the public transport network and the tourist city, dissatisfaction with the more basic aspects of public transport quality are of greater importance in predicting destination satisfaction.

Hypothesis 2

The performance of aspects of the transport network at a destination was shown to account for approximately 5.1 percent of total variation in the overall level of satisfaction with Manchester as a visitor destination. The same predictor variables would be expected to have greater predictive ability on overall satisfaction with public transport in Manchester. Thus, multiple regression analysis was performed to test the following hypothesis:

H₀: Performance factors are less powerful predictors of satisfaction with the transport network than of destination satisfaction.

H₂: Performance factors are more powerful predictors of satisfaction with the public transport network than of destination satisfaction.

The regression analysis was performed using the same predictor variables, i.e. the factors extracted from the performance scale, but measuring their predictive effect on an outcome variable which represents the overall satisfaction with all modes of public transport, calculated (using the *compute* function in SPSS) as the mean of the three variables measuring satisfaction with bus, train and tram. This variable was entitled MSATALLM (mean satisfaction with all modes of transport). Where visitors had not used all three modes of public transport, the mean was calculated on the basis of those they had used.

The sample size for the regression of mean satisfaction with public transport against the performance factors was considerably reduced as responses were not recorded

from respondents who had not used any form of public transport. The regression analysis was therefore run on 167 cases, less than the recommended 40 cases for each predictor variable entered into the stepwise method, but considerably more than 40 cases to each of the two predictors included in the regression model. Table 5.33 shows the results of the stepwise multiple regression analysis for Hypothesis 2.

As with Hypothesis 1, only two of the five factors are included in the regression equation as being significantly better predictors of the outcome than the mean, however only one of these was also identified in Hypothesis 1 as a significant predictor of overall satisfaction with the destination. Factor 1 (journey quality) has a positive predictive relationship with overall satisfaction with public transport whilst it was not shown to have any significant relationship with destination satisfaction. Factor 2 (service shortfall) is showing a negative relationship to overall satisfaction with public transport (beta coefficient -0.290) which is somewhat stronger than its predictive relationship with destination satisfaction (beta coefficient -0.212).

Table 5.33 - Multiple Regression Analysis of Overall Satisfaction with Public Transport with Performance Factors as Predictor Variables

Summary Statistics				
Count: 167	R: 0.385	R Square: 0.148	Adjusted R Square: 0.138	
Analysis of Variance				
	Degrees of Freedom	Sum of Squares	Mean Squares	F Test
Regression	2	37.989	18.995	14.261
Residual	164	218.438	1.332	$P < 0.001$
Total	166	256.428		
Beta Coefficient Table				
Independent Variables (Factors)	Coefficient	Std. Coefficient	<i>t</i> -Value	Significance
Constant	4.858		68.447	0.000
Factor 1	0.328	0.264	3.595	0.000
Journey Quality				
Factor 2	-0.290	-0.234	-3.182	0.002
Service Shortfall				

The adjusted R^2 is medium on Cohen's (1988) scale, and suggests that 13.8 percent of the total variance in overall level of satisfaction with Manchester's public transport is explained by journey quality and service shortfall. The beta coefficients indicate that journey quality is the best predictor of overall satisfaction with public transport. As journey quality increases by one unit, satisfaction with public transport increases by 0.328 units when the effect of service shortfall is held constant. The beta coefficient for service shortfall indicates a decrease in satisfaction with public transport of 0.290 units for every one unit increase in service shortfall. The regression equation may be written as follows:

$$\text{Satisfaction with public transport} = 4.858 + (0.328\text{Journey quality}_i) + (-0.290\text{Service shortfall}_i)$$

Hypothesis 2 is therefore accepted as the R^2 value and beta coefficients of Hypothesis 2 are considerably larger than those of Hypothesis 1.

Whereas underperformance, rather than excellence, of the public transport system was a significant predictor of destination satisfaction, not unexpectedly, journey quality is a significant predictor of overall satisfaction with public transport. The mean level of satisfaction with the three modes of public transport for the sample is 4.86 on a seven point Likert scale, compared to a mean of 5.10 for destination satisfaction. The former figure thus shows room for improvement. The factor 'journey quality' relates to the more tangible elements of public transport consumption, particularly safety and speed. It is therefore to these aspects of Manchester's public transport service that improvements should be made in order to increase overseas visitors' overall satisfaction with the service. Furthermore, there is

a need to manage dissatisfaction with the intangible, service aspects of the public transport system to prevent a drop in overall satisfaction levels. Whilst the above results are true for the one sample from the many that could have been taken from overseas visitors to Manchester, the deviation from normality of the predictor and outcome variables, the smaller sample size employed for the testing of this hypothesis and a slight indication of heteroscedasticity among the variables indicates that the generalisability of the regression equation is in doubt.

Hypothesis 3

It has been demonstrated within the tourism literature that the performance only approach to measuring satisfaction with tourism products explains more of the variance in overall satisfaction and future behaviour than the performance weighted by importance approach (Crompton and Love, 1995; Yüksel and Rimmington, 1998; Kozak, 2001). In order to assess this relationship within the context of the study, the following hypothesis was tested:

H₀: Performance only factors are less powerful predictors of overall satisfaction with public transport modes than performance weighted by importance factors.

H₃: Performance only factors are more powerful predictors of overall satisfaction with public transport than performance weighted by importance factors.

Performance factors were weighted by importance factors by multiplying respondents' performance rating of each attribute by its importance rating on the same attribute (Fishbein, 1967). Importance ratings were recorded for fifteen of the

performance attributes of the transport system and these constituted the weighted variables. However, two of these weighted variables were excluded from the subsequent analysis because they measured the performance of private, rather than public, transport modes. PCA was thus performed on thirteen weighted variables in the same way as for the performance only factors (see section 5.3.10) and three factors were extracted. No attempt was made to interpret these factors as the PCA was conducted purely for the purpose of the regression analysis. A stepwise multiple regression analysis was then performed on the outcome variable MSATALLM (mean satisfaction with all modes of public transport) using the three weighted factors as predictors. The results are presented in Table 5.34.

Table 5.34 - Multiple Regression Analysis of Overall Satisfaction with Public Transport with Weighted Performance Factors as Predictor Variables

Summary Statistics				
Count: 167	R: 0.255	R Square: 0.065	Adjusted R Square: 0.059	
Analysis of Variance				
	Degrees of Freedom	Sum of Squares	Mean Squares	F Test
Regression	1	16.659	16.659	11.464
Residual	165	239.769	1.453	$P=0.001$
Total	166	256.428		
Beta Coefficient Table				
Independent Variables (Factors)	Coefficient	Std. Coefficient	t -Value	Significance
Constant	4.858		67.318	0.000
Weighted Factor 2	0.317	0.255	3.386	0.001

Only one of the weighted performance factors (Factor 2) is a significant predictor of overall satisfaction with public transport and the adjusted R^2 statistic shows that less than 6 percent of the variance in overall level of satisfaction with Manchester's public transport is explained by that one factor. By contrast, two unweighted performance factors explained 13.8 percent of the total variance in overall level of satisfaction with Manchester's public transport (see Hypothesis 2). Thus the null

hypothesis can be rejected and Hypothesis 3 accepted. The above result also supports the case for convergent validity of the research instrument since, as predicted, the weighted performance factors are less powerful predictors of overall satisfaction with public transport than the performance only factors (after Yüksel and Rimmingon, 1998).

Hypothesis 4

Given the results of the previous test, it was expected that performance only factors would be a better predictor of future behaviour (with regard to public transport use) than performance weighted by importance factors.

H₀: Performance only factors are less powerful predictors of intention to reuse public transport than performance weighted by importance factors.

H₄: Performance only factors are more powerful predictors of intention to reuse public transport than performance weighted by importance factors.

Stepwise multiple regression analysis was carried out on the outcome variable MREUSE (mean likelihood of reusing public transport). This variable was calculated from the three variables that measure likelihood of reusing the modes of public transport available in Manchester and represents the mean of these three variables for each case. Regression analysis was conducted using both weighted and unweighted performance factors as predictor variables. The result of the regression analysis with the unweighted performance factors is shown in Table 5.35. Sample size is reduced due to the number of missing values; nonetheless the ratio of cases to

significant predictors included in the model is still acceptable. It should also be noted that, whilst the residuals appear to be drawn from a normal population, the outcome variable is not normally distributed. Furthermore, the scatterplots of the residuals are showing evidence of heteroscedasticity. There is a considerable difference (0.03) between R^2 and the result of Stein's formula shown in Appendix 3 (0.068), suggesting that the model has a low degree of cross-validity. The generalisability of the model thus remains in doubt.

Table 5.35 - Multiple Regression Analysis of Mean Likelihood of Reusing all Public Transport Modes with Performance Only Factors as Predictor Variables

Summary Statistics				
Count: 157	R: 0.312	R Square: 0.098	Adjusted R Square: 0.086	
Analysis of Variance				
	Degrees of Freedom	Sum of Squares	Mean Squares	F Test
Regression	2	18.313	9.156	8.332
Residual	154	169.230	1.099	$P < 0.001$
Total	156	187.543		
Beta Coefficient Table				
Independent Variables (Factors)	Coefficient	Std. Coefficient	t-Value	Significance
Constant	5.480		65.402	0.000
Factor 1 Journey Quality	0.232	0.239	3.048	0.003
Factor 2 Service Shortfall	-0.161	-0.158	-2.014	0.046

The R^2 value of 0.098 is barely medium on Cohen's (1988) scale. Nonetheless, almost ten percent of the total variance in likelihood of reusing Manchester's public transport is explained by journey quality and service shortfall. The regression equation below shows that journey quality is the most important predictor as likelihood of reusing public transport increases by 0.232 units for every one unit increase in journey quality.

$$\text{Likelihood of reusing public transport} = 5.480 + (0.232 \text{Journey quality}_i) + (-0.161 \text{Service shortfall}_i)$$

The factors which are significant predictors of intention to reuse public transport are the same two that were shown in Hypothesis 2 to be predictors of satisfaction with public transport, thus the same implications for destination management apply. Furthermore, nomological validity is demonstrated as the percentage variance in intention to reuse public transport explained by the predictors is less than that of overall satisfaction with public transport but more than that of overall destination satisfaction.

The regression analysis with the weighted performance variables was fruitless as none of the weighted factors proved to be significant predictors of the outcome variable. The results of this analysis therefore support Hypothesis 3 in demonstrating the presence of convergent validity as the measures correlate in the way predicted by the consumer satisfaction measurement literature (see Yüksel and Rimmington, 1998).

Hypothesis 5

The three factors extracted from the determinant scale (see Table 5.27 above) represent personal factors affecting the decision to use public (or private) transport at overseas destinations. Since the performance scale is constructed of system attributes which measure aspects of public transport SQ, it was expected that the ability of the determinant factors to predict overall satisfaction with public transport would be less important than that of the performance variables. This was tested with the following hypothesis:

H₀: Performance factors are less powerful predictors of overall satisfaction with public transport than determinant factors.

H₅: Performance factors are more powerful predictors of overall satisfaction with public transport than determinant factors.

In order to test the hypothesis, the variable MSATALLM (mean satisfaction with all modes of transport) was regressed against the factors extracted from the determinant scale. Table 5.36 summarises the results. The sample size for hypothesis 5 was reduced from 279 to 167, since responses to the mode of transport satisfaction variables were only noted for visitors who had used public transport. Nonetheless the ratio of 40 cases to each of the three predictor variable entered into the stepwise method is still exceeded.

Table 5.36 - Multiple Regression Analysis of Overall Satisfaction with Public Transport Modes with Determinant Factors as Predictor Variables

Summary Statistics				
Count: 167	R: 0.176	R Square: 0.031	Adjusted R Square: 0.025	
Analysis of Variance				
	Degrees of Freedom	Sum of Squares	Mean Squares	F Test
Regression	1	7.919	7.919	5.258
Residual	165	248.509	1.506	<i>P</i> =0.023
Total	166	256.426		
Beta Coefficient Table				
Independent Variables (Factors)	Coefficient	Std. Coefficient	<i>t</i> -Value	Significance
Constant	4.864		51.201	0.000
Factor 1 Confident and willing travel	0.213	0.176	2.293	0.023

The adjusted R² value signifies that only 2.5 percent of the total variance in overall level of satisfaction with Manchester's public transport is explained by personal factors relating to confident and willing travel. One determinant factor only is included in the regression equation as a significantly better predictor of the outcome

that the mean. Determinant Factor 1 (confident and willing travel) has a small, but nonetheless significant, positive predictive relationship with overall satisfaction with public transport. As confident and willing travel increases by one unit, satisfaction with public transport increases by 0.213 units as the following regression equation illustrates:

$$\text{Satisfaction with public transport} = 4.864 + (0.213 \text{Confident and willing travel}_i)$$

Since the percentage of the total variance in overall satisfaction with public transport explained by the performance factors (13.8 percent) is greater than that explained by the determinant factors (2.5 percent), the null hypothesis can be rejected.

The determinant factor, confident and willing travel, consists of variables which measure ability to obtain transport information, feeling of safety on public transport and willingness to use public transport despite language difficulties. In order to improve satisfaction with public transport through increasing overseas visitors' travel confidence, attention should therefore be paid to guaranteeing a sense of safety on board public transport and to ensuring the accessibility and comprehensibility of public transport information for overseas visitors to Manchester. Furthermore, it is noteworthy that the determinant factors did not prove to be significant predictors of either destination satisfaction or re-use of public transport. Since only the performance factors are therefore significant in predicting reuse of public transport, the importance of providing a satisfactory public transport system is emphasised, notwithstanding the fact that violations of certain of the assumptions of the regression variate place the generalisability of the regression equation in doubt.

Hypothesis 6

It was hypothesised that satisfaction with tram travel in Manchester is a better predictor of destination satisfaction than satisfaction with bus or train travel for three reasons. Firstly, the tram was the mode of transport which respondents rated highest on overall satisfaction (see Table 5.22 above) although it is also the most expensive mode of public transport in Manchester. Secondly, the tram has been argued to be Manchester's most modern and user friendly mode of public transport. Thirdly, visitors had expressed the likelihood of reusing the tram on future visits to Manchester (mean = 5.39). Therefore, as outlined in the hypothesis below, it is anticipated that the predictive relationship between satisfaction with tram travel and destination satisfaction will be the strongest of the three modes.

H₀: Satisfaction with tram travel is a less powerful predictor of destination satisfaction than satisfaction with bus or train travel.

H₆: Satisfaction with tram travel is a more powerful predictor of destination satisfaction than satisfaction with bus or train travel.

The outcome variable SDEST (overall satisfaction with destination) was regressed against the variables measuring satisfaction with the three modes of transport in Manchester (bus, tram and train.).

The correlation matrix (Table 5.37) shows that the highest correlation is between satisfaction with train and destination satisfaction (R=0.589). Satisfaction with the tram has the second highest correlation with destination satisfaction (R=0.541) and satisfaction with bus travel has the lowest correlation (R=0.409). However, further

analysis indicates that to run a regression analysis with these predictor and outcome variables is not advisable. Firstly, there is little difference in the size of the correlations between the predictors themselves and the correlations between the predictors and the outcome variable. Secondly, the number of valid cases is less than 50, which is considerably fewer than recommended for a stepwise regression analysis with three predictor variables (Hair *et al.* 1998). The use of mean values to replace missing values is not recommended by Field (2000:142) who points out that ‘...if there are many missing values this choice is potentially dangerous because smaller standard errors are more likely to lead to significant results that are a product of the data replacement rather than a genuine effect.’ Therefore, a regression analysis has not been performed to test the predictive ability of overall satisfaction with the tram over destination satisfaction and the null hypothesis cannot be rejected.

Nonetheless, it is worthy of note that, whilst the train scored the lowest mean overall level of satisfaction of the three modes of transport (Table 5.22) and was the least likely of Manchester’s public transport modes to be used on future visits to the city (Table 5.23), overall satisfaction with the train had the highest correlation with overall satisfaction with Manchester as a visitor destination ($R=0.589$). Important management implications can be inferred from these findings. The urgency of improving levels of satisfaction with the train as means of travel for overseas visitors is increased, given the correlation between satisfaction with this mode and destination satisfaction. Therefore, the train should arguably be the main focus of any efforts to tailor public transport to overseas visitors’ use in Manchester.

Table 5.37 - Correlation Matrix Outcome and Predictor Variables

Variables	Predictors		
	Satisfaction with bus	Satisfaction with tram	Satisfaction with train
<i>Predictors</i>			
Satisfaction with bus	1.000		
Satisfaction with tram	0.395	1.000	
Satisfaction with train	0.575	0.434	1.000
<i>Outcome</i>			
Overall level of satisfaction with Mcr as a visitor destination	0.409	0.541	0.589

N.B. Spearmans rho employed. All correlations are significant at the 0.01 level (2-tailed)

The fact that the train is currently the mode of transport with which visitors are least satisfied and are least likely to use on future trips should be of fundamental concern to both the public transport authority and local government bodies responsible for tourism promotion. However, it should also be noted that the correlation between overall satisfaction with the tram and overall destination satisfaction ($R=0.541$) is not substantially smaller than the correlation between overall satisfaction with the train and destination satisfaction ($R=0.589$). There are therefore also opportunities for increasing destination satisfaction by improving satisfaction levels with the tram. The planned extensions to the Manchester Metrolink may go some way to achieving this through improving route coverage.

5.3.19 Summary of Multiple Regression Analyses

Notwithstanding the fact that the data did not always adhere to the assumptions of multiple regression analysis, several findings of the regression analysis have implications for the management of Manchester's public transport for overseas visitors. The findings support the hypothesis that there is a relationship between

satisfaction with public transport and destination satisfaction in Manchester. Moreover, satisfaction with attributes of private transport was shown not to be a predictor of destination satisfaction. Thus, policies for the provision of a satisfactory level of transport performance for overseas visitors need to have a greater focus on public transport provision within Manchester's destination management plan. However, the findings indicate that whilst underperformance of the public transport system has a negative impact on satisfaction with Manchester as a visitor destination, positive performance does not increase destination satisfaction. This suggests that the task of the transport provider is simplified, since public transport provision for overseas visitors need only be adequate, rather than outstanding.

The findings further indicate that satisfaction with the journey (rather than service) elements of public transport provision (the journey quality factor) is the best predictor of overall public transport satisfaction. Thus, the provision of an adequate public transport service for overseas visitors to Manchester should focus most heavily on optimising the attributes which constitute journey quality, i.e. speed, punctuality and safety. However, attention to the provision of an adequate level of service should equally be considered important as dissatisfaction with attributes such as ticketing, customer service and information provision can lead to an overall drop in satisfaction with Manchester's public transport system. The provision of information necessary for overseas visitors to make journeys by public transport around Greater Manchester is also central to customer satisfaction, since effective public transport information plays a role in increasing overseas visitors' confidence which, in turn, increases satisfaction with Manchester's public transport system. Moreover, a moderate association has been found between satisfaction with train and

tram travel and overall destination satisfaction. Thus, these two modes have the potential to play a greater role in destination satisfaction than the bus.

This chapter has presented a range of descriptive, bivariate and multivariate tests on the data set which have enabled the major hypotheses of the research to be addressed. In addition, a range of other important findings have been discussed at length and suggestions for transport policy and destination management have been offered. It is the purpose of the next and final chapter to summarise the most important findings of the research and the associated policy recommendations and to identify areas where further research could enhance the findings.

CHAPTER 6

CONCLUDING REMARKS: IMPLICATIONS FOR DESTINATION MANAGEMENT AND DIRECTIONS FOR FUTURE RESEARCH

6.1 Introduction

A comprehensive set of results for the research project have been reported in Chapter 5. In addition to reporting on the three main hypotheses of the research, a broader discussion was conducted which considered ‘discovered’ relationships not covered by the hypotheses. Moreover, a number of suggestions were made for the enhancement of destination satisfaction through the provision of public transport services suited to the needs of overseas urban visitors. Whilst it is not the aim of this chapter to reproduce elements of the discussion in Chapter 5, it is nonetheless considered useful here (particularly given the length and scope of Chapter 5) to reiterate the main findings of the research. A further purpose of this chapter is to outline any shortcomings of the research; in particular the adequacy of the research instrument and the generalisability of the findings in light of the sampling procedures used will be addressed. Possible improvements to the research are also proposed. The chapter concludes with a discussion of the possible application of the findings and suggestions for future research.

6.2 Summary of the Main Findings

Three major hypotheses were presented at the beginning of this research project.

These will be dealt with in turn.

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- **Overseas visitors measure satisfaction with urban public transport according to different attributes and underlying dimensions than local users.**

This hypothesis has been confirmed. Interviews with overseas visitors revealed that public transport attributes relating to the integration of the public transport network and the tourist city were identified as contributing to public transport use at urban destinations. Moreover, access to attractions by public transport was found to be the second most important public transport SQ attribute for overseas visitors to Manchester, of greater importance than attributes such as speed and punctuality. In addition, attractions access was found to be one of the underlying dimensions of public transport performance as rated by overseas visitors to Greater Manchester. It is therefore reasonable to conclude not only that overseas visitors employ additional, tourist related attributes in measuring satisfaction with urban public transport, but also that they apply different levels of importance to other, non tourist related attributes than local users.

- **Overseas visitors have different public transport information needs to local users.**

The findings have demonstrated that overseas visitors not only use different information sources to local users, but also use the same sources to different degrees. A comparison of the items of information that overseas visitors to Manchester required to make a journey in a foreign city with those that residents required to make a new, local journey illustrated that overseas visitor have a much greater need for information than local users. Moreover, certain types of information linked to local knowledge (e.g. departure point) were sought by visitors to a much greater degree than local users. Furthermore, analysis of the public transport information

sources that overseas visitors to Manchester had used during their stay suggested that tourist specific information sources (e.g. TIC, attractions leaflets) were used rather than the customary sources of public transport information in Manchester used by local people (e.g. GMPTE information centre and telephone information line). The hypothesis that overseas visitors have different public transport information needs to local users is therefore confirmed.

- **Satisfaction with public transport is a contributing factor to destination satisfaction.**

Two of the underlying dimensions of public transport performance, as measured by overseas visitors to Greater Manchester, were shown to have a negative predictive ability over the outcome variable, overall destination satisfaction (service shortfall and poor value). Thus, satisfaction with Greater Manchester's public transport system, measured on performance attributes, was shown to partially predict destination satisfaction. The final hypothesis is therefore confirmed.

6.3 Shortcomings of the Research Design and Suggestions for Future Research

The research was undertaken at an exploratory level and the research design was thus experimental. Consequently, there would be expected to be considerable scope for modifications to the research design. However, the findings of the research (in particular the importance and performance ratings and the results of the regression analysis) largely endorse the conceptual framework and confirm the validity of the measurement instrument employed for the research. Nonetheless, several shortcomings have been identified, both in operationalising the research and in the

conceptual framework itself. These are discussed below and suggestions made for further research which could improve the research design.

A general shortcoming of the research was the length of the questionnaire employed for the survey. An initial conceptual framework created for the research suggested that there were a very wide range of variables affecting overseas visitors' use of urban public transport. Whilst efforts were taken to reduce the number of variables to a manageable level through confining the research to three major hypotheses, nonetheless the research instrument was still, perhaps unnecessarily lengthy. Initially it was hoped to derive information on visitor travel behaviour around the city in order allow an examination of the spatial factors (e.g. location of accommodation) affecting overseas visitors' use of public transport in Manchester. Questions were included in the research instrument which requested information on the location of accommodation and the breakdown of journey type by mode (see Appendix 7, Section A question 8 and Section B question 1). However, these questions did not attract sufficiently accurate responses to enable the proposed disaggregation of data to take place, although it was possible to establish the level of use of the different modes of transport by overseas visitors (see Chapter 5, Tables 5.9 and 5.10). With hindsight, the spatial breakdown of visitors' travel behaviour was too ambitious a target for this project to achieve and merits a separate study. At the same time, the omission of this aspect of the study from the research would have simplified and shortened the questionnaire and facilitated greater focus on the relationship between factors affecting overseas visitors' use of public transport and destination satisfaction.

A further shortcoming of the research is the lack of conclusiveness of the attributes in the determinant scale. Whilst it was considered important to establish to what extent the personal factors affecting overseas visitors' use of urban public transport were different to those of local users, the range of factors is likely to be extremely large. Whilst qualitative interviews were used to identify these factors, it is likely that a greater range of factors would have been uncovered from a larger and more representative sample of respondents. Furthermore, some of the determinant factors were found to fall around the middle point of the Likert scale, indicating that they are neither important nor unimportant to respondents. Further research is required to establish whether these factors have a place in the determinant scale. Moreover, as there has been little analysis of these personal factors in the public transport literature, it is not possible to meaningfully compare the findings on the determinant scale with findings for local users on the same attributes.

The SQ attributes in the performance scale were not investigated by mode, but for public transport in Manchester as a whole. Thus, the ratings on the performance scale have provided an overall impression of the performance of Manchester's public transport network. However, it has been established that the train is the mode of transport with which overseas visitors to Manchester are least satisfied. Since this mode is also the one which has the greatest association with destination satisfaction, there is scope for investigating the SQ performance factors in relation to the train only, in order to establish which SQ attributes exhibit the largest gap between importance and performance in respect of train travel. This could be achieved by employing the importance and performance measurement scales employed for the research for the study of train travel at overseas destinations.

Performance factors representing dimensions of public transport SQ from an overseas visitor perspective explained 13.8 percent of the total variance in overall level of satisfaction with Manchester's public transport. These low predictive abilities indicate the presence of other factors affecting overall satisfaction with Manchester's public transport system. It was suggested in Chapter 3 that personal and external factors exercise an indirect influence over satisfaction with public transport by means of their impact on perceptions of SQ. However, external factors have been excluded from the measurement instrument and the lack of comprehensiveness of the determinant scale comprising personal factors has been discussed above. It is therefore likely that the failure of the performance factors to explain a greater percentage of the variance in overall satisfaction with public transport is due to the presence of personal and external factors not investigated by the study. Further research is required to establish the nature of these factors.

The role of experience in mode of transport choice has not been investigated by the study. It was argued that overseas visitors to Manchester utilise a variety of experiences in informing the decision to use public transport, such as experience of public transport at the visitors' place of residence or at other urban visitor destinations. It was attempted to gain a rudimentary measure of the influence of experience with Manchester's public transport system on the performance ratings by testing the relationship between number of previous visits and stage of current stay and the performance variables; no significant relationships emerged. However, preliminary analyses of the level of association between the number of previous visits and the performance variables, using the eta statistic, indicate that there may be a higher level of association between experience of the destination and level of

satisfaction with the performance variables measuring attributes of private transport (parking). The role of experience in the decision to use public transport is therefore an area which requires further research.

With regard to the public transport information sources overseas visitors to Greater Manchester had used, some association has been found between nationality and the usefulness of these information sources. However, the group sizes within the variable measuring nationality are too small for statistical tests to be carried out reliably (48 nationalities are represented in a sample of 279 respondents). Nonetheless, the importance of investigating national variations in preference for public transport information should not be underestimated for visitor destinations. Further research on a larger sample is recommended in order to examine more fully the role of nationality in the use of and preference for public transport information, and indeed tourist information in general.

A further important area of future research is the study of factors affecting domestic visitors' use of urban public transport networks. Domestic visitors have been excluded from the sample as the research specifically aimed to test the hypothesis that personal factors specific to overseas visitors had an influence on public transport satisfaction and hence the use of public transport at overseas destinations (at the end of Chapter 3 (section 3.6.1) it was proposed that overseas visitors perceive attributes of public transport SQ in a distinctive manner). Moreover, a large percentage of Manchester's domestic visitors are known to come from the surrounding region (although no data is available to support this fact) and it was therefore felt that domestic visitors would more readily fall into the category of local users than tourist

with regard to public transport use. Nonetheless, a comparison of findings for overseas visitors and domestic users would help to confirm this theory.

6.4 Generalisability of the Findings

Certain aspects of the findings of the research are specific to Greater Manchester. Pullen (1991) argues that public transport research is (rightly) area specific. In the case of the findings presented in Chapter 5, the ratings on the performance scale are clearly destination specific, measuring satisfaction with attributes of public transport SQ in Manchester. However, in judging the generalisability of the findings to the population of overseas visitors to Greater Manchester, consideration must be given to the nature of the sample. With regard to purpose of visit, it was acknowledged in Chapter 4 (section 4.5.8.3) that, mainly due to the low representation of business visitors, the sample was unlikely to be representative of the population of overseas visitors to Greater Manchester. Without further research into the socio-demographic and trip characteristics of Manchester's overseas visitors it is impossible to state to what degree the sample is representative of leisure, educational and VFR visitors. However, the demand side characteristics of the sample largely reflect the supply side elements of Manchester's urban visitor product. Thus it may be argued that the findings are generalisable to Manchester's leisure, educational and VFR visitors. Since business visitors were shown by the semi-structured interviews to be closer to the pole of the captive car user (Hovell, *et al.*, 1975) and have much less choice over their destination, the findings are, in any case, arguably of much greater relevance to non-business visitors.

Meanwhile, two elements of the research design argue for the transferability of the findings to other urban destinations. The fact that the interview data was derived partly from visitors to urban destinations other than Manchester can be argued to have produced a set of determinant, importance and performance attributes which are valid for non-business visitors across a range of urban destinations. Moreover, the importance ratings of SQ attributes were not measured with specific reference to Manchester but on the basis of the importance of these attributes *at any overseas destination* (see questionnaire, Appendix 7). Thus, whilst the practical findings of the research are destination specific, there is an argument to support the generalisability of the research instrument itself (i.e. the scales for measuring the importance and performance of public transport SQ from an overseas visitor perspective). However, the visitor sample used to validate the research instrument must again be considered. It was argued in Chapter 2 that a city's visitor market is dependent on the attractions and facilities it offers, as well as its marketing strategies and the spatial, socio-economic and cultural attributes of the city. Therefore, even if the sample obtained in the survey is representative of non-business visitors to Manchester, it is unlikely to be representative of non-business visitors to other cities, even those which can be placed in the same category as Manchester within typologies of urban visitor destinations (Page, 1995; Law, 1996; Fainstein and Judd, 1999).

Indeed, diversity of both the supply and demand side of urban tourism is a serious obstacle to formulating theories of visitor behaviour which can be applied to the urban tourism market as a whole, but for which there have been urgent calls (Ashworth, 1992; Pearce, 2001a). For an example, such as that discussed above, where there are reasons to believe that visitor profile is peculiar to the destination

under examination, caution must be taken over any claims that research findings contribute to a general understanding of urban visitor behaviour. Page (1997) and Pearce (2001a) have stressed the importance of replicating studies at a selection of urban destinations in order to test the validity of theories. The generalisability of the determinant, importance and performance scales could be tested by repeating the survey at other urban destinations with different visitor profiles. However, the use of multiple destination surveys, as suggested by Page (1997), is nevertheless unlikely to be comprehensive enough to represent the entire range of urban visitor destinations. Moreover, whilst the need to generalise methods of studying visitor behaviour in cities is acknowledged, the value of the universal theories of urban visitor behaviour espoused by Ashworth (1992), Page (1997) and Pearce (2001a) may, in fact, be questioned in light of the eclectic range of urban destinations and visitor motivations.

6.5 Possible Applications of the Findings

As mentioned above, the practical findings of the research are destination specific and therefore their significance for transport and destination management and planning should be discussed. In presenting applications of the findings, it is important to consider sample size, since results which are statistically significant but have little educational significance, can be obtained from very large samples (Pumfrey *et al.* (1993). However, in this case, sample size is considered to be neither too large nor too small, thus it is the characteristics of the sample (discussed in section 6.4 above) which should be of concern rather than sample size. Nonetheless, certain applications are suggested by the findings with regard to transport and destination management for Manchester's overseas visitor market. The

findings can be regarded as being of foremost relevance to several government bodies within Greater Manchester. Responsibilities for tourism marketing and destination management within Greater Manchester are shared among Manchester's ten local authorities. Whilst the City of Manchester (the central administrative zone) has a separate body responsible for tourism marketing (Marketing Manchester Visitor and Convention Bureau), the other nine local authorities are responsible for the marketing of their own areas. With regard to transport planning and management, the Greater Manchester Passenger Transport Authority (GMPTA) is responsible for making policy decisions about public transport provision within the Greater Manchester and is made up of 33 Councillors appointed by the 10 District Councils in Greater Manchester. GMPTA is the body responsible for implementing GMPTA's policies. The findings of the research, outlined in Chapter 5, thus have application to all of the above bodies.

Finally, but perhaps most importantly, the academic contribution of the research should also be noted. As far as can be discerned, this is the only study of its kind which has provided evidence for the link between satisfaction with urban public transport and destination satisfaction. Moreover, the study is unique in having investigated the SQ attributes which are of importance in the evaluation of public transport at overseas destinations and the specific public transport information needs of overseas visitors. From the point of view of transportation research, the study has successfully applied attribute based measurement techniques from the marketing and tourism literatures to the study of public transport SQ, thus suggesting that this technique can be employed on a more widespread basis for the measurement of public transport SQ within that discipline. Meanwhile, from a tourism management

perspective, the importance of incorporating a visitor oriented transport management strategy in urban destinations has been emphasised. Finally, confirmation has been provided of the need to extend studies of tourist transport beyond the transit route to include destination based transport.

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APPENDIX 1

GUIDELINES FOR SEMI-STRUCTURED INTERVIEWS OF OVERSEAS VISITORS TO GREATER MANCHESTER

Travel to Manchester

How did you arrive in Manchester?

Did you bring a car?

How did you get to your accommodation?

How was the journey to your accommodation?

Were there any problems with it?

Why did you choose to travel that particular way?

How did you find out about that means of travelling to your accommodation?

Travel around Manchester

Tell me about what travel you have undertaken while in Manchester.

Have you been travelling around the city centre, tell me about that:

Did you plan your journeys in advance?

How did you plan them?

Did you have transport information from any source?

Were there any problems in finding information about the journeys you wanted to make?

What sort of information did you need to make your journey?

What would be the most useful way for you to access that information?

Would it have been useful to have had this information in advance of your visit?

What modes of transport were used?

To what extent did you have a choice of mode of public transport?

Why did you choose the one you did?

What were the impressions of the modes of transport used?

Were any particular problems experienced using the public transport system as an overseas visitor?

Would you be willing to make the same journey again?

Is there anything which would have made the journey easier for you?

Would you say that public transport in Manchester has had an effect on your perception of the city?

Do you generally use the public transport system as a means of orienting yourself in an unfamiliar city?

Do you regard the use of public transport as part of the experience of the destination?

Travel in your home town

Do you use public transport at home for business and leisure travel?

Are there any particular differences between public transport in Manchester and at your place of residence?

APPENDIX 2

GUIDELINES FOR SEMI-STRUCTURED INTERVIEWS OF UK RESIDENTS

Travel to Destination

How did you arrive at your destination?

Did you take a car?

How did you get to your accommodation?

How was the journey to your accommodation? (Were there any problems with it?)

Why did you choose to travel that particular way?

How did you find out about that means of travelling to your accommodation?

Travel around Destination

Tell me about what travel you undertook whilst at your destination.

Did you plan your journeys in advance?

How did you plan them?

Did you have transport information from any source?

Were there any problems in finding information about the journeys you wanted to make?

What sort of information did you need to make your journey?

What would have been the most useful way for you to access that information?

Did you have this information in advance of your visit?

What modes of transport were used?

To what extent did you have a choice of mode of public transport? (if used)

Why did you choose the one you did?

What were the impressions of the modes of transport used?

Were any particular problems experienced using the public transport system as an overseas visitor?

Would you be willing to make the same journey again?

Is there anything which would have made the journey easier for you?

Would you say that public transport at the destination has had an effect on your perception of the city?

Do you generally use the public transport system as a means of orienting yourself in an unfamiliar city?

Do you regard the use of public transport as part of the experience of the destination?

Travel in your home town

Do you use public transport at home for business and leisure travel?

Are there any particular differences between public transport at home (Manchester) and at the urban destination you have just visited?

APPENDIX 3
SAMPLE INTERVIEW WITH OVERSEAS VISITOR TO
GREATER MANCHESTER

Interview with Ms D

Visiting academic from USA

Part of group visit to Manchester Metropolitan University

Business mixed with pleasure

Returning visitor to Manchester

1 **Interviewer:** I'd like to ask a few pre-visit questions first of all about the actual
2 planning of your journey. Was your accommodation planned before you left the
3 States?

4 **Interviewee:** Yes

5 **Interviewer:** And was it organised by you yourself?

6 **Interviewee:** I worked with Man Met [Manchester Metropolitan University] on that.
7 Originally when we started staying at this hotel they made the arrangement because
8 they have an agreement so they give us a favourable rate. This year we sort of did it
9 concurrently. The answer to your question I guess is yes, it was planned by us with the
10 help of Manchester Metropolitan University who became sort of an intermediary.

11 **Interviewer:** What would you say the main reason for choosing this particular hotel
12 was?

13 **Interviewee:** Location. The fact that we do have the tie in with Manchester
14 Metropolitan University which gives us the special rate at this hotel. Proximity to
15 restaurants. We have stayed here before. The price is right for us. I know there are
16 other, bigger, more elegant hotels. We travel on a budget so we are looking for
17 something that is what we consider to be a medium price hotel that still has ensuite
18 bathrooms, but location is a big factor.

19 **Interviewer:** How did you arrive in Manchester?

20 **Interviewee:** We travelled by plane to Manchester Airport.

21 **Interviewer:** And how did you then complete your journey to the City Centre?

22 **Interviewee:** By cab

23 **Interviewer:** Did the whole group of you travel by cab?

24 **Interviewee:** We arrived at different times because people made different airline
25 reservations and so we didn't come en masse as a group but everyone just came in more
26 or less one way or the other by cab. Two of the people that are part of our group came
27 earlier and Jean Roebuck [from Manchester Metropolitan University] met them and
28 they came by car but the rest of us were too numerous to do that kind of transportation
29 so we went by cab.

30 **Interviewer:** When you arrived at the airport did you have a choice of mode of
31 transport for your onward journey or was it prearranged for you?

32 **Interviewee:** We had a choice and two of the people in our group who arrived and
33 had no luggage because it got left behind at Amsterdam did take the train and came into
34 Piccadilly Station and some of the other people in our group came from London
35 because they made their reservations round trip from London and they took the train to
36 Piccadilly from London then came by cab to the hotel

37 **Interviewer:** Looking at your own personal travel behaviour when you arrived at the
38 airport, what was the main reason for not choosing public transport? Were you aware,
39 as a returning visitor for example, that there were public transport links from the airport
40 to the city centre?

41 **Interviewee:** I am aware that there is public transport and the main reason is that I
42 have a lot of heavy luggage and that doesn't work very well with public transport. It's
43 too far to carry it.

44 **Interviewer:** Have you had any opportunity to travel around while you have been
45 here, either within or outside of the City Centre?

46 **Interviewee:** Personally I have not because I have been busy doing business. I've
47 travelled within the City Centre and I've used cabs for the trips that I've taken in the
48 City Centre. On this visit I haven't used any other transportation at this point in time
49 except cabs and we've been picked up in private cars. I have in the past ridden on the
50 tram. We've used the bus in Manchester. Some of the people in our group ... erm, one
51 woman whose husband was here and who is not a faculty member took a cab and went
52 to Trafford Park to shop and then she came back by bus and she was very pleased with
53 the visitors' centre at Trafford Park that told her how to get back by bus, she thought it
54 was a wonderful service. I have taken the train from here to London and also from here
55 to Stoke-on-Trent and to Leeds so I've used that kind of public transport.

56 **Interviewer:** You say you've used the Metrolink, the bus and the local trains, what
57 were your impressions of those modes of public transport which you have used?

58 **Interviewee:** My impressions have all been very positive. If I were to go back and
59 use the tram again, and I've been on the tram three or four times I suppose, I would
60 have to have somebody tell me again how to use because I haven't done it often enough
61 and I have to figure out what the prices are and so on, but it's not a difficult thing and
62 every time we've tried to do it there was someone that said "Oh yeah, you put this in
63 and this in and you do it this way". The equipment and the ride and all that sort of thing
64 were very satisfactory and comfortable and I think it's a very nice form of
65 transportation.

66 **Interviewer:** So would you be willing to repeat the journey?

67 **Interviewee:** Oh yes, absolutely.

68 **Interviewer:** As regards the modes of transport you have used, is there one that
69 particularly stuck out as more efficient or in any way more favourable than the other?

70 **Interviewee:** Erm, not particularly. In each case I was going to a particular place or
71 we chose the mode of transportation just based on where it was, and in all cases they
72 were fine so I have a very favourable impression.

73 **Interviewer:** When you say you based the mode of transportation on where it was,
74 what do you mean by that?

75 **Interviewee:** Well, where I wanted to go and where it was located. I think that the
76 times I used the tram, if I think about it, were when we've gone to the Museum of
77 Science and Industry either together or sometimes we have gone by cab and taken the
78 tram to return because we've walked over to see the Roman Walls and we've done it
79 that way. And so, that [Metrolink] was there and I didn't know if there was a bus or
80 some other form that would get us to the same place but I did know that worked so we
81 used that. I've used the bus to get to Rusholme and to go to Platt Hall. I guess those
82 are the routes that I've used.

83 **Interviewer:** You talked earlier about travel information and I'm interested in any
84 sources of information on public transport or on transport in general that you've had
85 since you've been here and secondly how you yourself went about getting the
86 information in order to establish by which mode of transport you could reach your
87 destination

88 **Interviewee:** Now, the public transport that you are primarily concerned with is that
89 which is in the Manchester Metropolitan area, right?

90 **Interviewer:** That's right, yes.

91 **Interviewee:** I think when I have used the bus I have asked my acquaintances at
92 Manchester Metropolitan University which number I should look for and since the
93 routes that I have been seeking have been fairly straightforward they simply say "take
94 the 42 bus or the 45 bus" and then I've tried to determine where the bus stop was so
95 I've done that by word of mouth primarily or by looking at signs. And I suspect that
96 our knowledge about the tram is based primarily on walking through the City Centre
97 and seeing the tram come by, knowing it's there, seeing the tram line on the map,
98 knowing what it does and recognising where the stations are. I have picked up at the
99 City Centre various brochures and so forth and possibly some of my knowledge comes
100 from that too, but primarily I think I have asked questions of people who were there or
101 individuals that I know at the point in time when I needed to use it rather than making
102 gigantic plans a long time in advance. Now, I do have information about the buses
103 which is a little folder or flyer which I give to my students who are coming here to
104 study, just to tell them ahead of time that when they get here they will want to purchase
105 a bus pass and that it has an on and off privilege [?] that makes it a very economical
106 from of transportation.

107 **Interviewer:** So is that information about how the system works?

108 **Interviewee:** Right. Exactly, and then I let them worry about timetable information
109 when they get here because they are in different locations in the city and it's different at
110 different times of the day. I just try to acquaint them with the fact that there is a good
111 bus system and that they will need to use it and talk to their fellow students to get the
112 exact details.

113 **Interviewer:** Do you know where you originally got this brochure that you are talking
114 about that you gave your students?

115 **Interviewee:** I think I probably picked that up at City Centre. When I come I'm
116 prone to go there and pick up a little stack of publicity material and I keep that in my
117 files so that I can hand it out to the students.

118 **Interviewer:** Have you had any contact with the travel shop in Piccadilly at all?

119 **Interviewee:** No I haven't.

120 **Interviewer:** Did you know about it?

121 **Interviewee:** I don't even know about that.

122 **Interviewer:** Are you a public transport user at home for work or for pleasure?

123 **Interviewee:** [laughing] That's a wonderful question. We have no public transport.
124 That's non-existent where I live. I live in the state of South Dakota which is in the
125 middle part of the United States. We are a state with less than 750,000 in a State that's
126 half the size of England so there is one city of 100,000 people and they have a city bus
127 system of sorts which I have never used. We drive cars. And in Brookings (?) where I
128 live, which has about 17,000 people, the only thing that is at all a public transport
129 system is the public school bus system which is exclusively for the use of students in
130 the public school and they have a route and they pick up those kids that live some
131 distance from the school and bring them to school but that's not something that the
132 public can have access to. There is one taxi cab in the city and that's it. I've never used
133 it. So no. Now I lived in Chicago many years ago, 15 years ago, and I used public
134 transport every day so I am familiar with using public transport.

135 **Interviewer:** So would you say you are a dedicated car driver?

136 **Interviewee:** If the public transport is good and is convenient – in Chicago we lived
137 in a high rise apartment, about a 15 storey apartment, about 20 to 30 minutes from
138 where I worked and the bus came right to the doorstep virtually and it was far easier
139 than trying to park and drive into the city so I used it every day routinely. We drove
140 our car on weekends only. Sometimes not even on weekends if we were going to the
141 centre of the city it was still easier to go on the bus, so I am dedicated in that, but if
142 there is none, or if it's very inconvenient, as it is in a lot of places because the buses run
143 every two hours or something like that, then I would drive.

144 **Interviewer:** Have you used public transport abroad apart from in Manchester or
145 apart from in England.

146 **Interviewee:** Erm, in Paris, in the Netherlands, I guess in the Netherlands it was
147 primarily the trains from one city to the next rather than public transport but I have in
148 Paris. I've used public transport in China, Korea, Hong Kong.

149 **Interviewer:** How would you say that the public transport you have used in
150 Manchester would compare with public transport at home, say Chicago and secondly
151 with Paris?

152 **Interviewee:** Erm, in the all of the places, each one is different a little bit. They work
153 pretty well, some have different strengths and weaknesses. I think your tram system,
154 which seems new, has very nice equipment, it seems clean and fast and quiet,
155 comfortable and of course we love your double-decker buses 'cos we don't have those
156 in the US so that's fun here. And it seems very workable. The frequency with which
157 things run also makes a difference as to how you perceive them. If they come relatively
158 often so you don't have to stand on the street corner and get cold or hot in the summer
159 time they you enjoy it more, not standing around being physically uncomfortable, but I
160 haven't encountered that in Manchester so I've been very happy with the Manchester
161 public transport system. We do a lot of walking here too cos it's convenient.

162 **Interviewer:** Can you think of any particular problem that you may have had with the
163 public transport system in Manchester either information wise, actually using the
164 system.

165 **Interviewee:** I haven't had any problems but I can't say that I've used it so I probably
166 would have problems if I'd tried to figure out some difficult place to get or something
167 like that.

168 **Interviewee:** Would you now where to go to get that information?

169 **Interviewer:** I probably wouldn't. I'd probably ask someone else that was standing
170 there to help me or I might try to go to a store or a business that was close by if I were
171 having a problem.

172 **Interviewer:** Is there anywhere that you may have wanted to visit while you've been
173 in Manchester that you haven't been able to get to because of either a lack of local
174 knowledge or that you've actually researched how to get to and found out that the
175 location is not accessible by public transport.

176 **Interviewee:** I haven't had that problem. Again it's because we have networks here.
177 When I've been going to visit some of the other campuses of Manchester Metropolitan
178 University for example, we've either had my contact person at the university who has
179 picked me up and taken me or we've used cabs rather than public transport because that
180 is easier in the sense that you depend on the cab driver to know where you are going.
181 We went to visit Paula Betteridge [?] at University of Salford on Tuesday and we took
182 a cab over there and a friend met us and brought us back. Later that afternoon that
183 same friend took me and another faculty member to the Ordsall House.

184 **Interviewer:** Do you mean Ordsall Hall?

185 **Interviewee:** Ordsall Hall. It's very interesting. Now that looked to me like it might
186 be a hard place to get to if you didn't have your own transportation but I've never tried

187 to do it because this good friend has always taken me. I've been there twice and each
188 time I've been taken there.

189 **Interviewer:** Can you think of any way that would make it easier for you or make it
190 more likely that you would have used public transport e.g. to have gone to University of
191 Salford to have got to Ordsall Hall?

192 **Interviewee:** Oh, that's a good question and it's a relevant question now and I'll tell
193 you why I'm thinking of this. If I knew (and this information is probably available) if I
194 knew that there was a place I could make a telephone call and they would tell me "you
195 stand on the corner of Princess and Portland [Streets] and watch for the 42 bus going a
196 certain direction and get on that bus and then you change at such-and-such a place" I'd
197 probably be willing to do that. Now you said there is an information place at
198 Piccadilly.

199 **Interviewer:** That's right. They do actually have a hotline number as well.

200 **Interviewee:** OK, if you would give me that hotline number I would be grateful. In
201 May 19 students from our college of pharmacy are coming with one faculty member
202 and they will be doing presentations at the university but I suspect that that group is
203 going to want to use public transport quite a bit and so they are going to need access to
204 that hotline so they can figure out if they are going some place that's, as you say, off the
205 beaten track, a little bit out of the way where they are not going to walk to.

206 **Interviewer:** Have you tried to obtain any public transport information from the hotel
207 at all?

208 **Interviewee:** Erm, I don't think that I have. The hotel has been very helpful with all
209 kinds of information. I just don't think I've asked for that. Now, question. The wife of
210 the faculty member that went to Trafford Park got information about how to get there,
211 no she took a cab, then she got her information at the information booth at the Shopping
212 Centre and she made a point to wax very enthusiastically about that so that's one
213 recommendation that I can give.

214 **Interviewer:** How would you feel about using interactive technology, say in the hotel
215 or a kiosk, which provided transport information on demand?

216 **Interviewee:** That would be very nice. And if we knew it were in the hotel or ... my
217 students for example use the internet very, very often in preparing to come here and one
218 of the things that I have in my files at my office are the pages that one of the students
219 printed out about the Manchester Airport and that has information about how to take
220 the train into the city. That's in my file, and I just haven't used it 'cos I knew I couldn't
221 haul all my luggage myself and get on and off the trains. It's not functional. But, as I
222 told you earlier, our faculty members that didn't have luggage found that a very nice
223 way to get into the city. And it's always faster than something on the roadway where
224 you run into traffic.

225 **Interviewer:** Going back to this idea of providing information, do you think that sort
226 of transport information would be more useful in advance of your trip or on site, for
227 example in the hotel or at the bus depot or the Metrolink station?

228 **Interviewee:** From our perspective, in our situation, which is probably somewhat
229 different to the vast majority of travellers that you have, you need all three. But having
230 it ahead of time, so that we could print it off from the internet, would be nice and I
231 would tell the faculty member that was coming just to print it and put in their pack of
232 information to bring with them so they had it. And if it's up to date, so that if there
233 have been time changes or a new station has been added or something like that, it's
234 more useable. But once you get ... when you've never been here, and you really don't
235 know where you're going that is sometimes a little obscure so when that person arrives,
236 that's when they really need to have immediate access to it, either, as you said at some
237 sort of kiosk in the hotel and certainly by the bus stops so that you can look up and see.
238 I like the maps for example that say "you are here" and the way that the streets are laid
239 out. Those are very useful and I use those quite often when I'm walking around the
240 city.

241 **Interviewer:** What sort of information then do you think would be required by a
242 traveller such as yourself? Would it be purely timetable information for example?

243 **Interviewee:** Timetabling would be helpful. If you are talking about buses, the two
244 or three minutes or the five or ten minutes aren't that critical because buses are so
245 subject to traffic delays or speeding up. More importantly it would be nice to know if
246 this bus runs only every two hours so you don't end up with a 2 o'clock and it's now
247 2.15 and you're gonna have to wait until 4 for the next one. But more importantly you
248 need to know what route that bus goes on so that you can figure out if you're going to
249 go to the right place. That's more critical than time.

250 **Interviewer:** How do you envisage that?

251 **Interviewee:** Visual or a map probably is the best thing.

252 **Interviewer:** What about things like information on how the system works, ticketing
253 information, that sort of thing?

254 **Interviewee:** That's important. That can be pretty complicated. You can't have a
255 whole [??] for it standing on a street corner. Now the ticketing information at the
256 Metro that we've used as I remember, and I haven't used the Metro this time, but as I
257 remember it was easy to understand. I know we got some help with it understanding
258 the right thing because we were having trouble with the coins and having the right
259 combination of coins rather than the fact that we didn't understand exactly what we
260 needed to be doing and then you get a ticket don't you? You put in so many coins and
261 then you get a ticket?

262 **Interviewer:** That's right. Do you have any problem with automated ticketing?

263 **Interviewee:** No.

264 **Interviewer:** Do you think that the public transport network in Greater Manchester,
265 or your experience of it at least (I know you haven't used it that extensively) has had
266 any effect, either positive or negative on your perception of Manchester as a city and
267 your image of the city?

268 **Interviewee:** Oh, well I would say my positive impression was that, unlike most
269 American cities, where we don't have much public transport I could get on a public bus
270 and go to Platt Hall to look at the costumes which was one thing that I wanted to do,
271 without taking a more expensive cab. So I see it as a low cost alternative to taking a
272 cab and if I'm not pressed for time or needing to arrive for an appointment or I haven't
273 gotten wet or something like that I'll take the bus. I'm enough of an academic that I
274 know how to take money and put the extra time into it unless there are other
275 extenuating circumstances. So that's given me a positive feeling and I use that as a plus
276 to my students that come to Manchester to study at Manchester Metropolitan University
277 and I tell them "you will buy a bus pass. You can get on and off the bus at your
278 convenience. You can go two blocks if you want to. That's a real asset. It makes it
279 easy for you to get around in the city and see a lot of the city for a very low cost, so part
280 of my impression of the bus system is really the feedback I get from my students who
281 use it a great deal more than I do.

282 **Interviewer:** Would these be students who perhaps aren't used to travelling on public
283 transport?

284 **Interviewee:** Oh absolutely. Last year one of the young ladies that came from SDSU
285 [South Dakota State University] had never been on a public bus and that was quite a
286 daunting experience for her at the beginning and at first she was intimidated by the fact
287 that she didn't know what she was doing. She's one of these control freaks that likes to
288 have everything lined up.

289 **Interviewer:** Do you think advance information would have helped?

290 **Interviewee:** Well, no I think we had given her as much prior information as we
291 could or she needed to have. I think she just needed to try it a few times and she
292 discovered that she had to allow a little more time to get to class because she missed the
293 start of her first class because the bus didn't come quite on time. And that goes with the
294 territory. So she learned, and after that she started a little earlier. But yes, we have
295 students that are very unfamiliar with public transportation because they just have never
296 had any occasion to use it or any public transport that was available to them.

297 **Interviewer:** There was actually an article, I don't know if you read it, in the
298 Manchester Evening News. It may actually have been the week before you arrived, are
299 you familiar with the MEN? It's the local paper. It was about a travel information
300 website in the States which was giving information on travel in Manchester, actually
301 recommending that visitors didn't use the Metrolink, particularly at night, because it
302 was dirty, noisy and unsafe. I'm just wondering whether you would have any feedback
303 on that?

304 **Interviewee:** I haven't and I haven't talked to the students about that. Now I usually
305 do tell them, and they pick this up from fellow students, that if it's late at night and
306 there aren't many people on the system, that they probably should take a cab and that
307 they should use it at night by themselves but should always have a companion with
308 them. That's something that we think we are obligated to do just because our students
309 are pretty naïve and they aren't used to being in places where there may be some
310 security problems. I don't ... it's interesting ... and I'm not sure that I've ever given
311 them any kind of time frame. I sort of leave that up to the students and in fact, we

312 encourage the student on our rural campus, which is very quiet and almost never has
313 any kind of adverse incident, not to travel around by themselves, walk on the campus
314 during the night.

315 **Interviewer:** I've just a couple of questions to finish off, which may or may not be
316 related. If you were in a foreign city, would you find that actually using the public
317 transport system might be something that you enjoy doing either as means or
318 orientating yourself around the city or of perhaps picking up on the local culture?

319 **Interviewee:** Erm, well it's more of a facility but for an example I went to a meeting
320 in Chicago this November and at that meeting there was an opportunity to participate in
321 some activities that used local transport and the idea was to get the students who were
322 kind of out and about in the city and have that kind of experience. The faculty member
323 that was with me, and myself did not have a chance to participate in that activity so the
324 next day we decided we would go away from the central location where our meeting
325 was to another place to have lunch and we purposely took public transportation so that
326 we would have that experience ourself.

327 **Interviewer:** Do you think that's something you would be willing do in a foreign city,
328 a city where you either didn't have local knowledge or there was a language barrier?

329 **Interviewee:** It kind of depends. I've ridden the buses in China for example where
330 we taught. Now that is an interesting experience. Let me tell you that any bus you
331 have in Manchester is 200 times better than buses in China which have broken
332 windows and seats that are broken and people that are jammed together so close that
333 you can feel every bone in their body standing next to you and a fare system that we
334 never did figure out. We never rode buses without going with a person who spoke
335 Chinese or who was a Chinese person because we did not comprehend their fare system
336 and of course they couldn't understand English. We rode the buses when we had an
337 escort because it was convenient and we could get places that we couldn't when we
338 were operating on a budget that we wanted to stay within so we were being very
339 economical. But I don't think I would have ridden those buses by myself, even though
340 I'd been in the city for a while because if you got yourself into any kind of a strange
341 situation, there was not way you could extricate yourself. I've ridden the Metro in Paris
342 where I don't speak very good French, very terrible French as a matter of fact but I
343 could read the words so that wasn't too much of a problem. I've ridden buses in Korea
344 but I've always had somebody with me that knew what the system was. I wasn't doing
345 that by myself. I don't know. That's an interesting question. Whether I would be real
346 adventurous about riding public transport where I couldn't speak the language and
347 didn't have somebody to officiate ... I might be a little hesitant.

348 **Interviewer:** OK, I think that's it Harriet, thanks [etc]

APPENDIX 4
SAMPLE INTERVIEW WITH UK RESIDENT

Interview with Ms J
Nationality British
Travelling with group of 3 friends to Barcelona
Leisure visitor
First time visitor to Barcelona.
Flew there from Manchester Airport

1 **Interviewer:** I'd like to ask a few questions about the organisation of your trip first of
2 all. Was your travel and accommodation organised before you left home?

3 **Interviewee:** No. The flights were already organised and we had a hire car as well,
4 which was organised, but the hotel was organised while we were in Spain. We
5 organised it as we needed it. It was arranged with one of the women I went with who is
6 Spanish.

7 **Interviewer:** What would you say were the reasons for choosing the accommodation
8 that you did?

9 **Interviewee:** It was mainly price but also proximity to the city centre. It was also
10 quite easy to get to.

11 **Interviewer:** How did you make your onward journey from the airport, on your
12 arrival in Spain?

13 **Interviewee:** You see, we picked up a hire car and drove to Santiago, then we drove
14 to Barcelona on the way back.

15 **Interviewer:** Did you still have the hire car while you were in Barcelona?

16 **Interviewee:** Yes, but it was in the garage, we didn't use it.

17 **Interviewer:** Would you say you had a choice of what mode of transport you used
18 when you were in Barcelona?

19 **Interviewee:** Yes. We had a choice and we chose not to use the hire car.

20 **Interviewer:** How did you travel around then when you were in Barcelona?

21 **Interviewee:** On the Metro, the local train.

22 **Interviewer:** What were your reasons for choosing that particular mode of transport?

23 **Interviewee:** Well, it would have been madness to drive the car, the traffic was so
24 crazy and the Metro station was very close to our hotel, it was probably about 1 minute

25 walk, and it took 6 minutes to get into the very centre of town on the Metro. We did
26 take a couple of taxis, but it was mainly Metro.

27 **Interviewer:** What were your general impressions of the Metro?

28 **Interviewee:** Well, it was dead on time, very easy to get to, air conditioned,
29 comfortable, it just seemed to be very well organised really and it was pretty
30 inexpensive as well.

31 **Interviewer:** What about the actual system, e.g. ticketing?

32 **Interviewee:** It was all automated, well, from the station we had to go from it was all
33 automated and they gave you a choice of languages and it was a menu driven choice, so
34 it was all pretty simple. I think if you were a technophobe it might have been a little bit
35 scary, but as it was, we weren't so it was all very easy. It was basically a ticket
36 machine, but in different languages so language wasn't an issue, although that wasn't
37 blatantly obvious when we arrived we first arrived at the ticket machine. It wasn't
38 obvious that it gave you a choice of 6 languages. That was kind of the third option
39 down.

40 **Interviewer:** As someone who hadn't been to Barcelona before did you have any
41 problems finding your way around?

42 **Interviewee:** No, the maps on the Metro were very good and we had a guidebook as
43 well.

44 **Interviewer:** Did you use the guidebook for public transport information?

45 **Interviewee:** No, not really, no we didn't actually.

46 **Interviewer:** How did you get the information on the Metro then?

47 **Interviewee:** We asked at the hotel.

48 **Interviewer:** Was the hotel able to give you the information that you wanted?

49 **Interviewee:** Yes.

50 **Interviewer:** Do you think that the fact that the information was easily available to
51 you made a difference to your mode of transport choice?

52 **Interviewee:** I think I would have chosen the train whatever, but it made it easier.
53 When I go to a foreign city I usually use the Metro because they generally have a Metro
54 system of some description. I find the buses a little bit more difficult to negotiate
55 because I think often you require a certain amount of local knowledge to be able to
56 manoeuvre on the bus.

57 **Interviewer:** In an ideal world, how would you like public transport to be available
58 to you for journeys abroad?

59 **Interviewee:** I suppose if you go to a travel agent, it would be nice if they could
60 provide you with some sort of guide to the transport system of your destination for
61 example. To be perfectly honest I've never really had much difficulty. I will read a
62 book before I go. I will use a guide book and that will generally give you an idea of the
63 system and then, if you stay in a hotel, they generally provide you with transport
64 information.

65 **Interviewer:** Do you use public transport at home for business or leisure.

66 **Interviewee:** I try not to, but I have been known to. If my car is out of action, I might
67 have to get the train from Manchester or Liverpool to St Helens. In fact I take the bus,
68 but I'm mainly a car user.

69 **Interviewer:** How would you access public transport information at home should you
70 need it?

71 **Interviewee:** I'd use the telephone enquiry line.

72 **Interviewer:** Do you ever use the internet for planning your travel or for public
73 transport information?

74 **Interviewee:** I have done, but I'm only really connected at work, so I think I would if
75 I had an internet connection at home, then I think I would use it because I do find it
76 easy to navigate around.

77 **Interviewer:** If you knew that the information you required was available on the
78 internet (e.g. how to travel from the airport to your hotel in a foreign city) would you
79 use that information?

80 **Interviewee:** Yes, definitely.

81 **Interviewer:** Do you think that having that information in advance would make a
82 difference to your choice of mode of transport on arrival?

83 **Interviewee:** Oh yeah, because if you are forearmed then you ... I mean it's the
84 cheapest mode of transport generally, it's generally cheaper than getting a taxi from the
85 airport and if I knew it wasn't too difficult then yeah I'd plan it before hand and use
86 public transport.

87 **Interviewer:** So would you prefer to have the information in advance?

88 **Interviewee:** Yeah.

89 **Interviewer:** In terms of public transport information at the destination, what would
90 be the best way for you to obtain access to that?

91 **Interviewee:** If I could walk to a computer terminal and be guided easily by a menu
92 driven system, say that was specific to that area, and you could print it off and keep it
93 and refer to it, then that would be my ideal way.

94 **Interviewer:** Did you find anything like that when you were in Barcelona?

- 95 **Interviewee:** With having somebody Spanish with us, we didn't really need to, so it
96 wasn't kind of necessary for me to. But if I hadn't had, I think I would have managed
97 fine. There seemed to be a lot of electronic things around and I think I would have
98 found the information somewhere.
- 99 **Interviewer:** You say the fact that you had a Spanish person with you made it easier;
100 did you actually have to ask for information while you were in the City Centre?
- 101 **Interviewee:** We did have to ask for directions to a certain Gaudi building, but that
102 was walkable and that was it really. We planned it pretty well in advance.
- 103 **Interviewer:** How would you say that the modes of transport you used compared to
104 the same modes of transport at home in Manchester?
- 105 **Interviewee:** It just seems much better organised. I think I trusted the timing better.
106 It was more comfortable, cheaper, straightforward to use.
- 107 **Interviewer:** Was security an issue for you with regard to public transport?
- 108 **Interviewee:** Not really. We did travel at night but I was always with at least one
109 other person.
- 110 **Interviewer:** Did you have any particular problems with the public transport system
111 in Barcelona.
- 112 **Interviewee:** Well on a journey from the hotel to a specific place we had to change
113 trains and it wasn't obvious that you had to actually exit the system and come back into
114 the system as opposed to just changing within the network. It was slightly confusing
115 with the ticket situation. That was about it. Although there was a bit of excavation
116 going on on one of the tracks and one of the signs wasn't particularly obvious and we
117 did have to ask somebody.
- 118 **Interviewer:** Can you think of any fundamental or general amendments which could
119 make the public transport system in Barcelona more user friendly or more foreigner
120 friendly?
- 121 **Interviewee:** I think it should be made more obvious that the ticket machine is in
122 several languages. That should be the first thing people see really as opposed to having
123 to scan the screen because it could be frightening for some people. Most of the signs
124 were in English as well as Spanish and that was the case throughout the country really.
125 It would have been nice to have a person to speak to at one point when we got a bit ...
126 when we realised there was just a machine and we weren't quite familiar with it, it
127 would have been nice to have a person. That was about it really, we had a really good
128 experience there, I can't really offer anything more critical than that.
- 129 **Interviewer:** Would you say that the public transport journeys that you made had any
130 effect on your enjoyment of your holiday?
- 131 **Interviewee:** I think it had a positive effect because it was so easy and so quick. In
132 fact, our hotel, because it was so busy in Barcelona at that point, was slightly peripheral
133 but it still only took us 6 minutes to get into the Plas de Catalunya [?] which is near the

134 centre of town. So it made it better for us as we were a little bit far out and it would
135 have cost considerably more in a taxi. That's it really.

136 **Interviewer:** Would you say that your experience of public transport in Barcelona has
137 had any effect on your perception of Barcelona as a city?

138 **Interviewee:** Yeah, definitely. I mean, if you have a bad experience trying to get
139 around, then it leaves a negative impression, so the fact that it was easy to get around
140 would make me think that I would go back there again, yes.

141 **Interviewer:** Are you the sort of person who sees public transport as part of the
142 holiday experience, in terms of the challenge of using it, or seeing it as a way of
143 orienting yourself around the city?

144 **Interviewee:** Oh yes, definitely. It is all part of the experience of the place really,
145 using public transport.

146 **Interviewer:** Is there anything else that you would like to bring up?

147 **Interviewee:** Not really, just that I would never use a bus, or very rarely would I use
148 the bus in another country because I just find a train system so much easier to cope
149 with. Everything is more obvious.

150 **Interviewer:** Would that also apply at home?

151 **Interviewee:** No, because I am familiar with the area so I would use the bus, because
152 I trust them a bit more than the trains and they are a lot less expensive.

153 **Interviewer:** Do you think that language is an issue in your unwillingness to use the
154 bus abroad?

155 **Interviewee:** Yeah, definitely, that's the main issue. It would be very difficult for me
156 to explain in Spanish, because I speak very little, where I wanted to go and that is
157 putting yourself in an embarrassing situation. You're stood at the front of a bus and
158 you can't speak the language and everyone is thinking you are a pain in the arse, when
159 you can generally jump on the train with no bother. But I've found the same in Paris
160 and New York. I would never get the bus there, it was always the Metro, because I just
161 found them easy, quick, cheap and reliable. Even in New York where they speak the
162 same language, I just find the train, generally the timetables, the way it links up is a lot
163 easier to see, it's visual. The timetables are well publicised and they are generally
164 adhered to. That is my perception.

165 **Interviewer:** Have you every tried to use a bus map, either at home or abroad?

166 **Interviewee:** No.

167 **Interviewer:** I asked you before to compare your experiences of public transport in
168 Manchester and in Barcelona. Can you think of any features of the public transport
169 system in Greater Manchester that might cause problems for visitors?

170 **Interviewee:** Well, if walk into the bus station in Manchester, the last time I went
171 there I found it difficult to establish which bus went where. I had to ask a couple of
172 people before I found the right stand. That is bound to be difficult for a visitor to
173 negotiate, particularly if their first language isn't English. My perception is that
174 Piccadilly bus station is crazy in terms of the amount of traffic and the apparent
175 disorganisation. One thing I did think about was the tram system. Although I have
176 never used it, it does appear to be a good system. It appears to be well used, it looks
177 comfortable etc. If it was offered to more places, I think that I would probably be more
178 likely to use it than a bus. They're not constrained by traffic, it's just straight there.
179 Another thing about Barcelona is that the traffic is so crazy the thought of being driven
180 around a bus, it seems that it would take a lot longer.

181 **Interviewer:** Thank you very much for taking the time to speak to me. That is the
182 end of the interview.

**APPENDIX 5
ACCOMMODATION PROVIDERS AGREEING TO DISTRIBUTE SELF-COMPLETE QUESTIONNAIRES TO
OVERSEAS VISITORS**

ID For Questionnaires Sent to Hotel	Hotel Name	Hotel Address	Hotel Telephone Number	Hotel Contact	Contact's Position
001-30	Britannia Hotel	35 Portland Street, MANCHESTER M1 3LA	0161 228 2288	Russ Morrison	Manager
31-60	Castlefield Hotel	Liverpool Road, M3 4JR	0161 832 7073	Lesley Hanley	Manager
61-90	Comfort Inn	Birch Street, Hyde Road, MANCHESTER M12 5NT	0161 220 8700	Kate McGovern	Manager
91-120	Copthorne Manchester	Clippers Quay, Salford Quays, SALFORD M5 2XP	0161 873 7321	Tony Hill	General Manager
481-510	Diamonds Hotel Ltd	Liverpool Street, Salford, M5	0161 743 0080	Andrew Gosling	General Manager
121-150	Diamonds Hotel Manchester East	Hyde Road, Bellevue, Manchester M18 7BA	0161 231 0770	John Carr	General Manager
151-180	Dolby Hotel Manchester	55 Blackfriars Street, MANCHESTER M3 7DB	0161 907 2277	Simon McLaughlin	Manager
181-210	Hazeldean Hotel	467 Bury New Road, Salford M7 3NE	0161 792 6667	Margo Allen	Manageress
211-240	Jarvis Piccadilly Hotel	PO Box 107, Piccadilly Plaza, MANCHESTER M60 1QR	0161 236 8414	Calum Ross	Manager
241-270	Malmaison	Gore Street, Piccadilly, Manchester M1 3AQ	0161 278 1000	Philip Mahoney	Manager
271-300	Monton House Hotel	116-118 Monton Road, Monton, Eccles, SALFORD M30 9HG	0161 789 7811	Michael Doe	Manager
301-330	Portland Thistle Hotel	3-5 Portland Street, Piccadilly Gardens, MANCHESTER M1 6DP	0161 228 3400	Julie Roberts	Sales Manager
331-360	Sachas Hotel	Tib Street, Piccadilly, MANCHESTER M4 1SH	0161 228 1234	Patrick Fitzgerald	Manager
361-390	Travel Inn	11 The Quays, Salford Quays, M5 2SQ	0161 872 4026	James Knight	Manager
391-420	Travel Inn	Bury New Road, Prestwich, Manchester M25	0161 798 0827	Cath Barlow	Manageress
421-450	Willow Bank Hotel	340 Wilmslow Road, M14	0161 224 0461	Mark Baker	Manager
451-480	Woodies Backpackers' Hostel	19 Blossom Street, Ancoats, Manchester M4 6AA	0161 228 3456	Mark Hunter	Manager

APPENDIX 6
OCCURRENCE OF VISITOR ATTRACTIONS’ PROMOTIONAL
MATERIAL IN HOTELS

Greater Manchester Attraction	Number of Hotels Holding Marketing Information on Attraction	Is Attraction Within GMPTE Boundary?	Is Attraction Shown as Having a Rail or Metrolink Station Within 1 Mile in Manchester City Guide?	Is Attraction Shown as Having a Rail or Metrolink Station Within 1 Mile in Experience Manchester Booklet
Museum of Science and Industry	17	y	x	y
The Lowry	15	y	y	y
Manchester Museum	11	y	x	y
Manchester United	11	y	y	y
Quarry Bank Mill	11	y	x	x
Trafford Centre	10	y	x	n
Manchester Cathedral	9	y	n	y
Bramall Hall	8	y	n	y
Hat Museum	8	y	y	y
Pump House Museum	6	y	x	y
Middlebrook Exhibition Centre	5	y	n	y
Whitworth Art Gallery	5	y	x	x
John Rylands Library	4	y		y
Craft and Design Centre	3	y	n	x
East Lancs Railway	3	y		y
Wigan Pier	3	y	x	y
Castlefield Urban Heritage Park	2	y	x	y
City Art Gallery	2	y	x	y

Key

y signifies attraction shown as having rail or Metrolink station within 1 mile

x signifies attraction not shown as having rail or Metrolink station within 1 mile

n signifies no transport information provided on attraction

APPENDIX 7
OVERSEAS VISITOR QUESTIONNAIRE ADMINISTERED AT ATTRACTIONS

SURVEY OF OVERSEAS VISITORS' USE OF TRANSPORT IN GREATER MANCHESTER

ALL COMPLETED QUESTIONNAIRES WILL BE ENTERED FOR A PRIZE DRAW TO WIN £200 OF BRITISH AIRWAYS TRAVEL VOUCHERS. PLEASE COMPLETE THE QUESTIONNAIRE FULLY AND REMEMBER TO FILL IN YOUR NAME AND ADDRESS AT THE END.

THIS QUESTIONNAIRE HAS BEEN DESIGNED TO FIND OUT WHAT YOU THINK ABOUT PUBLIC TRANSPORT IN GREATER MANCHESTER AND HOW YOU HAVE USED IT. THE INFORMATION YOU PROVIDE WILL BE TREATED IN THE STRICTEST CONFIDENCE. THANK YOU.

IMPORTANT

YOU MUST ONLY COMPLETE THIS QUESTIONNAIRE IF THE FOLLOWING STATEMENTS APPLY TO YOU (PLEASE TICK BOXES FOR VERIFICATION):

1. I have not spent more than 12 months in the UK on this visit.
2. I have not been paid from within the UK for any activity undertaken during this visit.

Please answer each question by ticking the appropriate box or writing in the space provided.

Section A ABOUT YOUR STAY IN MANCHESTER

Q 1 How many times have you visited Greater Manchester?

	First visit
	2 – 3 times
	4 – 5 times
	6 – 9 times
	Ten or more times

Q 2 How long do you plan to stay in Greater Manchester in total ?

	Less than 1 night
	One night
	2 – 3 nights
	4 – 7 nights
	8 – 14 nights
	More than 14 nights

Q 3 How long have you been in Greater Manchester already ?

	Less than 1 night
	One night
	2 – 3 nights
	4 – 7 nights
	8 – 14 nights
	More than 14 nights

Q 4 What is the main purpose of your visit ?

	Leisure (organised group)
	Leisure (independent traveller)
	Business and professional
	Visiting Friends/Relatives
	Health treatment
	Education
	Other (Please write below)

Q 5 Please circle any of the following activities that you have been involved in during your stay:

playing sport; spectating sport; special event;

cultural/heritage activities; general sightseeing; shopping

Q 6 Who are you travelling around Greater Manchester with? (please insert the **number** of people in each case)

	Alone
	Partner
Number	
	Children younger than 5 years old
	Friends
	Family
	Colleagues
	Other group (please write below)

Q 7 In what type of accommodation are you currently staying?

	Hotel
	Guest House/B &B
	Self Catering
	With Friends/ Family
	Youth Hostel
	Other (Please write below)

Q 8 Where is your accommodation located ?

Area/District _____

Street _____ OR

Hotel Name _____

Q 9 By what form of transport did you arrive in the UK?

Q 10 By what form of transport did you arrive in

Greater Manchester?

Q 11 Please indicate (by circling the appropriate number on each scale) how **important** the following aspects of transport are to you **at any overseas destination**.

	Extremely Unimportant	Very Unimportant	Fairly Unimportant	Neither Unimportant nor Important	Fairly Important	Very Important	Extremely Important	No Opinion
1. Vehicle Safety	1	2	3	4	5	6	7	0
2. Arriving on time	1	2	3	4	5	6	7	0
3. Speed of service	1	2	3	4	5	6	7	0
4. Ticket price	1	2	3	4	5	6	7	0
5. Cost of car parking	1	2	3	4	5	6	7	0
6. Cleanliness of vehicles	1	2	3	4	5	6	7	0
7. Cleanliness of stations/stops	1	2	3	4	5	6	7	0
8. Easy ticketing system	1	2	3	4	5	6	7	0
9. Access to attractions by public transport	1	2	3	4	5	6	7	0
10. Helpful personnel	1	2	3	4	5	6	7	0
11. Special public transport travel pass for tourists	1	2	3	4	5	6	7	0
12. Effective customer service	1	2	3	4	5	6	7	0
13. Information about public transport	1	2	3	4	5	6	7	0
14. Personal security	1	2	3	4	5	6	7	0
15. Easy parking	1	2	3	4	5	6	7	0
16. Easy to use	1	2	3	4	5	6	7	0

Q 12 Please indicate (by circling the appropriate number on each scale) your level of agreement with the following statements about your choice of transport **at any overseas destination**.

	Very Strongly Agree	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Very Strongly Disagree	No Opinion
1. I use public transport when travelling with small children	1	2	3	4	5	6	7	0
2. I find it easy to obtain information for journeys by public transport	1	2	3	4	5	6	7	0
3. I use public transport when overseas despite possible language difficulties	1	2	3	4	5	6	7	0
4. Public transport is a safe way to travel	1	2	3	4	5	6	7	0
5. I use public transport when travelling with heavy bags	1	2	3	4	5	6	7	0
6. I feel my personal safety may be threatened by other passengers	1	2	3	4	5	6	7	0
7. I like to have information on the public transport system at my intended destination before leaving home	1	2	3	4	5	6	7	0
8. I like to drive in foreign cities.	1	2	3	4	5	6	7	0
9. I like to walk in foreign cities	1	2	3	4	5	6	7	0
10. I like to cycle in foreign cities	1	2	3	4	5	6	7	0

Q 13 Which of the following items of information would you require to make a journey by public transport in a foreign city? (please tick all that apply).

Items of information required	Tick here if required	Items of information required	Tick here if required
Departure time		Where to get on	
Frequency		Where to get off	
Route		Where to change	
Number (bus only)		Final destination of route	
Price		Where to buy a ticket	
Arrival time		Name of service operator	
Journey length		Other (please write below) _____	

Section B *ABOUT YOUR TRAVEL IN MANCHESTER*

Q 1 Please indicate (by placing a **number in the appropriate boxes**) how many journeys you have made around Greater Manchester using each of the following forms of transport.

	Walking	Cycling	Bus	Train	Metrolink (Tram)	Taxi	Own Car	Private Coach	Hire Car	Other
Around the City Centre										
Around the Outskirts										
From City Centre to Outskirts										
From Outskirts to City Centre										

Q 2 Do you have use of a car (private, hired or borrowed) during your stay in Greater Manchester?

<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
--------------------------	-----	--------------------------	----

Q 3 Please rate (by circling the appropriate number on each scale) the usefulness of the following public transport information sources in Greater Manchester.

	Not at all useful	Quite useful	Very useful	Have not used
1. Tourist Attraction leaflets	1	2	3	0
2. Reception at accommodation	1	2	3	0
3. Internet	1	2	3	0
4. Public transport information leaflets	1	2	3	0
5. Public transport telephone information line	1	2	3	0
6. Public transport information centre	1	2	3	0
7. 'Experience Manchester' booklet	1	2	3	0
8. Manchester 'City Guide'	1	2	3	0
9. Tourist Information Centre	1	2	3	0
10. Local people	1	2	3	0
11. Other tourists	1	2	3	0

Q 4 Please tell us of any **other sources** of public transport information you have used during your stay in Greater Manchester

Q 5 By what form of transport did you make your journey here today?

	Walking		Bus
	Train		Metrolink (Tram)
	Taxi		Own car
	Private coach		Hire car
Other (please write below)			

Q 6 Please indicate **why** you used the above form of transport.

Q 7 Where did you get the transport information for the journey here today? (please tick all that apply)

	Tourist Attraction leaflets		Public transport information centre
	Reception at accommodation		'Experience Manchester' booklet
	Internet		Manchester 'City Guide'
	Public transport information leaflets		Tourist Information Centre
	Public transport telephone information line		Word of mouth
Other (please write below)			

Q 8 Please indicate (by circling the appropriate number on each scale) your level of agreement with the following statements about transport in **Greater Manchester**.

	Very Strongly Agree	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Very Strongly Disagree	No Opinion
1. Visitor attractions are easy to reach by public transport	1	2	3	4	5	6	7	0
2. The public transport network has influenced my choice of attractions to visit.	1	2	3	4	5	6	7	0
3. It is easy to park your car in Manchester	1	2	3	4	5	6	7	0
4. My car is safe when parked in Manchester	1	2	3	4	5	6	7	0
5. Public transport vehicles in Manchester are safe	1	2	3	4	5	6	7	0
6. Public transport in Manchester is expensive	1	2	3	4	5	6	7	0
7. Parking in Manchester is expensive	1	2	3	4	5	6	7	0
8. I would feel safe travelling alone on public transport in Manchester	1	2	3	4	5	6	7	0
9. Public transport in Manchester arrives on time	1	2	3	4	5	6	7	0
10. Public transport in Manchester is a fast way to travel	1	2	3	4	5	6	7	0
11. The public transport vehicles are clean	1	2	3	4	5	6	7	0
12. The public transport stations/ stops are clean	1	2	3	4	5	6	7	0
13. It is easy to buy the right ticket for your journey	1	2	3	4	5	6	7	0
14. Public transport staff are helpful	1	2	3	4	5	6	7	0
15. Any problems or questions I had were dealt with effectively	1	2	3	4	5	6	7	0
16. I am able to find the information needed to make journeys by public transport	1	2	3	4	5	6	7	0
17. Public transport in Manchester is easy to use	1	2	3	4	5	6	7	0
18. Some areas of Greater Manchester, which I would like to visit, are too difficult to travel to	1	2	3	4	5	6	7	0

Q 9 What is your **overall level of satisfaction** with Manchester as a visitor destination?

Extremely unsatisfied	Very unsatisfied	Unsatisfied	Neither satisfied nor unsatisfied	Satisfied	Very satisfied	Extremely satisfied	No Opinion
1	2	3	4	5	6	7	0

IF YOU HAVE NOT USED PUBLIC TRANSPORT IN GREATER MANCHESTER, PLEASE GO NOW TO SECTION C.

Q 10 What is your **overall level of satisfaction** with the different forms of public transport in Greater Manchester?

	Extremely unsatisfied	Very unsatisfied	Unsatisfied	Neither satisfied nor unsatisfied	Satisfied	Very satisfied	Extremely satisfied	No Opinion
1. Bus	1	2	3	4	5	6	7	0
2. Metrolink	1	2	3	4	5	6	7	0
3. Train	1	2	3	4	5	6	7	0

Q 11 How likely is it that you will **use any of the following forms of public transport** on future visits to Greater Manchester?

	Extremely unlikely	Very unlikely	Unlikely	Neither likely nor unlikely	Likely	Very likely	Extremely likely	Don't know
1. Bus	1	2	3	4	5	6	7	0
2. Metrolink	1	2	3	4	5	6	7	0
3. Train	1	2	3	4	5	6	7	0

Q 12 What do you **like most** about public transport in Greater Manchester?

Q 13 What do you **dislike most** about public transport in Greater Manchester?

Section C ABOUT YOU

Finally, to help us improve our service, please would you record a few details about yourself? (This information will enable us to analyse your responses to the previous questions more accurately. It will not be used for any other purpose).

Q 1 Are you

<input type="checkbox"/>	Male	<input type="checkbox"/>	Female
--------------------------	------	--------------------------	--------

Q 2 What is your age group ?

<input type="checkbox"/>	15 – 24
<input type="checkbox"/>	25 – 34
<input type="checkbox"/>	35 – 44
<input type="checkbox"/>	45 – 54
<input type="checkbox"/>	55 – 64
<input type="checkbox"/>	65 and Over

Q 3 Please state the Town or City and Country where you live.

Q 4 What country issued your passport ?

Q 5 What is your current job / occupation ?

Thank you for taking the time to complete this questionnaire. If you would like to be entered for the prize draw to win £200 of British Airways travel vouchers, please remember to write your name and address below.

Thank you for your help.

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University of Salford, Salford, M6 6PU. E-Mail: K.J.Thompson@salford.ac.uk

APPENDIX 8
LOCATION OF COMPLETION OF QUESTIONNAIRES

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bramall Hall	2	.7	.7	.7
	Manchester Cathedral	4	1.4	1.4	2.2
	Manchester Museum	14	5.0	5.0	7.2
	Manchester United Museum	30	10.8	10.8	17.9
	Museum of Science and Industry	33	11.8	11.8	29.7
	Pumphouse Museum	5	1.8	1.8	31.5
	Manchester VIC	174	62.4	62.4	93.9
	Wigan Pier	5	1.8	1.8	95.7
	King Street	12	4.3	4.3	100.0
	Total	279	100.0	100.0	

APPENDIX 9
NATIONALITY OF RESPONDENTS IN ORDER OF MAGNITUDE

Country Issuing Passport	Frequency	Percent	Valid Percent	Cumulative Percent
Spain	53	19.0	19.7	19.7
Australia	19	6.8	7.1	26.8
Germany	18	6.5	6.7	33.5
Japan	17	6.1	6.3	39.8
USA	15	5.4	5.6	45.4
Canada	14	5.0	5.2	50.6
China	12	4.3	4.5	55.0
France	10	3.6	3.7	58.7
Italy	10	3.6	3.7	62.5
Hong Kong	7	2.5	2.6	65.1
Austria	6	2.2	2.2	67.3
Malaysia	6	2.2	2.2	69.5
Switzerland	6	2.2	2.2	71.7
Taiwan	6	2.2	2.2	74.0
Poland	5	1.8	1.9	75.8
Argentina	4	1.4	1.5	77.3
Columbia	4	1.4	1.5	78.8
Czech Republic	4	1.4	1.5	80.3
Hungary	4	1.4	1.5	81.8
Mexico	4	1.4	1.5	83.3
New Zealand	4	1.4	1.5	84.8
Turkey	3	1.1	1.1	85.9
Venezuela	3	1.1	1.1	87.0
Brazil	2	.7	.7	87.7
Chile	2	.7	.7	88.5
Finland	2	.7	.7	89.2
Netherlands	2	.7	.7	90.0
Indonesia	2	.7	.7	90.7
Ireland	2	.7	.7	91.4
Korea	2	.7	.7	92.2
Portugal	2	.7	.7	92.9
South Africa	2	.7	.7	93.7
Sweden	2	.7	.7	94.4
Bolivia	1	.4	.4	94.8
Croatia	1	.4	.4	95.2
Dominican Republic	1	.4	.4	95.5
Egypt	1	.4	.4	95.9
Greece	1	.4	.4	96.3
India	1	.4	.4	96.7
Israel	1	.4	.4	97.0
Jamaica	1	.4	.4	97.4
Lithuania	1	.4	.4	97.8
Malta	1	.4	.4	98.1
Pakistan	1	.4	.4	98.5
Philippines	1	.4	.4	98.9
Singapore	1	.4	.4	99.3
Slovakia	1	.4	.4	99.6
Vietnam	1	.4	.4	100.0
Total	269	96.4	100.0	
Missing	10	3.6		
	279	100.0		

APPENDIX 10
DEGREE OF ADHERENCE TO ASSUMPTIONS OF MULTIPLE
REGRESSION OF INDIVIDUAL PREDICTOR AND OUTCOME
VARIABLES

Assumptions	Degree of Adherence
Sample size	Tabachnick and Fidell (1996) recommend a ratio of 40 cases to each predictor variable for stepwise regression, but also note that more cases are preferable where the outcome variable is not normally distributed. Furthermore, Hair <i>et al.</i> (1998) note that sample size has a direct impact on the probability (power) of detecting a specific level of R ² as statistically significant and suggest that the minimum R ² which will be detected as statistically significant by a sample of 250 with 5 independent variables at the 0.05 significance level is 5. Sample size and power vary for each regression analysis presented here according to the number of missing values, which have been excluded on a pairwise basis.
Variable type	Predictor variables and outcome variables are interval level and the outcome variables are all unbounded on a Likert scale of 1-7. Thus, no transformation of the variables is necessary. All predictor and outcome variables employ the same unit of measurement.
Non-zero variance	The predictor variables do not possess variances of zero.
Normality of variables	As multiple regression analysis uses parametric statistical techniques, a normal distribution of the predictor and outcome variables is assumed. Appendix 11 shows the skewness and kurtosis values for the extracted factors and the case mean variables to be used in prediction. These values reveal that, like the original scale variables, many of the factors and case mean variables are negatively skewed and show a statistically significant difference from a normal distribution in this respect. Similarly, many of the variables are showing highly leptokurtic distributions. Thus, assumptions of normality are violated. However, the S-W and K-S test statistics are non-significant for a number of variables, suggesting that responses to these variables are drawn from a normal population. Hair <i>et al.</i> (1998) note that regression analysis has been shown to be robust even when the normality assumption is violated. Furthermore, Tabachnick and Fidell suggest that deviations from a normal distribution can be compensated for by an increase in the sample size. Therefore, due to the exploratory nature of the research and the fact that the regression model will be used for explanatory rather than predictive purposes, it is considered appropriate to continue with the regression analysis without undertaking transformation of the variables. However, attention will be paid to the sample size for each regression analysis and caution will be taken in interpreting the results.
Independent values	As each value of the outcome variables is taken from a separate subject and all interview subjects were intercepted individually there is no reason to believe that the assumption of independence has been violated.

List of assumptions adapted from Field (2000), Hair *et al.* (1998), Tabachnick and Fidell (1996)

APPENDIX 11
TESTS OF NORMALITY ON EXTRACTED FACTORS AND CASE MEAN
VARIABLES

Tests of Normality: Factors and Case Mean Variables

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Extracted Factors						
public transport	0.176	149	0.000	0.803	149	0.000
private transport	0.054	149	0.200	0.982	149	0.050
confident and willing travel	0.070	149	0.073	0.986	149	0.127
anxious but necessary travel	0.113	149	0.000	0.936	149	0.000
independent travel	0.048	149	0.200	0.984	149	0.078
journey quality	0.069	149	0.081	0.983	149	0.063
service shortfall	0.104	149	0.000	0.959	149	0.000
good parking	0.234	149	0.000	0.787	149	0.000
poor value	0.126	149	0.000	0.968	149	0.001
attractions access	0.080	149	0.020	0.985	149	0.116
Case Mean Variables						
mean importance all variables	0.159	149	0.000	0.851	149	0.000
mean performance all variables	0.083	149	0.015	0.972	149	0.004
mean satisfaction all modes	0.208	149	0.000	0.932	149	0.000
mean re-use all modes	0.154	149	0.000	0.916	149	0.000

Significance of Kurtosis and Skewness Values: Factors and Case Mean Variables

	SEK	Kurtosis	Sig	SES	Skewness	Sig
Extracted Factors						
public transport	0.291	2.233	2.770	0.146	-1.592	-10.904
private transport	0.291	-0.479	1.283	0.146	-0.083	-0.568
confident and willing travel	0.291	0.684	1.533	0.146	-0.272	-1.863
anxious but necessary travel	0.291	2.009	2.628	0.146	0.065	0.445
independent travel	0.291	1.300	2.114	0.146	-0.581	-3.979
journey quality	0.291	2.180	2.737	0.146	-0.361	-2.473
service shortfall	0.291	3.166	3.298	0.146	0.750	5.137
good parking	0.291	7.387	5.038	0.146	0.254	1.740
poor value	0.291	1.922	2.570	0.146	0.417	2.856
attractions access	0.291	1.243	2.067	0.146	0.039	0.267
Case Mean Variables						
mean importance all variables	0.297	1.509	2.254	0.149	-1.370	-9.195
mean performance all variables	0.307	1.405	2.139	0.154	-0.136	-0.883
mean satisfaction all modes	0.374	1.208	1.797	0.188	-0.948	-5.043
mean re-use all modes	0.385	0.788	1.431	0.194	-0.738	-3.804

N.B. significance values are calculated by dividing the test statistic by its standard error and, in the case of kurtosis, by taking the square root of the result (Field, 2000)

APPENDIX 12
STEIN’S FORMULA FOR THE CROSS-VALIDATION OF R² CITED IN
STEVENS (1992)

$$\text{Adjusted } R^2 = 1 - \left[\left(\frac{n-1}{n-k-1} \right) \left(\frac{n-2}{n-k-2} \right) \left(\frac{n+1}{n} \right) \right] (1 - R^2)$$

- Stein’s formula applied to the regression model for Regression Hypothesis 1

$$1 - \left[\left(\frac{252}{250} \right) \left(\frac{251}{249} \right) \left(\frac{254}{253} \right) \right] (0.941) = 0.040$$

- Stein’s formula applied to the regression model for Regression Hypothesis 2

$$1 - \left[\left(\frac{166}{164} \right) \left(\frac{165}{163} \right) \left(\frac{168}{167} \right) \right] (0.852) = 0.121$$

- Stein’s formula applied to the regression model for Regression Hypothesis 4

$$1 - \left[\left(\frac{156}{154} \right) \left(\frac{155}{153} \right) \left(\frac{158}{157} \right) \right] (0.902) = 0.068$$