

The need of information in public transport

Elderly and disabled people's pre-journey travel information requirements

Nina Waara

2001



Lund Institute of Technology
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The need of information in public transport. Elderly and disabled people's pre-journey travel information requirements

Keywords:

Public transport, elderly, disabled, information, mobility, accessibility

Abstract:

Explores elderly and disabled people's travel information requirements when planning a journey by public transport and discusses the potential of information to improve access to the public transport system. Questionnaire study in order to validate an earlier focus-group interview study about elderly and disabled people's travel information requirements. Results show a need for travel information that is not offered today. Results also show the travel information need of different sub-groups among the elderly and disabled.

Ämnesord:

Kollektivtrafik, äldre, funktionshindrade, information, mobilitet, tillgänglighet

Referat:

Utforskar äldre och funktionshindrades behov av planeringsinformation i kollektivtrafiken och diskuterar huruvida information kan bidra till tillgängligheten till kollektivtrafiken. En omfattande enkätundersökning genomfördes för att validera tidigare genomförda fokusgruppsintervjuer om äldre och funktionshindrades behov av information i kollektivtrafiken. Resultaten visar att det finns ett behov av information bland äldre och funktionshindrade som inte erbjuds idag. Resultaten visar också informationsbehovet för olika sub-grupper.

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Abstract

This study explores elderly and disabled people's travel information requirements when planning a journey by public transport. It also discusses the potential of information to improve access to the public transport system.

The study is based on two surveys: a comprehensive focus-group interview study was carried out in order to explore what kind of travel information elderly and disabled people wish to access when planning a journey by train and by bus. The results from the focus-group interviews were then used to put together a questionnaire which was used to validate the results among a larger group of elderly and disabled people.

The respondents to the questionnaire were randomly chosen among the members of 12 Swedish organisations for elderly or disabled people. The study was geographically concentrated on six counties in Sweden, which were chosen in order to represent different aspects of urbanisation, infrastructure and communications. The sample from each organisation was evenly distributed among the counties, i.e. the number of members in each county was not considered. A total of 4,500 questionnaires were sent out, 1,877 of which were returned.

The results show that elderly and disabled people require more travel information than what is offered today when they are planning a journey by train or by bus. The need for information varies within the group of elderly and disabled people depending on what perspective is adapted. There is travel information which is necessary for all travellers regardless of physical capacity, including elderly and disabled people, whereas other travel information is primarily in the interest of relatively broad categories of disabled people. Finally there is travel information that is only important to a very specific group of the disabled people. The need for absolute travel information also increases the more specific the group is, but this does not necessarily mean that the information is not as crucial for elderly or disabled people's travel. It is only the intended use of the information that changes; i.e. the broader the category of elderly and disabled people, the more general the need for travel information and it is consequently used more for comfort and security than as an absolute prerequisite for making the journey at all. However, both kinds of information are crucial for the elderly or disabled people's journeys.

The theoretical context of this study implies that travel information may have the potential of improving access to the public transport system. There is, however, much research to be done before the actual impact of travel information on accessibility can be discussed.

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Table of contents

1	Introduction	1
2	Background	5
2.1	Elderly and disabled people's mobility differs from that of other groups in society	7
2.2	The reduced mobility of elderly and disabled people in public transport is caused by several factors	9
2.2.1	The interaction between the individual and the public transport system affects mobility	9
2.2.2	Ageing – one of the factors causing mobility problems in the public transport environment	10
2.3	Travel information may influence mobility in public transport	12
2.4	Aims and hypotheses	13
2.5	Limitations of the study	14
2.6	Definitions of concepts used in the study	15
3	The ageing or disabled individual and the environment - a conceptual model	17
3.1	The ageing individual and the environment	17
3.1.1	The ecological model	18
3.1.2	The ecological lifespan model of ageing	20
3.1.3	The ecological lifespan model of ageing and the disabled	23
3.2	Information, competence and environmental press	24
4	Data collection, response rates and methods used for the data analysis	27
4.1	Data collection	27
4.1.1	The focus-group interview study	28
4.1.2	Modelling the questionnaire	29
4.1.3	Choosing the respondents	30

4.1.4	Geographic distribution of the questionnaires	33
4.1.5	Distribution of the questionnaires	34
4.2	Response rate	34
4.2.1	Geographical distribution of answers	36
4.2.2	Age, disabilities and gender distribution	37
4.3	Methods used for the data analysis	39
5	Elderly and disabled people's requirements for pre-journey travel information	41
5.1	Travel frequency and reasons for unsatisfied needs to travel	42
5.2	Pre-journey travel information required by all elderly and disabled people	45
5.2.1	General travel information	47
5.2.2	The railway station and the bus terminal	51
5.2.3	The train and the bus	56
5.2.4	Another way of compiling travel information	60
5.3	The pre-journey travel information required by sub-groups among the elderly and disabled	63
5.3.1	Mobility impairments	64
5.3.2	Dizziness	71
5.3.3	Weakness and low stamina	76
5.3.4	Speech impairments	82
5.3.5	Hearing impairments	83
5.3.6	Visual impairments	85
5.3.7	Comparison of the information needs of different sub-groups	88
5.4	The impact of the extent of disability on the need for information	93
5.4.1	Mobility handicaps	93
5.4.2	Visual, hearing and speech impairments	95

6	Results and conclusions	97
6.1	Analysis and conclusions	97
6.2	Discussion	101
6.3	Further research	104
	REFERENCES	107
	Appendix I-IV	

1 Introduction

The public transport system is complex and dynamic in the sense that it is never constant despite its somewhat rigid structure. Therefore a journey by public transport in itself involves a certain extent of insecurity, and the ability to travel safely and efficiently requires knowledge about the system. This knowledge can be acquired through experience and practice or through information. Both experienced and inexperienced travellers need information, even though the amount and type of information may vary as well as the time when the information is needed. Travel information therefore constitutes an important part of the public transport service (Gotic 2000).

Public transport authorities and operators can use travel information as a means of strengthening the public transport service in general, i.e. of improving the product they are offering. Travel information could also be used to improve the accessibility of the public transport system, as it may help to reduce the hindrances created by lack of information. By clearing up misunderstandings and providing better knowledge about the public transport system, travel information could help some travellers overcome obstacles and fears which may otherwise prevent them from travelling. In order to use information in this sense, knowledge about what kind of information is required by different categories of travellers is needed, business travellers for example may not ask for the same kind of information as leisure travellers.

Travellers use information to plan a journey and complete it as planned. Planning information, usually pre-journey information, covers a range of aspects where the two extremes could be labelled as “comfort information” and what can best be described as “absolute information”.

Absolute information covers matters which are crucial for the individual to master in order to be able to make the journey. Such information may for example be about wheelchair accessibility or the possibilities to get personal assistance during the journey. One example of this is the necessity to know whether there is a lift at the platform as well as the width of the door as well as how the door to the lift is opened. Consequently, depending on individual abilities, absolute information is literally information about matters which determine whether the individual will be able to make the journey at all.

Comfort information covers matters like what service the traveller may generally expect during the journey. It could, for example, be information about what kind of service is provided at the station and onboard the vehicle, seating facilities and smoking. This information is not as decisive for the journey as absolute information, but it will nevertheless influence the individual's decision on whether to go through with the journey or not. A service level which does not meet the demands of the traveller may be disappointing, but the traveller will still be able to complete the journey. Comfort information is of vital importance for how the traveller will experience the journey (Gotic 2000).

In recent years, information technology has become common within many functions in society and has subsequently also been introduced in many areas of public transport. One possible application which is currently attracting a lot of interest is the application of information technology to travel information in public transport. The possibilities to offer information which meets the demands of the individual traveller will improve as information technology allows more, as well as more detailed, travel information to be presented to travellers before and during a journey.

However, the creation of a travel information service which meets the needs of the travellers requires knowledge about what kind of information they want in different situations. Knowledge is also needed about how to present the information so that it will be readily available and easy to find. In other words, it is essential to have know *what kind of* information travellers require, *when* they want this information, *where* they search for it and *how* they wish to access it (Gotic 2000).

In order to be able to design a good travel information service we must also have a good understanding of *who* it is that wants the information. Different groups of travellers may need different kinds of travel information, since some travellers may consider certain information to be

very important while others feel that they do not need this information at all. Thus the need for information in the travel situation depends on how experienced travellers are and how they are able to handle the demands caused by the travel environment.

In our society, travel has become an integrated and inseparable part of our daily lives (Vilhelmson 1997). As we live, work and spend our leisure time in different locations travel is a necessity which makes our everyday lives work and is consequently also closely connected to the welfare of our society. Being able to travel where and when you want to is often taken for granted, and how you want to travel is often also a matter of choice. However, this does not apply to all members of society. For many elderly and disabled people travel is restricted by health problems and disabilities which emerge with old age. An elderly person is therefore more likely than a younger person to encounter obstacles and hindrances in the environment and thereby also in the transport system (Marcellini et. al. 1998).

Elderly and disabled people's mobility is a social issue which has attracted considerable interest in recent years (SOU 1995:7). The reason for this is the rapid increase in the proportion of elderly people in the population of the western world.. In Europe, for example, the number of elderly people, i.e. over 65 years of age, is estimated to increase by 34% by the year 2020, while the increase in the total population is estimated to be less than 2% during the same period of time (OECD 1997).

Old age brings about a decline in several areas of biological and cognitive functions, but as the general health status of the population has improved during the last century, the healthy stage of ageing has also been prolonged. This means that the changes due to old age will occur later in life among the elderly in the future, and they will thus have fewer years of disability due to ageing (Vita et. al. 1998). However, mobility and impairments will still be an issue, as the increase of elderly people in the population also means that the proportion of disabled people will most probably increase over time as disabilities eventually appear with old age. The number of disabled young people will most likely be unaffected or smaller than today, due to the overall decrease in the growth of the population and the progress in medical treatment and procedures expected in the future.

Elderly and disabled people are also generally more restricted than other groups when it comes to choosing their mode of travel, as they are often confined to walking or travelling by public transport (Vilhelmson 1985).

This will mean a substantial increase in potential passengers within public transport by the year 2020, many of whom will be impaired in some way.

Consequently, elderly and disabled people will constitute an increasingly more important group of travellers in public transport. It is therefore important to look into the information needs of elderly and disabled people in the public transport system. This study will focus on the travel information needs of elderly and disabled people and also discuss the possibilities to retain the mobility of certain groups of travellers by means of travel information, i.e. whether information can improve the accessibility of the public transport system and thereby maintain the mobility of travellers.

2 Background

A growing community becomes differentiated both socially and physically as areas for housing, work and services are separated from one another. There has been a transposition of functions in society that has made the population more dependent on the transport system as the distances between home, work and services need to be managed with some means of transport in order for everyday life to work. Consequently, this de-concentration of activities in society also require an increased mobility of the population (Wärneryd et al. 1995, Rooij 1998).

Mobility is the decisive link between individuals and their social and built-up environment and thus also determines when, how and where a person will be able to participate in social relationships and everyday activities (Mollenkopf 1998). This makes mobility a basis for social integration and a contributor to the quality of life of the individual as well as the social climate in a community (Mollenkopf 1996b). Many elderly and disabled people find it difficult to live up to the demands on mobility placed by the complexity of today's society as a prerequisite for participation in social activities. These groups are thereby at risk of becoming disintegrated. This especially applies to the elderly, as they are becoming an increasingly larger part of the population and require continuous action with regard to integration (Hägerstrand 1974). The development of society will also be more harmonious if interaction and exchange between different segments of society are encouraged and stimulated.

For the elderly and disabled, societal participation mainly means the opportunity to maintain relationships with close friends and relatives. It also means the ability to obtain their daily necessities and to make use of facilities and events according to their individual needs (Marcellini 1996).

The personal benefits of preserved mobility are thus mainly the ability to maintain control over one's own life. This is significant, as the elderly unanimously agree that remaining independent is the most important factor in growing old with dignity (Brög et al. 1998). The possibility to live an independent and active life as long as people's mental and physical abilities enable them to participate actively in society is considered to be a crucial element of human life and is thus also one of the basic elements of the contemporary concept of "quality of life" (Mollenkopf 1996a).

On an individual level, the journey in itself also fulfils a social function. For many elderly and disabled people, travel is not only an activity performed in order to be able to participate in other, more stimulating activities, but also an important social event in itself. A journey offers social stimulus in the form of contact with the other passengers as well as a possibility to get out and look at other things. It also creates a feeling of activity and participation (Mollenkopf 1998). The possibility to travel can also have a positive effect on health. Even though different health conditions can influence when, how and where a person can travel, they also affect how this changes as travel is also a prerequisite for an independent life-style.

There are economic incentives for society to preserve the mobility of the elderly and disabled. A person's contribution to social life and his or her interaction with others are affected negatively when mobility declines and preserving an independent lifestyle becomes difficult. The need for help from society grows, which, in turn, may result in the person eventually becoming even less mobile and thus needing even more help.

This, in turn, affects an individual's independence, as active participation in social events requires careful planning. When it comes to travel, society can benefit from the mobility of the elderly by reducing the costs for special transport services (STS) and individual solutions for transport if a larger proportion will be able to travel independently up to a high age.

Summing up the statements made above, it is obvious that a preserved mobility among the elderly and disabled brings both objective and subjective benefits. Thus the mobility of the elderly and disabled is an issue which is in the interest of society as well as a desire stated by the elderly and disabled themselves.

2.1 Elderly and disabled people's mobility differs from that of other groups in society

Even though elderly and disabled people express the same need and desire to travel as other groups in society, they do not have the same possibilities to do so (Stahl et al. 1993). Both the possibility to travel and the extent of travel vary between age groups in the population (Vilhelmson 1990). Statistical studies on how and to what extent different age groups participate in travel in terms of their transportation needs and activity patterns show that mobility definitely declines as a person ages (Mollenkopf 1998).

A substantial change in travel behaviour occurs already at the age of 65, which is the usual age for retirement from work. However, if travel to and from work and education is excluded, the age group between 65 and 74 in general participate in as many activities per day as do younger age groups. Consequently the number of trips to other events than work and education is relatively unaffected up to the age of 74. The elderly over the age of 75 still maintain the same travel patterns as the younger elderly, although they travel less frequently and make shorter trips than other groups in society (Krantz 1999).

The results of a study where both elderly and younger people were asked about the number of trips they had made during a particular day show that in general the elderly travelled less frequently than younger age groups. The number of trips also varied within the group of elderly people. Elderly men between 65 and 74 years of age made 1.25 trips a day, whereas elderly men between 75 and 84 years of age made only 0.9 trips a day. The corresponding figures for elderly women were 0.8 and 0.5 trips a day. People in the younger age groups made an average of 1.75 trips a day (Krantz 1999). There is also a difference in the distance people in different age groups travel every day. Elderly men travel an average of 26 km per day and elderly women an average of 13 km per day, whereas the distances for men and women between 45 and 64 years of age are on average 60 km and 42 km per day respectively (SIKA 2000a).

Differences in economic resources also have an impact on an individual's mobility. For example, there are still many elderly people who do not have access to a private car, even though the proportion of those who have a driving licence as well as a car in the household is increasing. This is especially true for elderly women (Krantz 1999, SIKA 2000b).

Even though the elderly and the disabled are heterogeneous in many respects, they are similar when it comes to mobility. Both groups can be regarded as homogeneous on an aggregated level, as they experience similar restrictions and possibilities when it comes to travel. The changes in travel behaviour which occur with old age are in fact similar to the travel patterns of people with disabilities, as disabled people travel less than non-disabled people. They make about half as many trips as the non-disabled (Vilhelmson 1989). Another similarity between the elderly and the disabled is that they both travel by foot and use public transport to a greater extent than other groups in society (Vilhelmson 1985, Brög et. al. 1998).

Many elderly people do not see themselves as disabled even though they have functional impairments which may prevent them from performing activities like travel (WHO ICIDH-2, 1997). Most people who experience impaired mobility are in fact elderly people, as these kinds of impairments increase when one grows older. Among those between 75 and 84 years of age almost 50% have some kind of impairment which affects their mobility (Vilhelmson 1990).

Being able to make a journey is by no means something that a disabled person can take for granted. Among the disabled approximately 40% state that they have difficulties travelling at all and approximately 65% state that their possibilities to travel are inferior to those of people in general (Trafikteknik 1993).

Although almost 90% of the elderly and disabled spend time outdoors every day, this does not mean that they actually leave their home, i.e. travel in some way. Only about 40% leave their home every day, and approximately 80% leave at least a few times a week. People with minor impairments are more active than people with major impairments, as 94% and 72% respectively leave their home every day. This difference can most likely, at least to some extent, be explained with reference to problems that occur in the travel situation, as there is a relationship between the severity of the impairment and travel activity which applies to all modes of travel (Stahl et. al. 1993).

Even though the disabled are generally satisfied with their possibilities to travel, they also state that they cannot travel as much as they would like to. This is due to the difficulties they may encounter during a journey, such as pain or other kinds of discomfort, or to the fact that they have difficulties in managing the problems that may occur during a journey. If a problem one usually manage is repeated or if many different problems arise during one journey, the effect is that the problems taken together become too

difficult for the person to manage (Stahl 1996). Many elderly people also express a wish to travel more than they are able to do (Stahl 1986). Consequently there is a need for travel among the elderly and disabled which is not provided for by the transport system.

2.2 The reduced mobility of elderly and disabled people in public transport is caused by several factors

Ageing in itself contributes to a decrease in mobility as mobility restrictions like health problems and disabilities emerge with old age. An elderly person is therefore more likely than a younger person to be restricted by obstacles and hindrances in the environment (Marcellini et. al. 1998).

The reason for this cannot be sought in the ageing or disabled individual alone, nor in the environment of the public transport system exclusively. Instead, an elderly or disabled person's mobility in the public transport system is dependent on several factors which affect the travel situation as well as that person's interaction with the system. The mobility problems experienced by the person are also affected by, and affect, factors both within and outside the individual.

2.2.1 The interaction between the individual and the public transport system affects mobility

The public transport system and its interdependence with the individuals using the transport service is displayed in Figure 2.1. There are both physical and psychological aspects of all the factors included. A person could for example be using a walker, which restricts the choices the person has to travel by public transport. There could also be psychological aspects; some people, for example, find it difficult to travel with strangers.

In simple terms the public transport system is made up of infrastructure and vehicles which are interdependent but also interact with social factors such as transport policies and the attitudes of society towards disabled people in public transport. These factors as well as individuals' socio-economic status and lifestyle also affect their choices in the public transport system. The choices an individual makes have an impact on the other factors, which in turn affect the individual's future choices. Thus mobility in the public transport system is affected by both individual attributes and system properties.

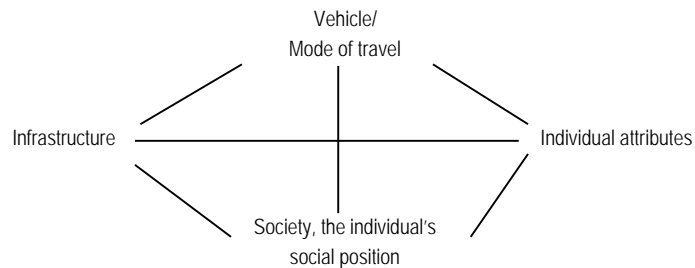


Figure 2.1 The interaction and interdependence between factors that affect mobility in the transport system (Risser and Fischer 2001)

The reduced mobility of elderly and disabled people in public transport is therefore the result of the interaction and interdependence of the individual and the public transport system or, in other words, the result of the interaction and interdependence of psychological, physiological, biological and external factors.

2.2.2 Ageing – one of the factors causing mobility problems in the public transport environment

The model described above does not take ageing into account as a specific factor but includes it among the individual attributes. In order to study the influence of ageing and injuries on individual mobility in the public transport system it is important to separate injuries and biological processes such as ageing from the individual attributes.

This is done in the model displayed in Figure 2.1 where biological ageing processes and injuries are excluded from the individual attributes as well as from the other three factors (infrastructure, vehicle/ mode of travel and society). All the individual attributes and external factors are schematically included in one factor comprising all other individual attributes and factors but injuries and the biological ageing process (see Figure 2.2).

The biological ageing processes affect the biological health and cognitive skills of an individual. These processes are active during the whole lifespan of the individual, but their impact on mobility is generally not noticed until old age. Health conditions may also restrict the mobility of an individual.

However, the effect of health on mobility is individual, as diseases do not affect everybody and since only certain diseases have an impact on mobility. It is therefore important to separate the mobility problems caused by diseases from those caused by the biological ageing processes. Consequently diseases therefore constitute a separate factor in the model displayed in Figure 2.2.

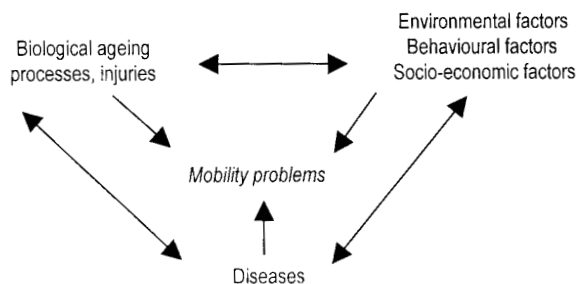


Figure 2.2. The three main factors affecting mobility are diseases, the biological ageing process and external environmental lifestyle factors (Knook 1992).

Ageing and diseases can thus have an impact on the mobility of an individual but mobility problems are also caused by the demands placed by the public transport system on the individual. This is a complex relation where one factor cannot be separated from the other, since they are interdependent and thereby both result in mobility problems in the public transport system. However, this relationship is not one of equal partners, as the interdependence does not necessarily mean that the individual and the system have an equal impact on the mobility problems experienced by an individual in a travel situation.

In fact, the results of several studies of the mobility of elderly and disabled people in public transport show that the modelling and design of the public transport system is fundamental to their possibility to travel (SOU 1995:70). External factors thus affect a person's mobility to a greater extent than do individual attributes (Stahl 1986).

Summing up the above discussion, one can say that the public transport system environment puts demands on mobility which restrict an elderly or disabled person to greater extent than do individual attributes such as disabilities or impairments due to ageing does, i.e. ageing is a minor cause.

2.3 Travel information may influence mobility in public transport

The decline in competence in the travel situation is often noticed as a general feeling of the journey becoming increasingly laborious and troublesome. The individual can still manage all, or most, of the tasks that the journey involves, but they consume more energy than before. This means that the one or two tasks that the individual has real trouble coping with become even more laborious to handle. It is therefore often the less severe obstacles that actually prevent people from making a journey. One by one these obstacles may not hinder an elderly or disabled person from travelling, but if several obstacles are encountered during one journey, or if one obstacle occurs repeatedly, the journey becomes difficult (Börjesson et al. 1999, Ståhl 1996).

Experienced travellers may, at least for a while, be able to compensate for some of the impairments brought about with their previous knowledge of the system which can be acquired through experience or information (Börjesson et al. 1999, Gotic 2000). Nevertheless, when the impairments become too severe or too numerous, travel by public transport will no longer be possible. At this stage neither experience or travel information can contribute to a person's ability to travel (Karlsson 1995).

Elderly and disabled people claim that they are often anxious and insecure before a journey by public transport. These feelings in themselves can be significant enough to prevent people from making the journey even though the anticipated obstacles are not always severe enough to warrant that. In order to reduce their anxiety and insecurity the elderly and disabled often start to plan and prepare themselves for a journey a long time in advance (Liikenneministeriö 2000, Börjesson et al. 1999).

Travel information can thus be a means of reducing pre-journey anxiety by providing the possibility to prepare for anticipated difficult situations in good time before the journey is undertaken. For example, if one knows in advance that steps have to be climbed in order to embark a vehicle, one will be better prepared for the situation when it occurs, and unnecessary anxiety can be avoided. A greater proportion of one's energy can thus be used in situations which are really troublesome to handle. In fact, it is rare for the majority of the requests for more information in themselves to determine whether the journey will take place or not, but they are nevertheless crucial for how the individual will be able to plan and thereby make the journey (Börjesson et al. 1999).

A journey by public transport is also made up of more segments than are normally considered when travel information is provided. This especially applies to elderly and disabled travellers. These travellers want more travel information than is available today, and they also ask for other kinds of information than what is traditionally offered. The need for travel information in these groups may therefore be greater than what has previously been assumed (Stahl et al. 1993, Vesanen-Nikitin 1998).

Travel information designed to meet the demands of elderly and disabled travellers may therefore be a useful tool in increasing the accessibility of the public transport system. A minor decline in mobility due to ageing or disability could perhaps be compensated for to some extent by means of carefully planned travel information.

The travel environment in public transport is complex, and as it is a matter of mass transport it cannot be adapted to a single individual regardless of the competence of the individual to handle the environmental demands. We also know that ageing brings about a decline in mobility, and that elderly and disabled people have difficulties in handling the travel environment in public transport. Could travel information be an instrument for solving mobility problems experienced by elderly and disabled people in the public transport environment? Travel information cannot eliminate or diminish errors in the physical environment, but it might be able to help an elderly or disabled person to stay mobile for a bit longer.

2.4 Aims and hypotheses

The overall hypotheses for this work is that elderly and disabled people need more information when planning a journey by bus and by train than what is offered today.

There are indications that elderly and disabled people use travel information in public transport not only to plan their journey but also as a mean to decrease feelings of insecurity and anxiety that many elderly and disabled people experience before a journey (Börjesson et al. 1999, Liikenneministeriö 2000). Therefore it is also interesting to study whether travel information may have an impact on the accessibility of the public transport system.

The overall aim of this study is thus to explore elderly and disabled peoples travel information requirements when planning a journey by public

transport. The purpose is also to describe what kind of travel information different sub-groups of elderly and disabled people require as well as to discuss the potential of information to improve the access to the public transport system.

2.5 Limitations of the study

This is an independent research study. However, the origin of the study is connected to a development project where the purpose was to develop an existing on-line travel information service by including travel information that is important for certain groups of travellers.

The focus-group interviews were carried out as a part of this development project, but were also considered to be a good starting point for an extensive research study on the travel information requirements of elderly and disabled people. Consequently this also meant that the limitations of the development project also apply to the research project.

The following limitations apply to this study:

- it deals with pre-journey travel information asked for by elderly and disabled people in Sweden;
- it deals with public transport journeys by train and by bus, and the questions in the questionnaire refer to long journeys, and consequently local journeys by train and by bus are excluded;
- it deals with information included in the questionnaire that is based on a focus-group interview with elderly and disabled people on the topic of what travel information they need when planning a journey by train and by bus;
- it includes all kinds of impairments with the exception of cognitive and mental impairments. Since cognitive and mental impairments require a different approach when studying travel information, it is better to study these impairments separately.

2.6 Definitions of concepts used in the study

Some of the concepts used in this study are somewhat ambiguous and must therefore be defined. These concepts are “elderly”, “mobility” and “disability”, “impairment” and “handicap”. A distinction between the latter three will also be made.

Elderly people are people over 65 years of age. This marks the general age of retirement from work in Sweden and is commonly used in statistical data and reports from all disciplines. However, as there is a growing group of very old people, i.e. people over 75 years of age it is interesting to distinguish between “the old” and “the very old” among the elderly.

Disabled means being incapacitated by an illness or an injury. A *disability* is the condition of being disabled and implies the lack of ability to carry out a certain activity. A disability is thus a limitation in the performance of activities. Disabilities are caused by physical or mental *impairments*. To “impair” means to damage a function by weakening, reducing or hindering it in some operative respect. Thus an impairment is a reduced body function. Impairments and disabilities can lead to a *handicap*. A handicap is related to an individual’s involvement in everyday life situations and is defined by individual health conditions (*WHO, ICIDH-2, 1997*).

In simple terms this translates into an impairment being, for example, a knee injury. The disability in this case would be not being able to bend the knee, i.e. the lack of a function. A handicap arises when the lack of a function prevents a person from performing an activity, e.g. climbing a ladder.

In recent years the concepts of disability, impairment and handicap have come to include a broader perspective on the interplay between man and the environment. Anybody can, in fact, be impaired and consequently handicapped in a situation which he or she does not fully master, for instance the travel situation. A person carrying a lot of luggage will be impaired in the sense that he or she will not be able to move about as normal, i.e. the person will have a temporarily reduced body function which causes a handicap in the travel situation. Similarly, most elderly people do not think of themselves as being disabled but nevertheless have functional restrictions which may prevent them from performing certain activities, for example travel.

The meaning of *mobility* in this study includes movements within the public transport system. The perspective of a journey by public transport adapted

in this study is that it starts and ends in one's own home, which means that the concept of mobility includes all movements outside one's home and garden.

3 The ageing or disabled individual and the environment– a conceptual model

In the previous chapters the causes of mobility decline among the elderly and disabled in the public transport system have been explained and arguments for the possible benefits from travel information have been discussed. But can information really be used as an instrument for improving the accessibility of the public transport system and consequently improve the mobility of elderly and disabled people? The theories presented in this chapter put these questions in a theoretical context, which makes it easier to discuss the role of information in public transport by creating a conceptual model for interpreting and understanding the results from the study.

As the ecological lifespan theory was developed from the ecological model both are explained in this chapter. These theories mainly deal with the elderly and ageing, but they are also relevant when discussing disabled people and their interaction with the environment. This is explained further in section 3.2.

3.1 The ageing individual and the environment

Human beings are always in interaction with their environment. Our ability to cope with the environment is determined by both internal and external strengths and weaknesses, i.e. is by the person and by the environment. Our behaviour, or competence, in any given situation is a combination of infinite variety between individuals and their environment. Thus the effect of the environment is an individual matter.

The psychologist Lewin (1951) first conceptualised this in an equation describing the interdependence between individuals and the environment as behaviour being a function of both. This was the first creation of an ecological theory.

3.1.1 The ecological model

Lawton (1973) developed the ecological equation into a model of ageing by trying to define the variables “person” and “environment”. The term “person” was defined as an individual set of competences within biological health, sensory functioning, cognitive skill and ego strength. As some environments are more demanding than others, the environment term was defined by the characteristics of the context in which the person acts. “Environment” was later renamed as “environmental press” in accordance with earlier psychological research (Murray 1938).

The ecological model can be displayed in a graph (see Figure 3.1) where the y-axis is the individual's competence level given by the person factors and the x-axis represents environmental press. The adaptation level represents situations where the competence of the person and environmental press are in balance, i.e. situations that person can normally handle. Situations which occur within the shaded areas on either side of the adaptation level are also positive. The person is able to respond to the change in environmental press and adapt to the new situation, i.e. the environmental press is in balance with the person's ability to respond to the demands placed by the environment.

Going about their business as usual, i.e. in situations on the adaptation level, most people are not really aware of the environment. However, if the level of environmental press increases, awareness of the environment returns. A moderate increase, i.e. situations within the shaded areas surrounding the adaptation level, results in adaptive behaviour, and the outcome is positive. If the press increases any further than this, the limit set by the individual's competence is exceeded, and the person will no longer be able to respond to the change. The outcome is negative, as the person's stress threshold has been reached. Any increase in environmental press from this point on will result in further decrease in response to the demands placed by the environment. Similarly, a decrease in press level will bring back awareness of the environment. A moderate decrease in environmental press can still result in a positive outcome in response to the environmental demands, but any further decrease will cause boredom and eventually result in anxiety of true sensory loss.

There is also a difference between the impact that an absolute change in environmental press has on an individual of high competence and on one of low competence. The change may have little effect on the high-competence person but might be suffice to push the low-competence person into a state of maladaptive behaviour, i.e. a performance level below the true capacity of the individual.

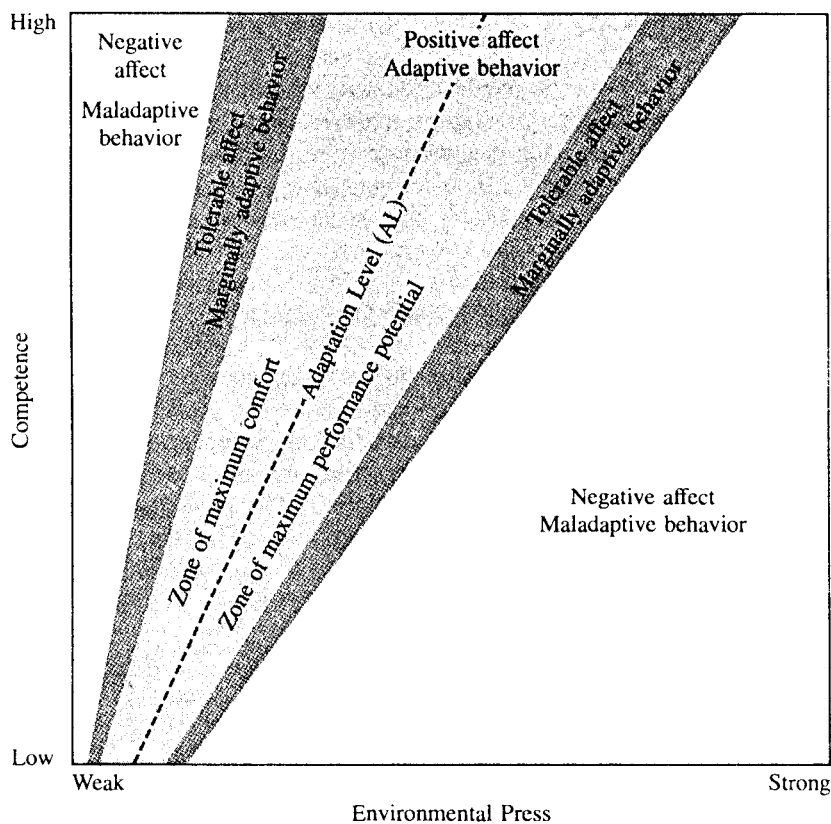


Figure 3.1. The ecological model of ageing. The vertical axis represents competence and the horizontal axis press level. Any point on the diagram represents the outcome of a person/environment interaction (Lawton 1973).

This is illustrated by the fan shape of the graphical representation of the ecological model. The field of positive affect and adaptive behaviour (the shaded area surrounding the adaptation level) becomes broader as the level of competence increases, which means that the more competence a person

possesses, the less influence a change in environmental press will have. This principle is summarised in what is referred to as the environmental docility hypothesis, that is “the less competent the individual, the greater the impact of environmental factors on that person” (Lawton 1986).

3.1.2 The ecological lifespan model of ageing

Svensson (1984) further developed the ecological model by recognising the interdependence between a person’s competence and the environment in which he or she acts. This recognition expands the model in allowing for both growth and decline in competence whereas Lawton’s ecological model only dealt with decline. A person’s ability to respond to environmental press is develops during the entire lifespan, and the person factor or competence must therefore be more complex than in Lawton’s ecological model.

Svensson argues that Lawton’s restricted view of competence as an individual attribute independent of all external factors limits the ecological model to dealing only with the elderly. By taking into account the influence on competence of a person’s interaction with the environment during the entire lifespan, the ecological model is developed into an ecological lifespan model of ageing.

In the ecological lifespan model of ageing a person’s ability to respond to environmental pressure depends on person factors such as biological health and cognitive skills. This is the same starting point as in the ecological model, but Svensson claims that the effect of interaction with the environment on the person factors from early childhood and onwards must be taken into account in the model. Both growth and decline in the person factors during an individual’s lifespan largely depend on the environment in which he or she lives.

However, our behaviour and attitudes towards the social and physical environment are regulated by intra-psychic structures called mediators, which include such things as personality style, motivation and ego strength. The interaction between the person factors and the environment also influences the mediators and consequently our interaction with, and understanding of, the environment.

Competence in the ecological lifespan model is thus made up of person factors such as biological health but also includes the mediators. Furthermore, the outcome of the competence is divided into two entities

called covert and overt competence, or the internal and the external competence. Covert, or covered competence includes both person factors and mediators and therefore can be seen as the representation of a person's total inner capacities.

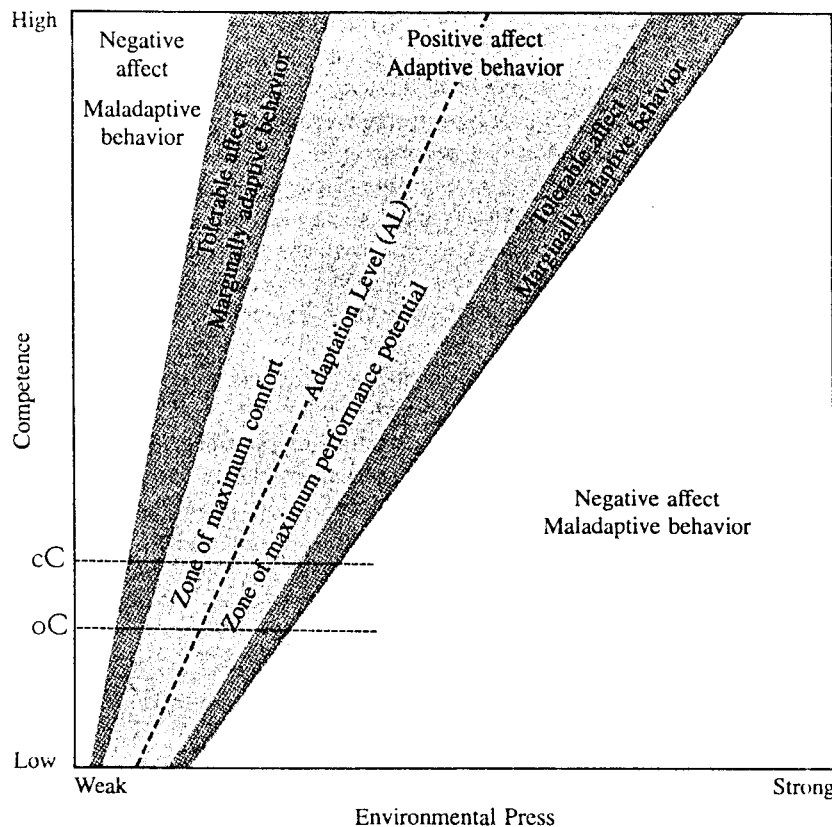


Figure 3.2. The ecological theory of ageing. The vertical axis represents competence and the horizontal axis represents environmental press level. The horizontal full line shows the covert competence and the dashed line the overt competence of an individual. Covert competence always exceeds overt competence (Svensson 1987).

Overt competence is what an individual is, or will be, able to display in a given situation, i.e. the outcome or behaviour which can be measured in and by the environment. To be able to perform a task one must not only have the physical capacity to do it but also the motivation and ego strength

to go through with it. In other words, the total inner capacities of a person must be greater than the competence which can be displayed in a given situation. This means that covert competence always exceeds overt competence, as overt competence is the part of covert competence which can be realised.

The ecological lifespan model of ageing can be displayed in the same graph as the ecological model (see Figure 3.2), where the levels of covert and overt competence are illustrated as parallel horizontal lines. The distance between covert and overt competence in a given situation represents an individual's ability to handle changes in environmental press level. If the gap is wide, the person has a better chance of adapting to changes in environmental press than if the gap is narrow. The width of the gap may vary depending on both covert and overt competence, but it never vanishes completely (Svensson 1984, 1987).

The ecological lifespan model of ageing thus makes it possible to reflect on how competence changes, and whether or not it is possible to influence people's competence in the travel situation positively, primarily the mobility of the elderly and the disabled, by using information.

According to Lawton's ecological model, it is possible to argue that information that keeps the complexity of the environment at a medium level with respect to an individual's performance and abilities will allow an optimum performance. That is to say, information should prevent an excessive degree of complexity, but it should also prevent boredom. Showing films during long-distance journeys is one possible way of preventing boredom, whereas information about how to interchange between different transport means at a large railway station would help to reduce complexity. Svensson developed Lawton's model by postulating that when the complexity of the environment is kept at a medium level individuals are able to activate their covert abilities to the maximum of and transform them into overt ability. In other words, a medium range complexity allows optimum coping.

3.1.3 The ecological lifespan model of ageing and the disabled

The ecological lifespan model deals with human ageing and the ageing individual's ability to respond to changes in the environment. The ability to respond to a change in environmental press is individual and the natural ageing processes affect all humans. Consequently, this applies to all individuals, disabled as well as non-disabled.

However, the impairments caused by the natural ageing processes cannot be directly compared with the impairments experienced by a young disabled person, since the elderly and young disabled people have become impaired in different ways. The impairments caused by ageing generally occur slowly, and the decline increases as the individual ages. The process is dynamic and the impairments are becoming increasingly more difficult which also means that the covert competence is declining. Apart from the decline in covert competence due to ageing, this situation is also true for those who are suffering from certain diseases, e.g. rheumatism, where the process is a constant decline in functions.

Young disabled people usually have a more static impairment. Other body functions are still intact and not affected by the ageing processes, i.e. they are still young and fit in every other aspect but the impairment, and their covert competence is thereby higher than for an elderly individual.

Young disabled people are also generally very much aware of the limitations of their disability and know fairly well what situations they are able to handle, i.e. know which environmental demands they can manage. Many elderly people who have become impaired through the natural ageing processes are not aware of their disability to the same extent. In fact, many of them do not see themselves as disabled at all.

Although there is no difference in the demands which the environment places on either group, the impairments which an elderly and a disabled person experience can vary. A young disabled person and an elderly person encounter the same kinds of problems when interacting with the environment, but as they are likely to have different levels of covert competence, they will not be able to handle the situation in a similar manner.

Thus the intersection between both the covert and overt competence levels and the environmental press in the ecological lifespan model will most probably appear in different locations for an elderly and a young disabled person.

Consequently there is room for disabled people in the ecological lifespan model. It also forms an interesting theoretical framework for discussions about elderly and disabled people's mobility in the public transport system and about the impact of information on their mobility.

3.2 Information, competence and environmental press

The ecological lifespan model implies that, to a certain extent, a person, will be able to adjust to the new circumstances when the environmental press increases. The overt competence is resilient and could therefore also be improved for certain tasks. This of course depends on both the mediators and the person factors, i.e. the covert competence.

A person's competence can vary in different environments. Situations which are familiar and tasks which are performed regularly are handled better than tasks which are new or rarely performed. Disabilities can also affect the ability to perform a task. Practice and experience may improve people's ability to perform a task or according to the theory presented in this chapter, improve their behaviour in response to increased environmental press.

As practice and experience are needed to be able to travel safely and efficiently by public transport, a person's competence in using the public transport system could be influenced by information and/or practice. It is therefore possible that covert competence in the travel situation could be preserved if the adequate information was provided, i.e. if environmental press could be lessened by information. Or perhaps the other way around; the overt competence could also be improved by information. Some examples of how this could happen in the travel environment are given below.

- In the travel situation, information may have an impact on both competence and environmental press. Lack of information increases environmental press since the traveller must use more energy during the journey, since unexpected events may occur. Some events can, of course, not be foreseen, but most of the obstacles a traveller will encounter can be described, e.g. the number of steps when embarking a vehicle or there being a telecommunications loop at the station.
- The lack of information may also result in unnecessary anxiety and feelings of insecurity, as a person may misjudge the environmental

press level as being higher than it really is. One way of reducing the environmental press level is to avoid the journey altogether.

- Information can also be used as a means of mental preparation. Thereby the covert competence may be enhanced and, consequently, performance, or overt competence, may improve.

Thus there is, at least in theory, a connection between elderly and disabled people's mobility and information in public transport. Information does not change the physical reality, but it may help an elderly or disabled person to prepare for the trip. It may also allow people to concentrate their energy on things that will happen and on unexpected things that might happen rather than worrying about everything that will or may happen during a journey by public transport.

4 Data collection, response rates and methods used for the data analysis

4.1 Data collection

In order to explore what kind of information elderly and disabled people want to have when planning a trip by public transport, a combination of qualitative and quantitative methods was used. The study began with a series of focus-group interviews which were later followed up by an extensive questionnaire survey.

The purpose of the focus-group interviews was partly to gain an understanding of what kind of information elderly and impaired people would like to have when planning a trip by public transport and partly to use this information as input for a quantitative questionnaire.

A focus-group interview, or a round-table interview as it is also called, is a qualitative group interview which is especially suitable when issues where there may be conflicts between different groups are explored. As this is the case with different groups of the disabled and their need for travel information, the focus-group method was chosen for the first part of the study.

In a focus-group interview, 5-10 people discuss a specific subject. The group setting allows the participants to relate to what the others are saying and thereby share their own experiences of the topic discussed. The interviewer does not participate in the discussion but may ask occasional questions in order to focus the discussion on the issue in question. Thus the interviewer can function as a catalyst for the discussion.

The focus-group interviews resulted in a list of demands for travel information which was considered important by the participants. In order to see if these demands also represent the opinion of all the elderly and disabled in Sweden, they needed to be validated in some way. A large group of elderly and disabled people would have to review the demands and say whether they agreed with them or not. In other words, the demands had to be quantified in order to be validated. This was done by developing a questionnaire based on the list of demands derived from the focus-group interviews, which was then distributed among elderly and disabled people in Sweden.

The data collection in this study was thus accomplished in two steps. First focus-group interviews were carried out to explore what kind of information elderly and disabled people want when planning a trip by public transport. Subsequently the results from the focus-group interviews were used to develop a questionnaire to validate and quantify the results.

The data collection is described in the following chapters. However, as the focus-group study was published in a research report by Börjesson, Waara and Ståhl (Börjesson et al. 1999) this part of the data collection is not presented in detail here. A detailed account of the focus-group interviews is available in the research report mentioned above.

4.1.1 The focus-group interview study

The focus-group interviews were carried out in Halmstad in the county of Halland during August 1998. All together, 5 focus group interviews were carried out, in which a total of 57 people participated. Each group consisted of 8-12 people with varying degrees of disabilities. Each interview lasted for about 2 hours.

The participants were recruited with the help of local organisations for elderly and disabled people. In order to cover different types of disabilities the interviews were carried out in five groups with participants representing different kinds of disabilities such as the visually handicapped, the hearing impaired, disabled people and the medically handicapped. One group of elderly people was also interviewed.

The interviews began with a brief outline of the research on travel information and public transport at the Department of Technology and Society at Lund University and continued with a more detailed explanation of the purpose of this particular gathering. After this initial presentation

the participants were asked to introduce themselves and briefly describe their impairments. After this the interview started: it consisted of a discussion loosely organised around a simplified prototype of a future information system for travel information. The prototype was presented to the participants in a paper version only.

The interviews were documented on audio tape. Key words and important statements were also written down on large sheets of paper, which were then placed on the walls where everybody could see them. These notes and the recordings constituted the actual documentation of the interviews and were later analysed. The results from the focus-group interviews were collected as a list of demands expressed in user terms.

4.1.2 Modelling the questionnaire

The purpose of the questionnaire was to validate the statements made in the focus-group interviews. As these statements only expressed the opinions of a relatively small group of elderly and disabled people, it was considered important to examine whether they also represented the general understanding in the population of elderly and impaired people in Sweden.

In order to explore whether people with different kinds of impairments also had different needs for information it was important to have different demands for information assessed in relation to other demands of the same kind as well as of a different kind.

The original list of demands based on the focus-group interviews formed the basis for the questionnaire. In some cases the demands were rephrased as questions, and some demands were split into two questions. After this process a total of 83 questions remained.

Presenting these questions as well as the corresponding assessment questions in one questionnaire would have eventuated in a very extensive task for the respondents. As it would probably have been too burdensome for them to answer the questionnaire, it was necessary to limit the number of questions. This problem was solved by producing different versions of the questionnaire.

Since it was important that each respondent should answer a variety of questions, the 83 questions were first gathered into five categories: General information, The train, The bus, The railway station and The bus station/stop, as is shown below.

General information (GI)	22 questions
The train (T)	17 questions
The railway station (RS)	17 questions
The bus (B)	11 questions
The bus station/ stop (BS)	16 questions

In order to limit the task for the respondents, but still having each respondent answering questions from as many areas as possible each questionnaire was to include a total of 40 questions from 4 different categories.

The questions within each category were then randomly divided into groups of 10 questions which were then compiled into 12 versions of the questionnaire. Each questionnaire also contained 20 assessment questions in which the respondent was asked to divide 100 points between a random selection of five questions. A questionnaire would thus cover four out of five areas, and each respondent would be given 40 validation questions and 20 assessment questions to answer. Each respondent would also answer the 24 background questions, i.e. a total of 84 questions in each questionnaire.

4.1.3 Choosing the respondents

As the questionnaire was aimed specifically at elderly and disabled people, it was important to exclude all others from the sample. Elderly people can be found relatively easily through available registers, while getting in contact with disabled people is more difficult. This problem was solved by contacting organisations for elderly and disabled people and asking for their permission to contact a sample selection of their members.

The organisations for disabled people were chosen in accordance with a previous study (Ståhl et al. 1993), in which the central committee for the organisations for disabled people had approved a list of 11 organisations as a representative sample of the body of disabled people in Sweden. However, the Swedish National Society for Persons with Mental Handicaps was excluded from the study, since psychological impairments were not included. Since people with mental handicaps and elderly people suffering from senility have quite particular needs in public transport that cannot be satisfied in a study like this, it is better to exclude these people all together from the study in order to avoid misunderstandings or

misinterpretation of the results. The three largest organisations for Swedish pensioners were contacted in the same manner as the organisations for impaired people. The organisations asked to participate in the study were the following:

Organisations for impaired people

1. SRF The Visually Handicapped National Organisation
2. RHL The Heart and Lung Patients Association
3. FSDB The Association of the Swedish Deaf-Blind
4. DHR The Swedish Federation of Disabled Persons
5. RBU The Swedish National Association for Disabled Children and Young People
6. NHR The Swedish Association of Neurologically Disabled
7. SDR The Swedish National Association of the Deaf
8. RMR The Swedish Rheumatism Association
9. RTP The Swedish Association for Persons Disabled by Accidents or by Polio
10. HRF The Swedish Association of Hard of Hearing People

Organisations for elderly citizens

21. PRO The Pensioners' National Organisation
22. SPF The Swedish Association for Senior Citizens
23. SPRF The Swedish National Organisation for Pensioners

All the organisations mentioned above gave their permission to send the questionnaire to a selection of their members. However, as the *Swedish National Association of the Deaf* did not answer any of the letters, e-mail messages, telephone calls or facsimiles that were sent, it was excluded from the study. Thus the sample of respondents was chosen among the members of 9 organisations for disabled people and 3 organisations for elderly people. A sample of 4,500 respondents was randomly selected from the members of the organisations contacted. 3,000 were members of the organisations for disabled people and 1,500 were members of the organisations for elderly people. The sample from each organisation was

proportional to the number of members on the national level (see Figure 4.1 for the sample size and distribution among the different organisations.)

Organisation abridgement	Number of members nationally	Number of members in AB-county	Number of members in G-county	Number of members in N-county	Number of members in M-county	Number of members in T-county	Number of members in AC-county	Sample size per organisation	Sample size per county
<i>Organisations for disabled</i>									
SRF	15940	2750	394	688	1853	483	624	224	37
RHL	41323	3277	1890	1356	3943	1788	4232	568	95
FSDB	680							18	3
DHR	29366	3174	865	584	2660	1126	936	406	68
RBU	17675	2362	288	820	1751	553	829	248	41
NHR	14860	1923	163		1180	289	400	210	35
RMR	54948	6826	714	2266	4786	1879	2446	754	126
RTP	9761	1894	247	521	1111	325	474	140	23
HRF	31291	4325	834		3817	537	1007	432	72
Total (dis.)	215844	23357	5495	6235	18441	5834	10948	3000	500
<i>Organisations for elderly</i>									
PRO	377544	55427	7466	13585	41063	14313	12303	891	149
SPF	202871	38986	4981	5043	29622	5885	6970	479	80
SPRF	55648	10694	1366	1383	8125	1614	1912	130	22
Total (eld.)	636063	105107	13813	20011	78640	21812	21185	1500	250
Total (all)	851907							4500	750

Figure 4.1 The sample size and distribution of the questionnaires among the different organisations (for county designations see table 4.2)

4.1.4 Geographic distribution of the questionnaires

The study was geographically concentrated on six counties in Sweden, which were chosen in order to represent different aspects of urbanisation, infrastructure and communications. The counties chosen were Stockholm, Kronoberg, Halland, Scania and Västerbotten. The sample from each organisation was evenly distributed among the counties, i.e. the number of members in each county was not considered.

Many of the organisations for impaired people also have non-impaired individuals as members (so-called supporting members who are not disabled themselves but may have a family member who is disabled and therefore have an interest in the organisation). These were to be excluded from the sample.

However, since the organisations have different methods of registering their members, it was not always possible to exclude supporting members before selecting the sample. Therefore it was decided not to exclude supporting members from any of the lists of members before the selection, but instead ask those who received a questionnaire to return only the first page.

County name	County designation	County name	County designation
Stockholm	AB	Scania	M
Kronoberg	G	Örebro	T
Halland	N	Västerbotten	AC

Figure 4.2 County names and county designations.

As there were 12 versions of the questionnaire, it was important that the different versions should be evenly distributed among the respondents from each organisation as well as among the six counties. This was done by carefully sorting the questionnaires before filling and addressing the envelopes, thus making sure that a similar share of versions was sent out to members of each organisation and also to each county.

4.1.5 Distribution of the questionnaires

The questionnaires were distributed by the Department of Technology and Society except for some organisations that chose to distribute the questionnaires themselves. In this case the organisations received the material packed and only had to address the envelopes and mail them.

The process of distributing the questionnaires was carried out in three steps. First the questionnaire was sent out with a letter from the Department of Technology and Society and a letter from the organisation in question explaining the study and the importance of the respondent's participation.

In the second step, those who had not yet answered or had not informed me that they did not wish to participate, received the same questionnaire once again with the same letters as before.

The third step was a postcard from the Department of Technology and Society sent to those who had still not answered the questionnaire or in any way stated that they did not want to participate in the survey, reminding the respondents of the importance of the study and kindly asking them to participate.

4.2 Response rate

The response rate and the distribution of answers between, for example, women and men as well as among different types of disabilities form the basis for analysing the data and also provide possible explanations for the differences in the need for travel information between subgroups in the results.

The overall response rate was 42%, which was expected as there are similar response rates in other surveys aimed at the same groups of people. There was no difference in response rate among the elderly and the organisations for impaired people but there were some differences within both groups. For example, only 33% of the visually impaired answered the questionnaire, while those with mobility handicaps answered to a greater extent.

PRO, the largest of the organisations for pensioners, produced a considerably lower response rate than the other two organisations for pensioners. This is probably due to the problems of distributing the

questionnaires of this particular organisation. PRO insisted on handling the distribution of the questionnaires themselves but failed to handle it in the time frame agreed upon. This resulted in the questionnaires as well as the reminders reaching the members of PRO in the middle of summer, when many people move to their summer houses or go on holiday for long periods of time. This could be a reason for the lower response rate from the members of PRO.

Organisation abridgement	Number of answers per organisation	Sample size per organisation	Share of total number of answers (%)
SRF	73	224	33%
RHL	241	568	42%
FSDB	5	18	28%
DHR	138	406	34%
RBU	101	248	41%
NHR	134	210	64%
RMR	324	754	43%
RTP	77	140	55%
HFR	186	432	43%
PRO	285	891	32%
SPF	260	479	54%
SPRF	53	130	41%
Total	1877	4500	42%
Whereof org. for disabled	1279	3000	43%
Whereof org. for elderly	598	1500	40%

Figure 4.3 Overall sample size and sample size from different organisations

SRF and DHR also have lower response rates than SRF and DHR also have lower response rates than the other organisations. In the case of the visually handicapped (SRF), this could be due to the fact that, even though the members of this organisation received the questionnaire on audio tape, many may have needed assistance to be able to answer it. However, the method of sending a the printed version of the questionnaire as well as an audio tape was discussed with and agreed upon with by SRF. I have no

answer to why the members of DHR did not answer the questionnaire to the same extent as members of the other organisations for the disabled.

4.2.1 Geographical distribution of answers

The response rates of the six counties in the study did not differ very much. The lowest response rate is found in the least densely populated county, Västerbotten, where a large number of the population live in the countryside or in small villages. This is plausible, considering that the inhabitants of Västerbotten do not have access to different public transport services to the same extent as people in more densely populated areas. Consequently they are not as affected by changes in the public transport services and may be less inclined to answer a questionnaire survey like the one in this study. People in less densely populated areas may thus be less motivated to participate in a study where specific services of the public transport system are explored.

County designation	AB	G	N	M	T	AC
Number of answers per county	332	300	328	330	309	278
Share of total number of questionnaires per county	44%	40%	44%	44%	41%	37%

Figure 4.4 Response rates from the six counties included in the study. A total of 750 questionnaire were sent out in each county.

The same tendency can also be observed when the household location of those who answered the questionnaire is considered. There is not an even distribution between household location between the different counties, as the majority of those who answered the questionnaire live in densely built-up areas. The counties included in the study were chosen so that they would represent different kinds of structures, one of which would be population structure and as the chance of coming across a member of an organisation for the elderly or disabled is greater in a densely built-up are,

the outcome is not so strange. The counties with a large part of the population in the countryside, i.e. Halland and Västerbotten, also have a distribution which reflects this. In the county of Stockholm a majority of the respondents live in densely populated areas, which is due to the fact that the city of Stockholm is Sweden's largest city.

County designation	AB	G	N	M	T	AC	Total
Densely built-up area	90%	75%	65%	79%	80%	69%	77%
Countryside	10%	25%	35%	21%	20%	31%	23%

Figure 4.5 Response rates according to household location

4.2.2 Age, disabilities and gender distribution

	Under 65 years	65 to 74 years	Over 75 years	Total
Men	65%	41%	43%	40%
Women	35%	59%	57%	60%
Total	33%	33%	34%	100%

Figure 4.6 Age distribution among the men and women who answered the questionnaire.

60% of those who answered the questionnaire were women and 40% were men. The age distribution among men and women is fairly similar. The distribution of women and men among the elderly is quite similar in both groups: approximately 60% are women and around 40% are men. However, the opposite applies to those under 65 years of age, where only 40% of those who answered the questionnaire are women and 60% are men. Figure 4.6 shows the age distribution within the two groups. As for the occurrence of disabilities represented among the men and women who answered the questionnaire, there are no large differences between the two groups. There are slightly more visually impaired women than men but

slightly more hearing impaired men than women. The speech impaired are a small group, but it is nevertheless interesting to note that there are almost twice as many men than women with speech impairments among those who answered the questionnaire (see Figure 4.7).

	Mobility impaired	Dizziness	Weakness, low stamina	Speech impaired	Visually impaired	Hearing impaired
Men	27%	27%	42%	9%	9%	17%
Women	25%	32%	49%	5%	15%	13%

Figure 4.7 Different kinds of disabilities among men and women.

When we look at the occurrence of disabilities in the different age groups, it is obvious that there are some differences between the three groups. In the groups under 75 years of age there is a somewhat larger proportion of people suffering from weakness or low stamina as compared to the oldest age group. There are also almost twice as many people with speech impairments among those under 65 years of age.

	Under 65 years	65-74 years	Over 75 years
Mobility impairments	22%	21%	16%
Dizziness	23%	20%	22%
Weakness, low stamina	38%	40%	29%
Speech impairments	8%	4%	3%
Visual impairments	7%	7%	12%
Hearing impairments	2%	8%	18%

Figure 4.8 Disabilities in different age groups.

Among those over 75 years of age, both hearing impairments and visual impairments are more common than within the younger age groups. The opposite applies to mobility impairments, of which there are a higher proportion in the two younger age groups.

4.3 Methods used for the data analysis

The focus-group interviews were analysed using the qualitative analysis method grounded theory. It is sometimes referred to as the mapping method which implies that a complete survey of the studied phenomena can be accomplished by sorting and systematising the material.

This is done by characterising the phenomena studied by means of different concepts. When this has been done, the data within the concepts are sorted into broad categories. Within each category it is then possible to point out dimensions which summarise the data in the category. Finally the data within each dimension are summed up in different qualities. The result is a thorough mapping of the data. The procedure is described in Figure 4.9 below.

Phenomena: Elderly and disabled people's experience of travel information
Category: Hear information
Dimension: Hear message
Quality: Understand message

Figure 4.9 Example of the mapping of data with the grounded theory method.

Thus the data are grouped in three sets, i.e. the data is summarised on three different quality levels: first a rough sorting into categories; then a somewhat more detailed division into dimensions, and finally the qualities within each dimension are described. The grounded theory method thus results in a quantitative collocation of the data as well as a qualitative description of it in the form of a list of clear demands expressed by the interviewees.

As for the analysis of the data from the questionnaires, several appropriate statistical methods were used. In all the analyses the statistical computer programme SPSS - Statistical Package for Social Sciences, version 10.1 - was used. Differences were regarded as significant if the p-value was lower than 0.5.

The Mann Mann-Whitney test is a common statistical method used to test if two samples come from the same population. It is one of the most popular non-parametric tests, and it is the non-parametric equivalent of the

Student's t-test, which is another statistical method commonly used for this purpose.

Rank correlation was used to evaluate which travel information increases in importance with a more severe disability. Rank correlation is used when the distribution of variables is not normal, and as the name implies, the method uses the differences between the ranks of corresponding values X and Y instead of using the actual values of the variables. The Spearman rank correlation was used in this study.

Factor analysis was used to evaluate if there are other ways to group the information than those used in the questionnaire study. Factor analysis is a multivariate statistical technique which analyses relationships between a large number of variables and explains them in terms of their common underlying dimensions. Thus factor analysis can be used to discover which sets of variables form connected subsets that are independent of each other - the variables that are correlated with one another and at the same time also independent from other subsets of variables are combined into factors. The factors generated thus represent the underlying patterns that created the correlation between the variables.

The common factor analysis was used in this study. This means that the factor solution was generated by using an estimate of common variance of the original variables, i.e. the number of factors will always be smaller than the number of original variables and all factors will be uncorrelated to one another.

The design of the questionnaires had implications for the factor analysis. The questionnaire was produced in 12 different versions, and the respondents thus only answered 40 questions out of 83. This meant that it was not possible to make one factor analysis of the whole material, which would have been preferable. Instead 12 factor analyses had to be performed, and a total of 97 factors were produced. These 97 had to be joined together in order to find the true factors representing the underlying pattern. This was done by creating a matrix in which the 83 original questions from the questionnaire were on the vertical side and the 12 factor analyses (A-L) were on the horizontal side. The number of a factor (1-97) was then put at the intersection of the factor analysis in which it had been produced and those of the questions (1-83) which were included in the factor in question. This allowed some systematisation of the process of identifying the "original" factors. The work was, as always in factor analysis, also a qualitative decision making process.

5 Elderly and disabled people's requirements for pre-journey travel information

This chapter describes elderly and disabled people's need for pre-journey travel information in public transport. The results presented here are based on the questionnaire survey focusing on pre-journey travel information for public transport by train and by bus.

In order to provide an insight into the travel behaviour of the respondents the chapter begins with an overview of the travel frequency of those who answered the questionnaire as well as their reasons for not travelling.

The chapter continues with a description of the requirements for pre-journey travel information expressed by the elderly and disabled people on an aggregated level. This is done in three ways: the results from the questions graded on a scale 1-7 in the questionnaire; the assessment questions, which were graded relevant to each other; and finally the results from the factor analysis. The differences in need for travel information on an aggregated level are also discussed for dichotomous groups regarding travel frequency, STS and household location, as these factors have an impact on people's options and possibilities to travel by public transport and consequently also influence the information requirements. After this the travel information requirements of sub-groups among the elderly and disabled are described, and finally the relation between the degree of the disability and the need for travel information is explored.

Travel information on both an aggregated level and for sub-groups among the elderly and disabled is considered important when it has acquired a mean higher than or equal to 3.

5.1 Travel frequency and reasons for unsatisfied needs to travel

When examining the results from a study like this, where the need for pre-journey travel information is explored, it is important to have an idea of the travel frequency of the people who have answered the questions. If it turns out that they have a rather low travel frequency, the information needs which they express may be a result of inexperience of public transport on the whole rather than an immediate need for travel information. In either case the need for travel information they express is important to explore further.

As it turns out, approximately 50% of the respondents leave their home daily or several times a week. 60% of these people are elderly, 50% of whom are very old, i.e. over 75 years of age. The remaining 50% leave their home less frequently and only get out a few times a month or even more seldom than that, and some actually never leave their home.

32% of the respondents are entitled to special transport service, STS. 60% of those entitled to STS are elderly, 80% of whom are very old. As expected, the travel frequency among those entitled to STS is lower than the average of all the respondents, since only 34% leave their home daily or several times a week.

Earlier studies have shown that many elderly and disabled people express an unsatisfied need to travel (see Chapter 2.1). This is confirmed in this study, as 58% of the respondents answered negatively when asked if they had the possibility to travel as much as they would like to at present.

Half of those who leave their home daily or several times a week state that they do not have the possibility to travel as much as they would like to. The corresponding figure for those entitled to STS is 43%, and for people living in densely/less densely built-up areas the figure is 39% for both groups.

There are of course a number of factors to be taken into account when considering the reasons for not having the opportunity to travel as much as one would like. Figure 5.1 shows to what extent the respondents agree with the reasons suggested for not travelling as much as they would like to. The cost of travel is an important factor, as both the elderly and the disabled are generally very price-sensitive groups. Insecurity is another decisive factor when it comes to not travelling as much as one needs to.

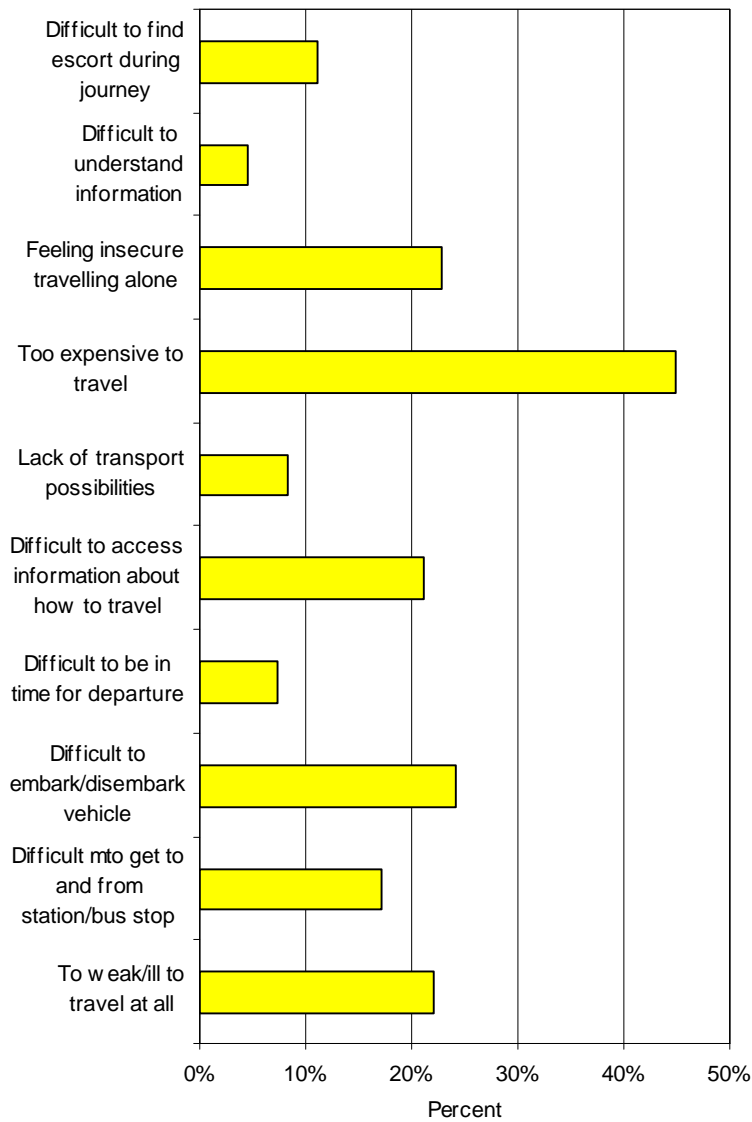


Figure 5.1 Reasons for not travelling as much as one would like to and the percentage of respondents who agree (note that it was possible to choose several reasons).

Over 20% of the respondents state that they feel insecure when travelling alone, and 11% claim that difficulties in getting the assistance they need

during a journey is a reason for not travelling to an extent which would meet their individual needs. The physical environment of the public transport system can also be difficult to master for many elderly and disabled people. It may make the journey difficult or impossible and travel by this mode is then no longer an option. One example of this is that 24% of the respondents state difficulties in embarking and disembarking the vehicle as a reason for not being able to travel. Another 17% find it difficult to reach the bus stop or train station from their homes.

With regard to travel information, 21% of the respondents state that they are unable to find adequate travel information about the journey they are planning, which prevents them from making the journey. This should be compared to the 4% of the respondents who state that they have difficulties in understanding the travel information they have access to when planning a journey. If the figures for accessing and understanding travel information are compared for different dichotomous groups based on travel frequency, STS entitlement and household location, it becomes obvious that this relation is something which applies to virtually all groups.

11% of those who leave their home daily or several times a week state that they cannot access the information they need when planning a journey as compared to 2% who do not understand the information they can actually access. The corresponding figures for those who travel less frequently are 12% and 2%.

The figures for those entitled to STS are 10% for not being able to access travel information and 6% for not understanding it. Of those not entitled to STS, 5% state that they cannot access the travel information they need, and 2% state that they have difficulties in understanding the information they can access.

There thus seems to be a problem accessing the travel information rather than understanding, which also corresponds with findings from other studies (see Chapter 2.3).

5.2 Pre-journey travel information required by all elderly and disabled people

The traditional travel information provided by public transport authorities and companies generally covers aspects like price, time and booking of journeys. Sometimes information about further travel options at the destination or what service is offered onboard is also available. This information can be regarded as a form of general pre-requisite for travelling, as one would not be able to plan a journey at all without this information regardless of one's physical capacity.

One of the hypotheses in this study is that elderly and disabled people also regard this kind of information as important when planning a journey by public transport, i.e. that there is travel information which is considered important by everyone who uses the public transport system. Another hypothesis is that elderly and disabled people also require kinds of travel information that are not offered today, both on an aggregated level and within sub-groups of the elderly and disabled. This has been observed in several previous studies but needs to be explored in greater detail (Brundell-Freij and Ståhl 1994, Börjesson et al. 1999, Liikenneministeriö 2000).

The results of the questionnaire study answer the question about the importance of traditionally offered travel information among elderly and disabled people on an aggregated level. They also answer the question about what other kinds of information elderly and disabled people in general view as important when planning a journey by train or by bus.

However, in order to produce relevant travel information it is also necessary to know not only what kinds of information travellers will be looking for, but also in what order to present this information, i.e. to find out what information is most important when planning a journey by train and by bus. It is therefore necessary to explore how travellers value specific kinds of travel information in relation to each other. Studying the means for different kinds of travel information on an aggregated level is one way of getting an idea of what kinds of travel information the whole collective of elderly and disabled people find most important when planning a journey.

The means can also be used to group the information and thus gain an understanding of what kinds of information elderly and disabled people find most important when planning a journey.

When the questionnaires were put together there was a discussion about whether the scale 1-7 would render enough information about the dispersion of the results. This is necessary in order to fulfil the intentions discussed above, and as all the questions per se could be regarded as important (based on the results of a study of necessary travel information), there was a need to ensure a possibility of dispersion among the results. This was done by adding one question where the respondents were asked to distribute 100 points over a random selection of 5 questions (see Chapter 4 for details). It was hoped that this would allow the respondents to create an individual scale and that the distribution of the results would become clearer and more easy to interpret.

As it turns out there is hardly any difference between the two assessment methods with regard to the ranking of information. When the information is organised in order of importance (according to the means on an aggregated level), the results are the same with a few exceptions. When the order of the questions is surveyed, it becomes clear that there is little, if any difference between the two assessment methods. There was also a possibility that the points method would result in such a dispersion among the questions that it would be possible to see groups of information which belong together.

The scale was indeed broader, but the distances between the different observations were approximately similar. The results did not occur in groups, as anticipated, but were as evenly distributed as were the results produced by the assessment method, where a fixed scale (1-7) was used. It was thus not possible to distinguish any groups among the questions, regardless of which assessment method was used.

To sum up it is possible to say that either method could have been used to validate the results from the focus-group interviews. In retrospect a simpler design for the questionnaire could have been used, which might have resulted in a higher response rate. It is also possible that each respondent could have answered more questions, and the total number of respondents could thus have been lower.

However, the results presented in this chapter are all based on the “fixed-scale” (1-7) assessment method. The information is divided into the same five groups as in the questionnaire study, that is general travel information, the railway station, the bus stop, the train and the bus. Where applicable, differences in the need for travel information among dichotomous groups based on age, travel frequency, household location and STS entitlement are also discussed.

5.2.1 General travel information

General travel information covers questions about information which is important for making the journey but does not specifically refer to either the railway station, the bus stop or any particular vehicle.

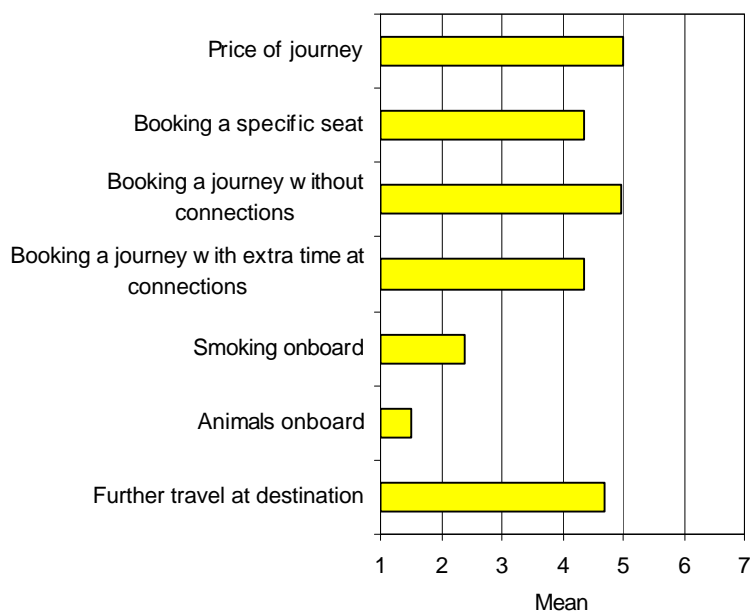


Figure 5.2 The means for questions 1-7 about general travel information displayed on the original scale (1-7). All elderly and disabled respondents.

Information about the price of the journey and the possibilities to travel without having to change vehicles during the journey are expected, very important with means close to 5 (see Figure 5.2). If it is not possible to travel without connections, elderly and disabled people also want to know whether it is possible to book a connection which allows them extra time to change vehicles.

Many elderly and disabled people have mobility impairments which make them a little slower when walking for example which could be why the possibility to book a journey with more time than is usually considered normal at connections receives such a high mean - over 4.

Information about being able to choose a seat when booking is also considered important as are the travel options available after reaching one's destination. There could be reasons like sitting near the lavatory or near the exit for choosing a specific seat.

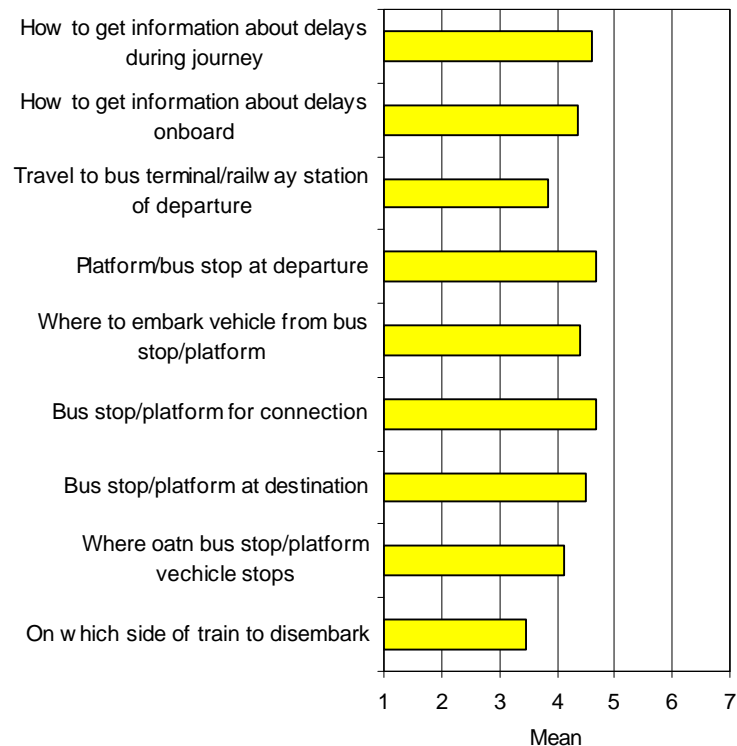


Figure 5.3 The means for questions 8-16 about general travel information displayed on the original scale (1-7). All elderly and disabled respondents.

Questions about practical information such as which platform the train will be leaving from at departure or at connections during the journey all received means over 4 and can thus be considered important information for elderly and disabled people when planning a journey by train or by bus (see Figure 5.3). They also want to know where at the platform or bus stop the vehicle will be stopping, so that they will know where to wait to embark in order to find their seat easily. This could also be connected to the mobility problems experienced by many elderly and disabled people – it is important to be in the right place to embark the vehicle, as there may

not be much time to find the right door once the vehicle arrives at the platform or bus stop. It is also often more convenient to walk on the platform than in the train.

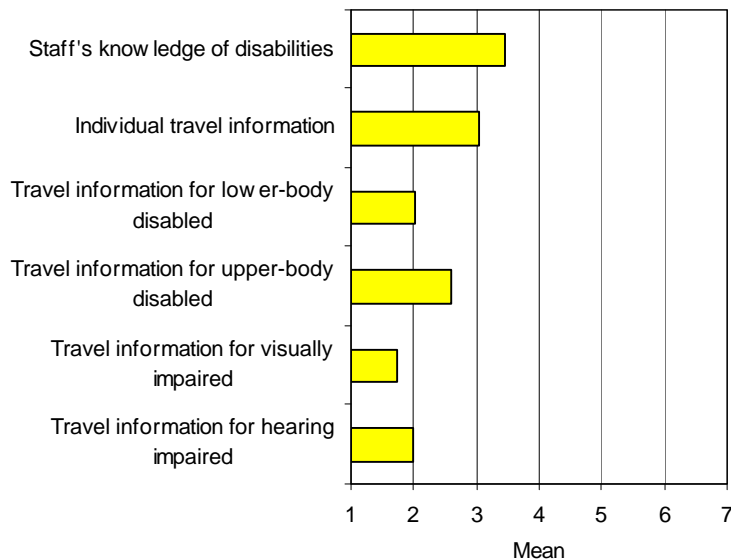


Figure 5.4 The means for questions 17-22 about general travel information displayed on the original scale (1-7). All elderly and disabled respondents.

Information about delays before and during the journey also receives high means, and this kind of information is especially important if the journey involves several connections, i.e. how to get information about delays during the journey. Many disabled people also find it difficult to apprehend information which is offered during the journey, for example hearing impaired and visually impaired people.

Elderly and disabled people also want to know whether the staff they meet during the journey have any knowledge about common disabilities and diseases. The staff should also know how common disabilities and diseases manifest themselves and how people with these disabilities and diseases should be treated.

The possibility to receive travel information especially compiled for each individual traveller is considered important by elderly and disabled people

on an aggregated level. The possibility to receive travel information which takes one's individual prerequisites when travelling by train or by bus into account has a mean of 3.2 on an aggregated level. This should be compared to the relatively low means for other options of specially compiled travel information.

Travel information specially compiled for certain groups of the disabled does not have very high means on an aggregated level and is thereby not considered an important option by the elderly and disabled when planning a journey. In fact, all four questions about travel information for groups of disabled people receive means lower than 2 except travel information for people with upper-body disabilities, which has a slightly higher mean of 2.6. These questions naturally mainly interest people who suffer from this specific disability, and the results may therefore be higher for a specific group of disabled people.

The option of having access to individually compiled travel information is also considered more important by people living in the countryside. Elderly and disabled people who travel less frequently, i.e. leave their home a few times a month or even more seldom, are also interested in individually compiled travel information.

The less frequent travellers among the elderly and disabled also assign higher means to all the general travel information which has been established as important for elderly and disabled people on an aggregated level. This especially applies to information about practical matters, e.g. which platform to go to or which side of the train to disembark from, which all receive means well over 4 in this group. Information about how to get to the bus terminal or railway station from home is also important and has a significantly higher mean among less frequent travellers as well as among those of the elderly and disabled who live in less densely populated areas. Both groups assign a mean of 4.2 to this question.

The older elderly, i.e. people over 75, are more interested in where to stand on the platform or bus stop in order to embark the vehicle easily and which side of the train to disembark from. They are also more interested in the staff's knowledge of disabilities. All these questions have means over 4.

The older elderly are also more interested in travel information specially compiled for the visually impaired and the hearing impaired as well as individually compiled travel information. This interest is also reflected in the high means scored in this group for the questions about how to get information during the journey and while onboard.

When looking at the general travel information which elderly and disabled people find important, and considering the need for travel information which has been discussed before (see Chapter 2.3), one possible explanation of the interest in the practical matters involved in the journey is that elderly or disabled travellers use the information to reduce their insecurity before a journey. Knowing where to go and where to stand reduces the psychological effort and allows more energy to be concentrated on those physical obstacles in the public transport environment that an elderly or disabled traveller might find laborious.

To sum up elderly and disabled people require pre-journey travel information about price and booking possibilities as well as possible options for further travel at their destination. They also need information about the practical matters involved in the journey, e.g. platform numbers for departures and connections as well as at the destination. It is also important for them to know where on the platform or at the bus stop the bus or train compartment will stop. Elderly and disabled people find it important to be able to access travel information which has been compiled according to their individual needs as well as to be reassured of the staff's knowledge of common disabilities and diseases.

5.2.2 The railway station and the bus terminal

The questions about the bus terminal and the railway station cover information about the buildings, services and facilities which are available during the journey. Since the questions about the bus terminal and the railway station are identical, except for the question about escort service at the railway station, they are displayed in the same figure (see Figure 5.6). The questions about the bus terminal and the railway station have not been separated in the presentation of the results in this chapter, except where it has been found necessary because they differ significantly.

As it turned out, the means for the questions about the bus terminal and the railway station are quite similar. However, most of the means are quite low, and only a few questions received means over 3.

Knowing that there is a possibility to park near the bus terminal or railway station is important for elderly and disabled people. This question receives a mean of approximately 4, as does information about luggage storage facilities at the bus terminal and railway station.

Information about which doors have automatic openers is also considered to be important on an aggregated level, whereas the location of the automatic opener does not reach a mean of 3. However, both questions

are considered important by those elderly and disabled people who travel less frequently and by the older elderly, i.e. people over 75.

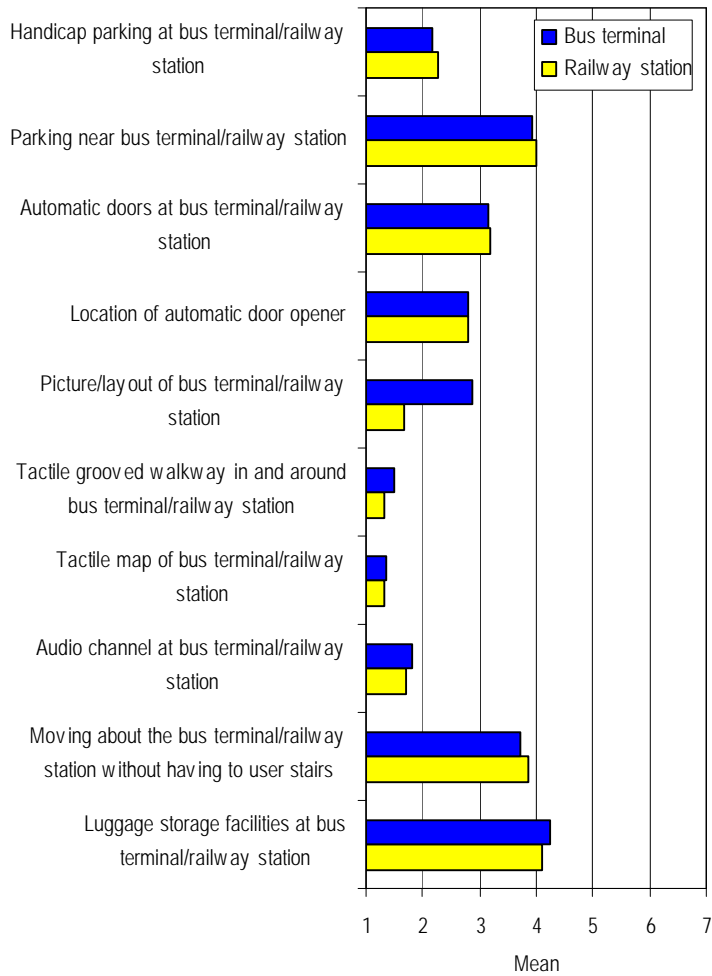


Figure 5.5 The means of questions 1-10 about the train and the bus displayed on the original scale (1-7). All elderly and disabled respondents.

When they plan a journey, elderly and disabled people also want to know whether there will be staff at the bus terminal or railway station during the journey. Knowing that there will indeed be staff receives means slightly over 4.4 for both the bus terminal and the railway station. The service which will be available at the railway station or bus terminal during the

journey also receives a mean over 4.4. Both of these questions also have significantly higher means among those elderly and disabled people who travel less frequently.

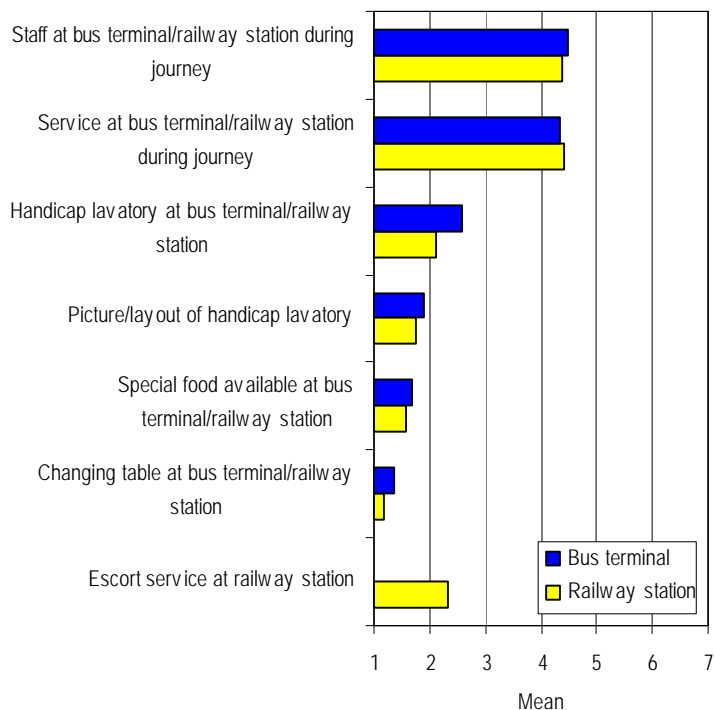


Figure 5.6 The means of questions 11-17 about the bus terminal and the railway station displayed on the original scale (1-7). All elderly and disabled respondents.

Information about whether it is possible to move about the railway station or bus terminal without having to use stairs is considered to be important pre-journey planning information. Again, this is more important for those elderly and disabled people who travel less frequently as well as for the older elderly.

Information about having access to a handicap lavatory at the bus terminal or railway station as well as to a picture or the layout of it does not attract much interest among the elderly and disabled on an aggregated level. This information could, however, be of crucial importance to certain sub-groups among the elderly and disabled. The differences between the bus

terminal and the railway station, albeit having means well under three on an aggregated level, can be found among the questions regarding the pictures/layout of the handicap lavatory, the bus terminal and the railway station. The interest is somewhat higher for the bus terminal for all three questions. This low interest in the layout could possibly be due to the fact that bus travel is more common and thereby more accessible than trains for long-distance journeys in many parts of the country.

The questions concerning specific disabilities, such as tactile maps or audio channels in the buildings, do not receive means over 3 on an aggregated level. However, it turns out that the older elderly assign a mean well over 3 to the audio channel. This group also assigns a mean over 3 for access to escort service at the railway station.

The high mean assigned to information about the possibility to move about the bus terminal or railway station shows that there is an interest in information concerning mobility handicaps, as does the mean for information about automatic doors at the bus terminal and railway station. The location of the automatic opener also receives a fairly high mean on an aggregated level. Elderly and disabled people also want to know that there will be staff at the bus terminal or railway station *when they are travelling* as well as what service will be available at the bus terminal or railway station *during their journey*, i.e. elderly and disabled want to have information about when there will be staff at the station and when service of some kind will be available. This could be regarded as just another piece of information which makes it easier to plan a journey but it could also be viewed as a way for travellers to make sure that they will not arrive at a closed and empty bus terminal and not manage to open the doors.

If the information about the bus terminal and the railway station is considered from the aspects of comfort and absolute information (as discussed in the introduction), it is obvious that it is the comfort information which is important on an aggregated level, i.e. when all elderly and disabled people are taken into account. This is true for all kinds of information which received means over 3, except for the possibility to move about the bus terminal or railway station without having to use stairs as well as the information about automatic openers. These two questions are definitely closer to the absolute information than the other important questions on this aggregated level.

The conclusion drawn about elderly and disabled people's need for pre-journey travel information concerning the bus terminal and the railway station is that they find it important to know about parking and luggage storage facilities. In addition, elderly and

disabled people on an aggregated level wish to have pre-journey travel information about whether there will be staff at the station during their journey and what service will be available during their journey. The possibility to move about the bus terminal or railway station without having to use stairs as well as knowing which doors have automatic openers are also aspects considered important when planning a journey by train and by bus. The latter two questions are more important to the older elderly, i.e. people over 75, as is the information about access to an escort service at the railway station.

5.2.3 The train and the bus

The questions about the train and the bus cover information about the vehicles as well as the service and facilities available onboard.

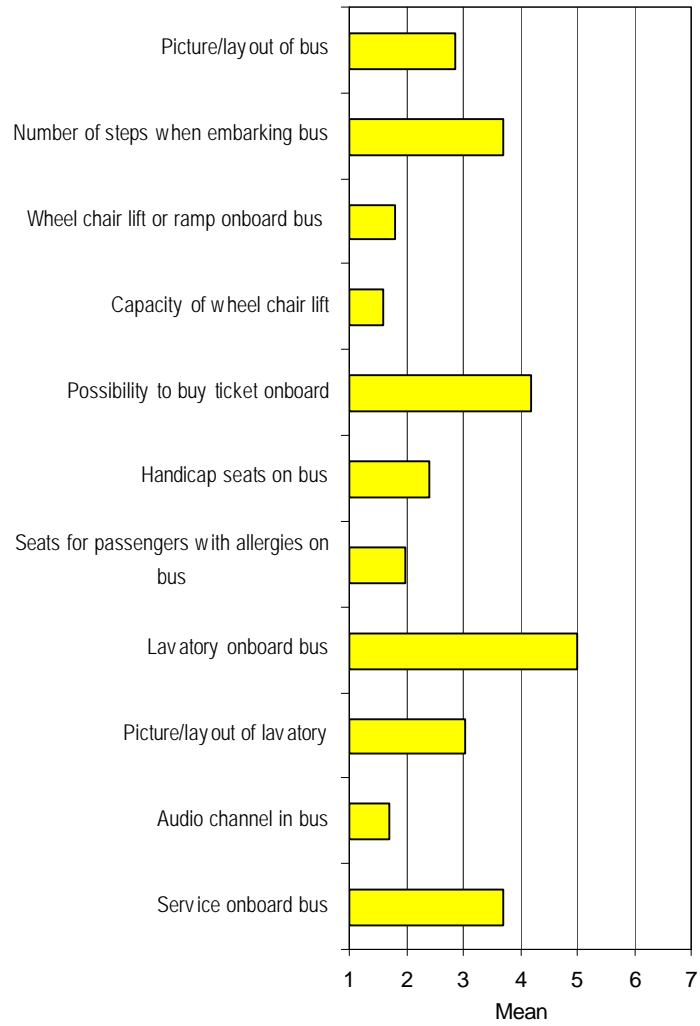


Figure 5.7 The means for questions about the bus displayed on the original scale (1-7). All elderly and disabled respondents.

When the means assigned by all elderly and disabled people are examined, it is possible to see that information about whether there is a lavatory onboard the bus is considered important pre-journey information. The mean for this question is 5, which is quite high. Access to a picture or the layout of the lavatory onboard the bus is also considered important and receives a mean slightly over 3.

The lavatories onboard buses are often very small, and this may be a reason for the interest expressed in the layout of the lavatory – the fact that there is a lavatory onboard does not always mean that it is possible to actually use it. The information about whether there is a lavatory onboard also has significantly higher means among those who travel less frequently and among those who live in densely populated areas as well as among the older elderly, i.e. those over 75, who also assign significantly higher means to the possibility to have access to a picture/layout of the lavatory onboard the bus. The wheel chair lift and its capacity are not considered important on an aggregated level, but this information may well be interesting to certain sub-groups. However, elderly and disabled people on an aggregated level do want information about the number of steps involved in embarking the bus, which is also more interesting for the older elderly.

Whether or not it is possible to buy a ticket onboard the bus is important to know when planning a journey as is the service available during the journey; the means are 3.8 and 4.1 respectively.

Most of the questions regarding the train have means well under 3 (see Figure 5.8 and Figure 5.9). The questions considered important by all elderly and disabled people concern information about such things as luggage storage facilities onboard and whether it is possible to buy a ticket onboard, i.e. if it is possible to go directly to the train without booking or planning too far ahead as well as not having to use an automatic machine to buy the ticket. Information about how many steps there will be when embarking the train also received a mean over 3. These questions also have significantly higher means among elderly and disabled people who travel less frequently as well as among the older elderly.

As was the case with the bus, information about whether there is a wheel chair lift onboard the train and its capacity does not attract much interest on an aggregated level. Other questions about information that could be of interest to people with mobility impairments do not receive very high means either when all elderly and disabled people are taken into account.

The interest in information about specific seats for the disabled onboard the bus is a little higher than for similar questions about the train, but then again there is only one question about handicap seats on the bus and several about the train (see Figures 5.7, 5.8 and 5.9). These questions are also more important for those of the elderly and disabled who travel less frequently, even though the mean does not reach 3 for either group. The older elderly are also more interested in this kind of information, and the question whether it is possible to keep one's walking aid by one's seat in the train is assigned a mean well over 3 in this group.

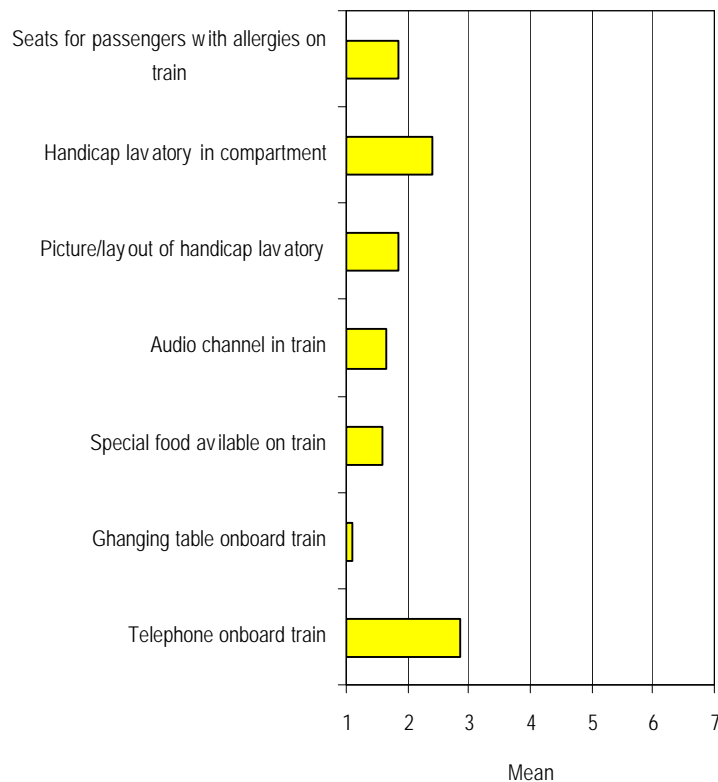


Figure 5.8 The means for questions 1- 7 about the train displayed on the original scale (1-7). All elderly and disabled respondents.

When looking at what kinds of information about the train and the bus elderly and disabled people want to have access to before making a journey, it is possible to see that it is mostly about the service and facilities

onboard and whether it is possible to buy a ticket onboard with the exception of one question – the number of steps to embark the vehicle.

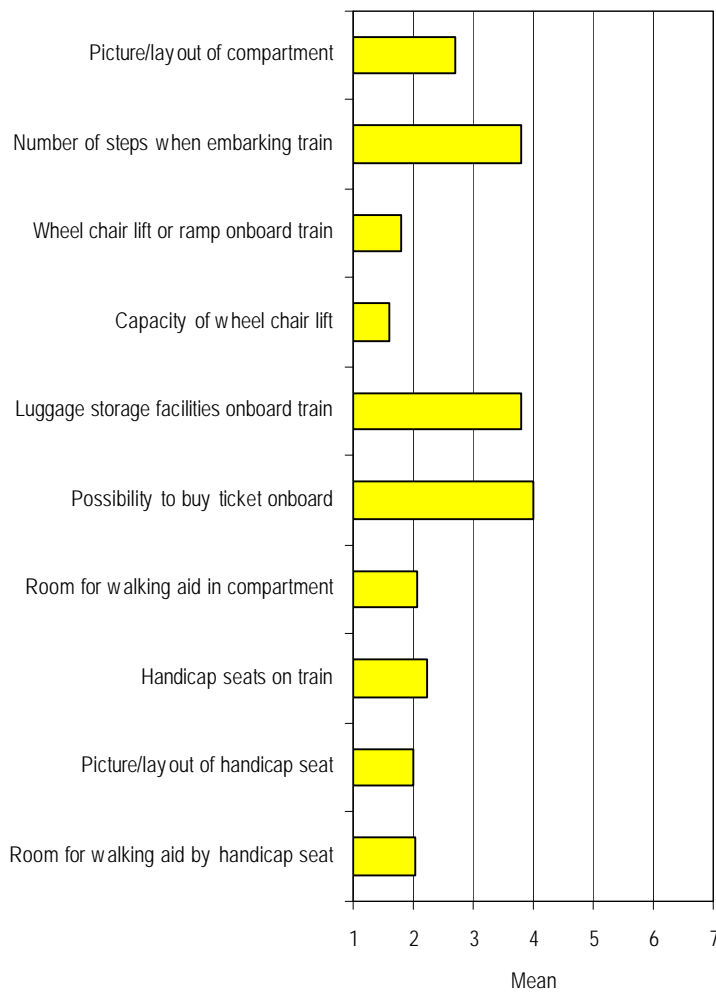


Figure 5.9 The means for questions 8-17 about the train displayed on the original scale (1-7). All elderly and disabled respondents.

This indicates that there is an interest among the elderly and disabled in information regarding mobility impairments. The interest expressed in comfort information (like service onboard) may also indicate that, once onboard the bus everything is more or less alright until the next change or

stop – except for the lavatory, which must be regarded as absolute information.

To sum up, the information which the elderly and disabled consider to be important on an aggregated level is about whether it is possible to buy a ticket onboard as well as the number of steps there are when embarking the vehicle. The luggage storage facilities onboard are important, as is the service offered onboard. Information about the lavatory and its layout is also important.

5.2.4 Another way of compiling travel information

As mentioned earlier, the 83 questions which resulted from the focus-group interviews were compiled in 5 groups: general travel information, information about the railway station and the bus terminal and information about the vehicles, i.e. the train and the bus. This division of the material has been kept throughout the study, but there may well be other themes around which the questions could be grouped in order to make more sense to an elderly or disabled person looking for travel information. Thus it is interesting to explore whether there are other patterns among the questions than the division used in the questionnaire.

A factor analysis is a way of examining the correlations between the questions, thereby gaining an understanding of which questions “belong together” (see Chapter 4 for details). A factor analysis performed on the data from the 83 questions resulted in 12 factors, which are described below (for a detailed description of the questions included in each factor, see Appendix III).

- A. General travel information - *this factor covers general travel information concerning prices and bookings as well as travel information about which platform to go to and where to stand on the platform in order to embark the vehicle.*
- B. Parking at the bus terminal and railway station - *this factor covers travel information about parking and handicap parking at the bus terminal and railway station.*
- C. Ticket onboard - *this factor covers information about whether it is possible to buy the ticket onboard.*
- D. Mobility at the bus terminal and railway station without having to use stairs or open heavy doors - *this factor covers information about whether it is possible to move about the bus terminal and railway station*

without having to use stairs as well as information about automatic doors and where the opener is located.

- E. Information specially compiled for the mobility impaired - this factor covers information about handicap seats and room for walking aids in the vehicle as well as information about handicap lavatories and the layout of buildings, vehicles and lavatories. This factor also contains information about automatic doors and wheel chair lifts onboard the vehicles as well as the capacity of the wheel chair lift.*
- F. Service available during the journey - this factor covers information about what service is offered during the journey that is being planned as well as information about whether there will be staff at the bus terminal and railway station during the journey. It also covers information about facilities such as telephones and luggage storage facilities.*
- G. Service available onboard - this factor covers information about the facilities and service offered onboard the bus and the train.*
- H. Information specially compiled for the visually impaired - this factor covers information about tactile grooved walkways and maps at the bus terminal and the railway station as well as whether it is possible to bring animals (guide dogs) along on the journey.*
- I. Information specially compiled for the hearing impaired - this factor covers information about audio channels at the bus terminal, the railway station and onboard the vehicles.*
- J. Information specially compiled for passengers with allergies - this factor covers information about special seats for passengers with allergies on the bus and the train as well as information about whether special food is available at the bus terminal or the station; it also covers information about where smoking is allowed onboard the vehicles.*
- K. Information about whether animals are allowed - this factor includes questions about the possibility to bring animals on the bus and the train, including guide dogs for the visually impaired.*
- L. Information about whether there is a changing table at the bus terminal, at the railway station or on the train - this factor covers information about whether there is a changing table at the bus terminal or railway station.*

The 83 questions could thus have been divided into these 12 groups, making the questionnaire look a bit different from what it did in this study. However, two observations based on the factor analysis can be made. First, the 12 factors may represent a more natural way for elderly and disabled people to look for travel information, i.e. it may be better to use this division of the questions when the travel information is presented to the end-users than to continue to use the division made in the questionnaire study.

Secondly the results from the factor analysis show that five out of these 12 factors comprise travel information which is important for groups of disabled people. This indicates that it will be useful to gather information concerning a certain disability and also that there is an interest in travel information concerning the travel situation for a specific disability group. However, the results so far have been on an aggregated level, and the results from the factor analysis also indicate that there may well be a more diverse interest in travel information among groups with specific disabilities. We must therefore conclude that it is necessary to explore the results for sub-groups based on different types of disability to fully understand the pre-journey travel information requirements of elderly and disabled people.

5.3 The pre-journey travel information required by sub-groups among the elderly and disabled

As shown in Chapter 5.2, many of the questions regarding travel information were found to be important for the whole collective of elderly and disabled people. There were also quite a few questions about travel information which the elderly and disabled as a group did not find important when planning a journey by train and by bus. These questions generally deal with travel information which may be important or interesting for a minor group of the elderly and disabled people, which is also indicated by the result of the factor analysis (see Chapter 5.2.5). There is thus a need to look into the travel information needs of sub-groups among elderly and disabled people.

The travel information needs of sub-groups among elderly and disabled people beyond the requirements stated on an aggregated level will be explored in this chapter. Hence it will be explored if travel information which is assigned low means on an aggregated level turns out to be important to sub-groups among the elderly and disabled. For certain groups, for example the mobility impaired, the need for some questions about travel information will be displayed for the sub-group even though the means on an aggregated level were over 3.

In contrast to the previous chapters, where the information has been in focus, the disabilities are focused in this chapter. The division in the sections below is made according to six different types of disability; mobility impairments, dizziness, weakness or low stamina, speech impairments, visual impairments and hearing impairments. As it is the impairments that cause the handicaps in the travel context, age will not be displayed as a separate sub-group but will be treated as a dichotomous variable and discussed where applicable.

The results are based on the answers given by respondents who have stated that they have a disability. The questions regarding disabilities in the questionnaire were quite general, as they were only asked to give an indication of the obstacle a person may encounter in the public transport environment. Many of the respondents may of course be old and also have several disabilities. The results scored for different groups may thus contain information from the same individuals. This is not regarded as a problem, however, since the goal of this study is to find out what need for pre-journey travel information different disabilities result in. In other words, being both mobility and hearing impaired does not mean that one is

not able to answer questions about travel information for the hearing impaired in an unbiased way. A question could also turn out to be important for several groups of disabled people who use the information for the same purpose or for totally different purposes.

The questions discussed for different sub-groups in this chapter all have means over 3 and are thus regarded as important pre-journey travel information. The figures show the distribution of grades on a scale from 1 to 7 among the respondents to illustrate the homogeneity or heterogeneity of the answers.

Where applicable, the results for dichotomous groups within the sub-groups are discussed. Generally the results for the different dichotomous groups are similar to those for the sub-group, i.e. they also have means over 3 for this kind of travel information. Also, when discussing dichotomous groups within a sub-group, it is of course the people within the sub-groups that have been divided into the dichotomous groups – for example, when discussing the less frequent travellers in Chapter 5.2.1, it is the less frequent travellers *among the mobility impaired* who are discussed.

5.3.1 Mobility impairments

The possibility to access travel information which is compiled for people with a specific disability did not attract much attention among the elderly and disabled on an aggregated level. They were, however, interested in the possibility of accessing travel information which has been compiled according to their own individual needs. When these questions are surveyed among the mobility impaired, it becomes clear that they too are interested in getting individual travel information to a much larger extent than on an aggregated level.

The mean for this question among the mobility impaired is 5, which can be compared to 3 on the aggregated level. Approximately 50% of the mobility impaired gave the possibility to access individually compiled travel information a grade 6 or higher (see Figure 5.9). Thus the need for individual solutions when it comes to travel information is pronounced among the mobility impaired. The older elderly, i.e. elderly people over 75, assign higher means to this question as well as those of the mobility impaired who leave their home daily or several times a week.

However, the question concerning travel information specially compiled for people with lower-body mobility impairments has even higher values

among the mobility impaired. The mean is 5.52 and over 60% of the mobility impaired who answered this question give a grade 6 or 7 to the necessity of having access to this kind of travel information when planning a journey by train and by bus.

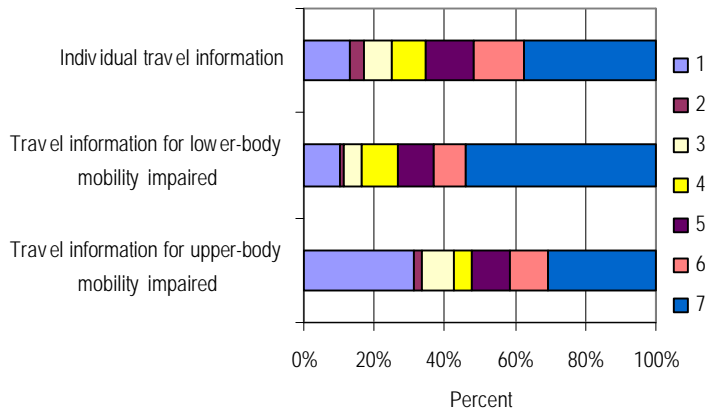


Figure 5.10 Distribution of grades assigned to a selection of questions about general travel information by mobility impaired respondents.

The travel information specially compiled for upper-body mobility impaired has a somewhat lower mean (4.2) than the other two questions but is still considered important by the mobility impaired. When the grades for this question are scrutinized it is also possible to see that it has a considerably higher percentage of grade 1 than the other two questions about specially compiled travel information.

The questions about where the automatic doors or doors with automatic openers are located at the bus terminal or railway station are examples of these questions and the interest in this kind of information is indeed high: the means are 4.5 for the bus terminal and 4.9 for the railway station. Around 40% of the mobility impaired also gave this kind of pre-journey travel information a grade 6 or higher (see Figure 5.10 and 5.11). Although this question is important to all mobility impaired people, it has significantly higher values among those who travel less frequently as well as among the older elderly.

However, having access to the bus terminal or railway station through an automatic door does not per se mean that one is able to use that door. If one has to press a button or pull a string to use the automatic door, it is

crucial that one can actually use the button or string, which is why the knowledge of its location is essential. This is also recognised by the mobility impaired, about 30% of whom give this question a grade 6 or higher. The less frequent travellers among the mobility impaired find this kind of travel information more important than the more frequent travellers.

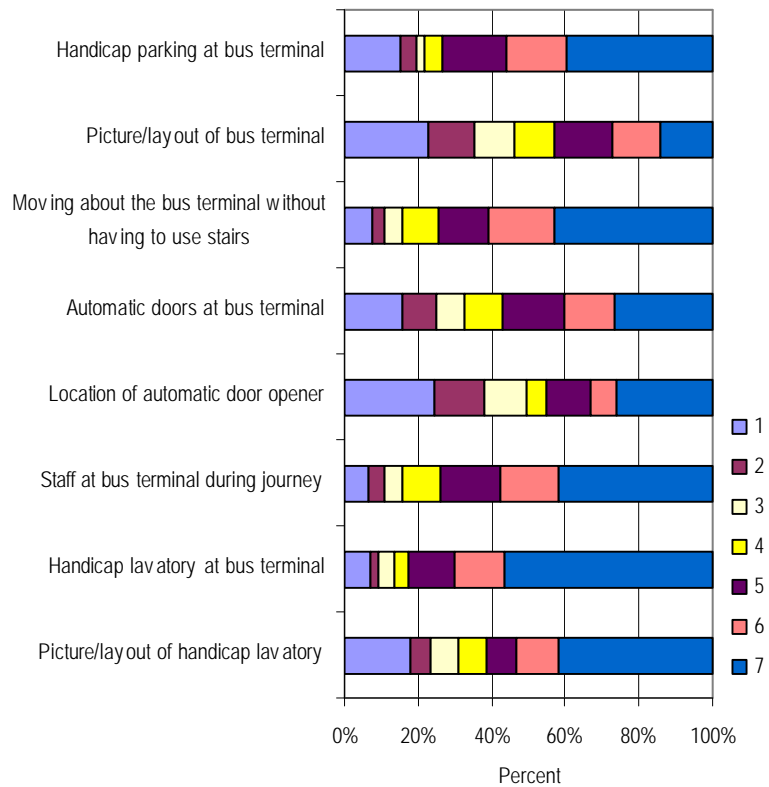


Figure 5.11 Distribution of grades assigned to a selection of questions about the bus terminal by mobility impaired respondents.

As for travel information about the bus terminal and the railway station, there are a number of questions which could be of interest to the mobility impaired. Many respondents in this group use some form of walking aid and were able to find information about how to travel when one uses a walking aid, i.e. if it is possible to use facilities and otherwise move about

the bus terminal or railway station with, for example, a walker or in a wheel chair.

The possibility to move about the bus terminal or railway station without having to use stairs is also essential for the mobility impaired. Over 60% give this kind of travel information grade 6 or higher, and the question has a mean of 5.4 for the bus terminal and 5.6 for the railway station in this group. This question is also considered more important by those entitled to STS than by those without STS as well as by less frequent travellers as compared to frequent travellers.

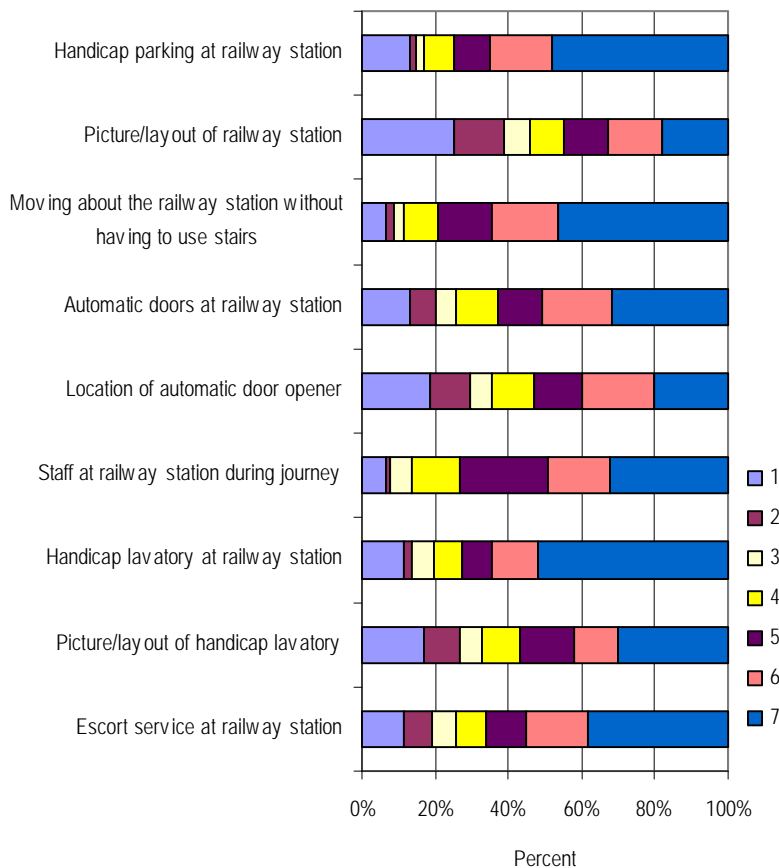


Figure 5.12 Distribution of grades assigned to a selection of questions about the railway station by mobility impaired respondents.

The mobility impaired also require information about whether there is a handicap lavatory at the bus terminal or railway station. 70% of the group give this travel information grade 6 or higher – the means are 5.8 and 5.4 for the bus terminal and the railway station respectively.

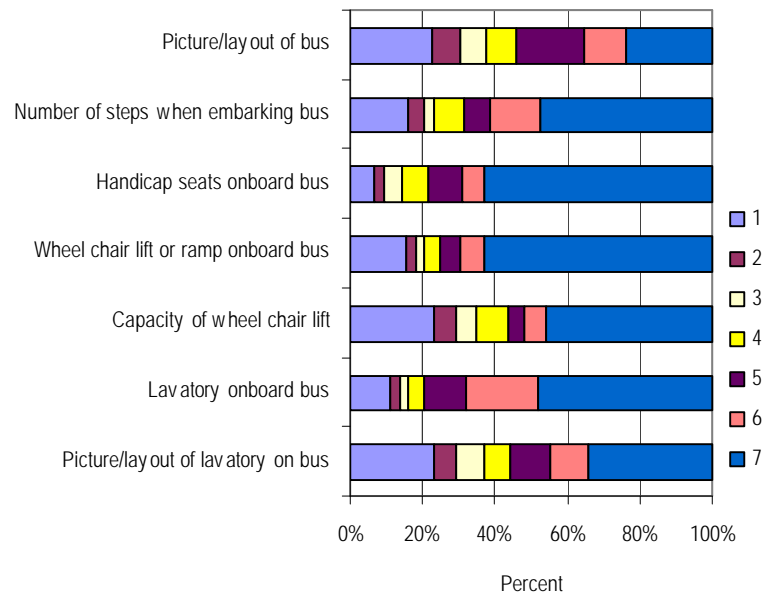


Figure 5.13 Distribution of grades assigned to a selection of questions about the bus by mobility impaired respondents.

There is also a considerable interest in information about what the handicap lavatory looks like, which is probably due to the fact that many mobility impaired are not able to access any other kind of lavatory. A picture or the layout of the handicap lavatory is a great help when a mobility impaired person has to determine whether he or she can actually use the lavatory, since many mobility impaired people need to use their walking aid in the lavatory. Over 50% of the mobility impaired grade this travel information as 6 or 7. The less frequent travellers also display significantly higher means for having access to a picture or the layout of the handicap lavatory.

The mobility impaired consider it an absolute necessity to know whether there will be staff at the station during their planned journey, and they also wish to know whether they will have access to an escort service at the

railway station. Both questions have means over 5, and over 50% of the grades for this question are 6 or higher. This question is also more important for those who travel less frequently and for those who are entitled to STS.

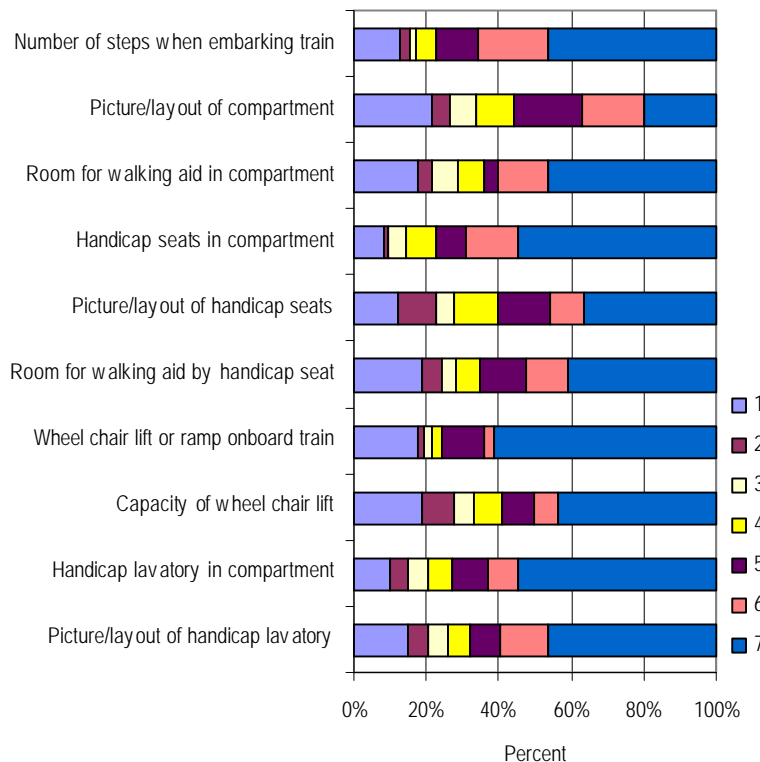


Figure 5.14 Distribution of grades assigned to a selection of questions about the train by mobility impaired respondents.

As for pre-journey travel information about the bus, mobility impaired travellers consider information about whether there are handicap seats on the bus they plan to travel with to be important information (see Figure 5.12). They also find it important to know whether there is a wheel chair lift on the bus and, if so, its capacity. 70% of the mobility impaired who answered this question grade information about a wheel chair lift as 6 or higher. The capacity of the wheel chair lift is also considered to be important information, as is knowledge about the number of steps to climb when embarking the bus. Both these questions have a large

proportion of high grades, and they also receive high grades when asked about the train.

Since many mobility impaired people rely on their walking aid, it is important for them to know that there is room for it by their seat or in the compartment they are travelling in. Over 50% of the mobility impaired who answered this question give both the compartment and the handicap seat grade 6 or higher(see Figure 5.13).

The possibility to have a picture or the layout of the bus or the train compartment is considered important among the mobility impaired, but the distribution of the grades assigned to these questions shows that the group is not unanimous – some find it essential to have access to a picture or the layout, whereas some feel that they do not need it at all. However, approximately 40% of the mobility impaired grade this kind of travel information 6 or higher.

To sum up, the mobility impaired find travel information concerning mobility at the bus terminal and railway station as well as in the vehicles important. Mobility is in focus, and the information concerns the possibilities of the individual to manage in this environment, i.e. knowing where there are stairs and the layout of the handicap lavatory as well as the number of steps there are to embark the vehicle.

The mobility impaired require information about how to move about the bus terminal and railway station without having to use stairs as well as which doors open automatically. The location of the door opener is also important information. How to get onboard the vehicles, that is knowing the number of steps when embarking and whether there is a wheel chair lift onboard is also important planning information for the mobility impaired.

5.3.2 Dizziness

The fact that people suffering from dizziness often use a walking aid also applies to this study: 75% of the respondents state that they use some sort of walking aid, and thus their handicap in the travel situation can be compared to that of people with mobility impairments. Most of the questions which the sub-group of the mobility impaired find important are considered important by those suffering from dizziness.

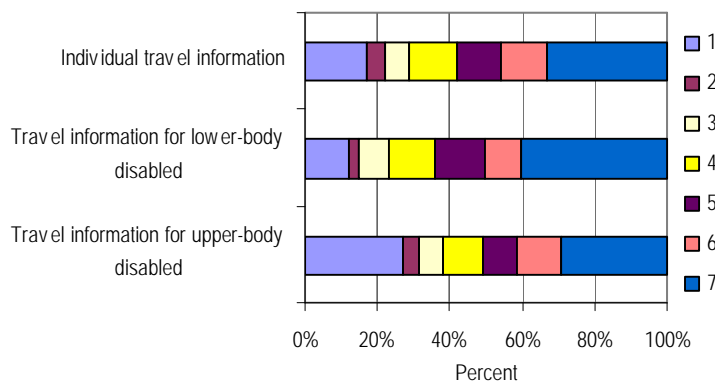


Figure 5.15 Distribution of grades assigned to a selection of questions about general travel information by respondents suffering from dizziness.

This also becomes obvious when the distribution of grades for travel information specially compiled for different groups of the disabled is scrutinized. People suffering from dizziness are interested in travel information compiled for both upper-body and lower-body disabled as well as individually compiled travel information, which is a result similar to that of the mobility impaired. All three questions have been assigned at least 40% of grades 6 and 7 (see Figure 5.15). The question about individually compiled travel information also receives a significantly higher mean among those in the sub-group who travel less frequently.

With regard to the bus terminal and railway station, people suffering from dizziness express an interest in being able to move about the bus terminal or railway station without having to use stairs. Approximately 50% of the grades assigned to this question are higher than 6 (see Figures 5.15 and 5.16).

Travel information about whether there are automatic doors at the bus terminal or railway station and about the location of the door opener is not assigned the same number of grades 6 and 7. Nevertheless, the means for these questions show that they are important for people suffering from dizziness; they are well over 4 for information about automatic doors and over 3 for the location of the opener. The older elderly, i.e. those over 75, also find this kind of travel information important.

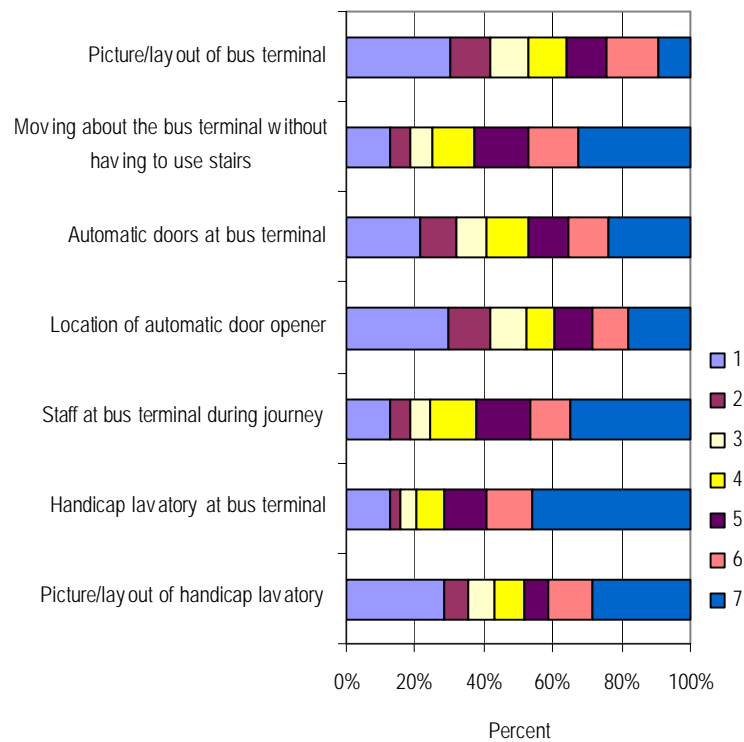


Figure 5.16 Distribution of grades assigned to a selection of questions about the bus terminal by respondents suffering from dizziness.

Travellers suffering from dizziness find access to information about whether or not it is possible to get assistance from the escort service at the railway station important. Around 50% of the grades for this question are 6 or 7. This knowledge is also more important for the less frequent travellers as well as for those entitled to STS among those suffering from dizziness.

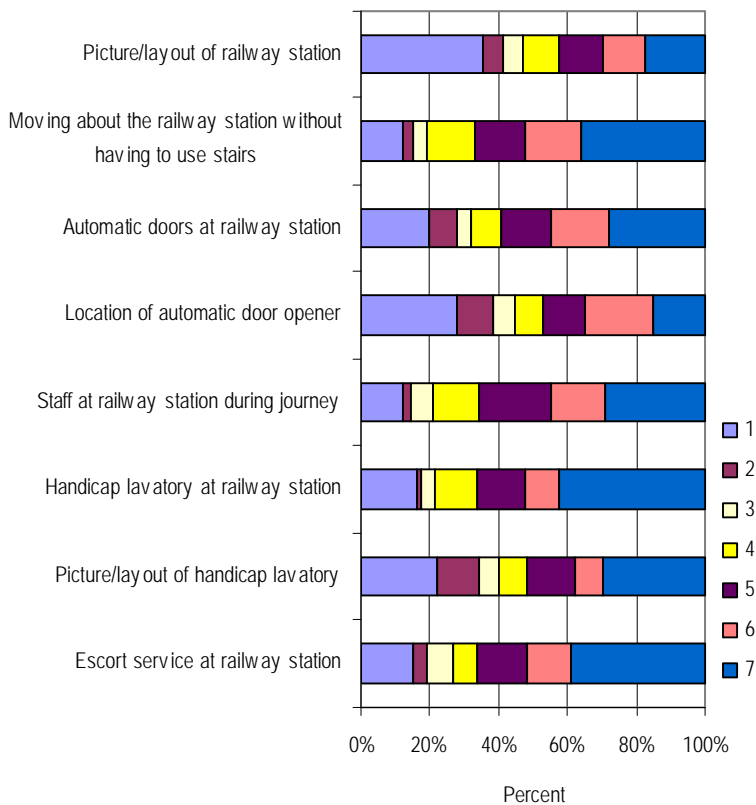


Figure 5.17 Distribution of grades assigned to a selection of questions about the railway station by respondents suffering from dizziness.

Knowing that there is a handicap lavatory at the bus terminal or railway station and having access to a picture or the layout of it when planning a journey also attracts a lot of interest among people suffering from dizziness as well as among the less frequent travellers in the sub-group.

Even though people suffering from dizziness use walking aids to a large extent, they are not as interested in the wheel chair lift and its capacity as the sub-group of the mobility impaired. Approximately 30% of the grades assigned to this question by people suffering from dizziness are at 6 or 7, but as can be seen in Figure 5.16, there are also a large number at 1. On the other hand people suffering from dizziness want to know how many steps they have to climb to embark a vehicle, and almost 60% of the

grades for this question are 6 or higher. Knowing about these things also interests less frequent travellers more than those who leave their home daily or several times a week. Those entitled to STS are also more interested in this kind of information.

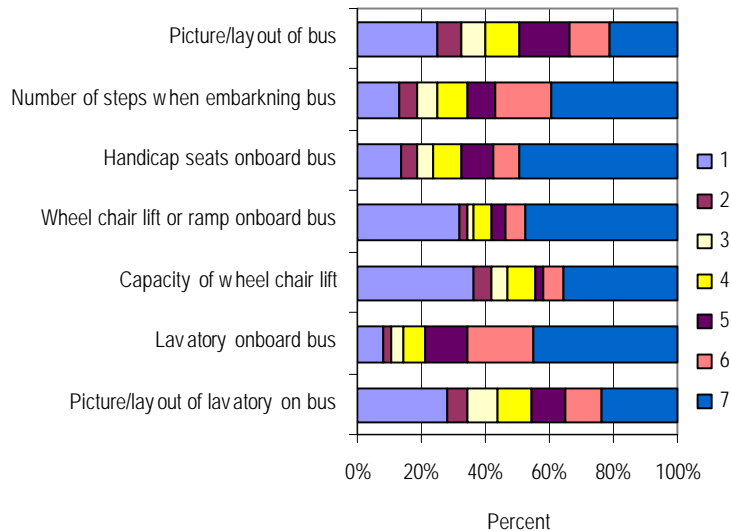


Figure 5.18 Distribution of grades assigned to a selection of questions about the bus by respondents suffering from dizziness.

There is also an interest in whether there are handicap seats onboard as well as in their appearance, i.e. in having a picture or the layout of the handicap seat when planning a journey. Travel information about handicap seats on the bus receives a mean of 5.2 whereas travel information about handicap seats on the train receives a mean of 5.1.

Access to a picture or the layout of the handicap seat on the train is assigned a mean of 4.6 by people suffering from dizziness. Having room for one's walking aid in the compartment by one's seat or by the handicap seat is also considered important information receiving means of 4.6 and 4.5 respectively. This knowledge is also more important for the older elderly and for less frequent travellers.

People suffering from dizziness find information about the layout of the bus or the train compartment important, but it is not assigned as many high grades as other kinds of information important to this sub-group

among the elderly and disabled. However, less frequent travellers find access to a picture or the layout of the bus or the train compartment they will be travelling in as important as the older elderly among people suffering from dizziness.

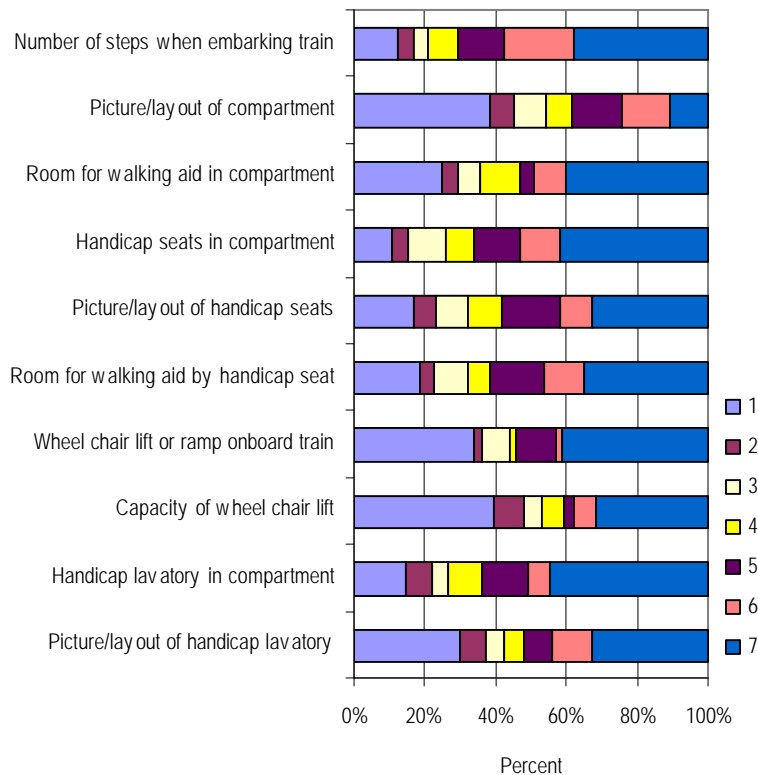


Figure 5.19 Distribution of grades assigned to a selection of questions about the train by respondents suffering from dizziness.

Summing up, it is possible to say about people suffering from dizziness that their need of pre-journey travel information is similar to that of the mobility impaired, but the results are not as unambiguous - there is a greater dispersion of grades for these questions among people suffering from dizziness.

The information people suffering from dizziness find important when planning a journey concerns the possibility to move about the bus terminal and railway station and also where there are automatic doors as well as where the openers are located. They also wish to know how many steps there are when embarking the vehicle they will be travelling on

and whether there is a wheel chair lift onboard. They also find it important to know whether there will be staff at the bus terminal and station during their journey.

5.3.3 Weakness and low stamina

Just like those suffering from dizziness, many of the elderly and disabled who state that they suffer from weakness or low stamina use walking aids. Approximately 60% of the respondents suffering from weakness or low stamina use some sort of walking aid, and this sub-group among the elderly and disabled can thus also be regarded as having the same handicap in the travel situation as people with mobility impairments. When The results scored for specific questions in this sub-group are examined it is, however, possible to say that there seems to be a larger diversity in the opinions of the respondents suffering from weakness or low stamina than among the mobility impaired and those suffering from dizziness.

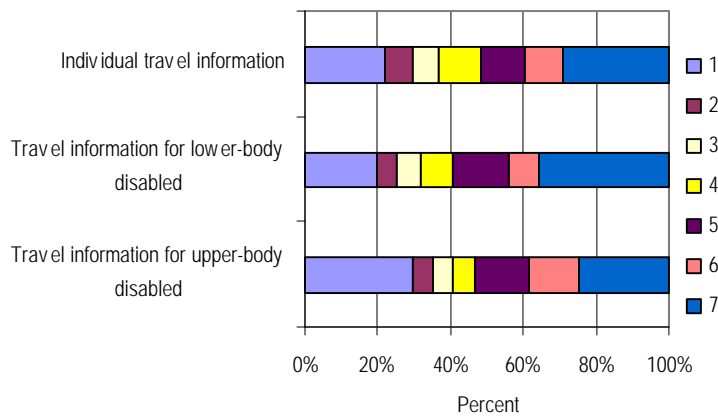


Figure 5.20 Distribution of grades assigned to a selection of questions about general travel information by respondents suffering from weakness or low stamina. .

People suffering from weakness and low stamina are less interested in travel information specially compiled for people with specific disabilities and individually compiled travel information than the mobility impaired or people suffering from dizziness. However, this does not mean that people suffering from weakness or low stamina do not find this information important; the means are well over 4 for all three questions. Travel

information for lower-body disabled has the highest proportion of grade 7 of the three questions – about 35%.

People suffering from weakness or low stamina find information about how to move about the bus terminal or railway station important. Over 40% of the total number of grades assigned by people suffering from weakness or low stamina to this kind of travel information were grades 6 or 7, and the means are 4.7 and 4.5 for the bus terminal and the railway station respectively. This knowledge is also more important for those people who suffer from dizziness and who also travel less frequently.

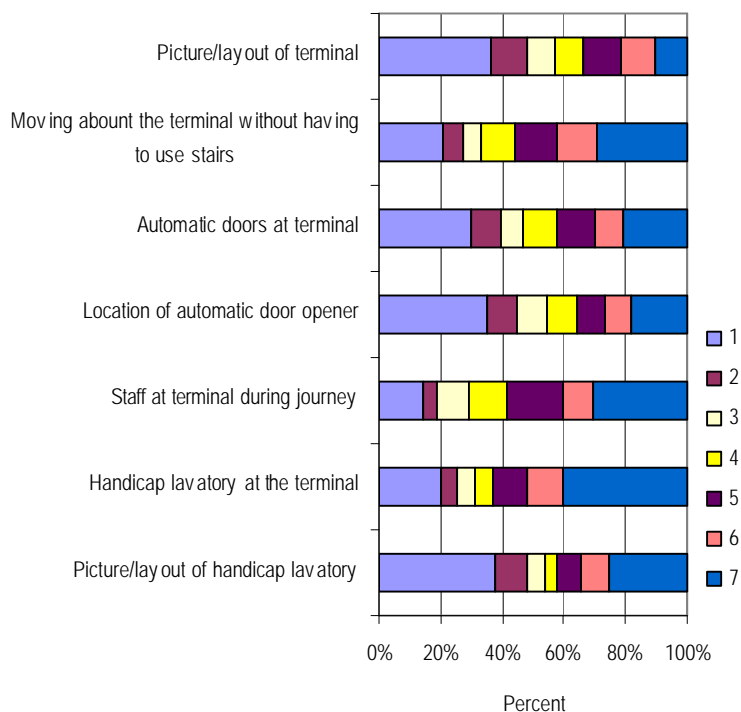


Figure 5.21 Distribution of grades assigned to a selection of questions about the bus terminal by respondents suffering from weakness or low stamina.

There is also an interest in knowing that there will be a handicap lavatory at the bus terminal or railway station but the need for access to a picture or the layout of the handicap lavatory does not seem to be equally great. The means are 4.8 and 3.6 for the handicap lavatory and for the picture/layout of it respectively, i.e. both are regarded as important travel information,

but not to the same extent. These questions are more important for those who travel less frequently as well as for the older elderly, i.e. over 75.

The question about automatic doors at the terminal is assigned grade 1 by more respondents in this sub-group than grades 6 and 7 together. The mean is still over 4 for the sub-group of people suffering from weakness or low stamina, but there is a diversity of opinions in the group. In comparison, the location of the automatic door opener is not as important; only about 25% of the grades assigned to it are 6 or higher. Less frequent travellers as well as those entitled to STS find this travel information more important than frequent travellers and those not entitled to STS among the respondents suffering from weakness or low stamina.

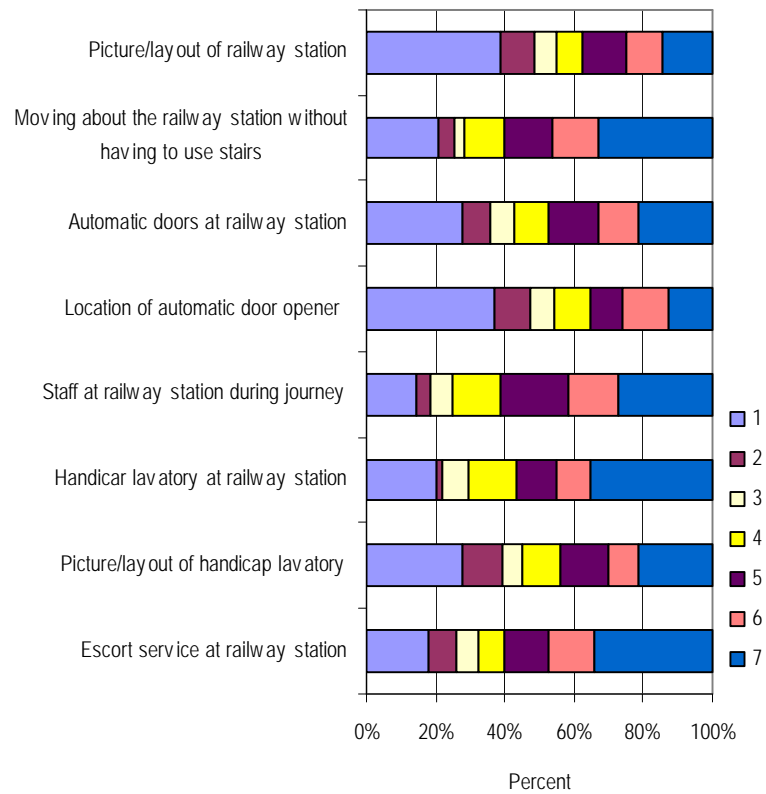


Figure 5.22 Distribution of grades assigned to a selection of questions about the railway station by respondents suffering from weakness or low stamina.

As for having access to a picture or the layout of the bus terminal or railway station, people suffering from weakness or low stamina think it is important information, assigning means over 3 to both questions, but there are also many people who have given this kind of information a grade of 3 or lower.

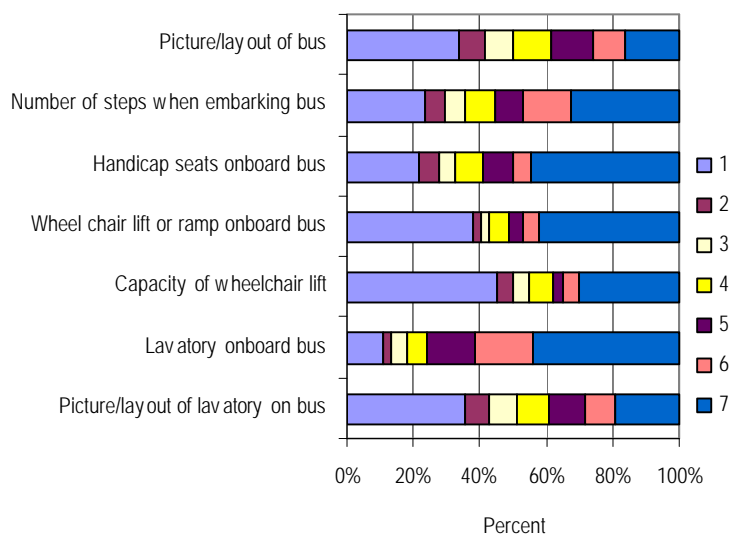


Figure 5.23 Distribution of grades assigned to a selection of about the bus by respondents suffering from weakness or low stamina.

These respondents also find information about staff at the bus terminal or bus station during their journey important. 40% of the respondents suffering from weakness or low stamina grade it as 6 or higher, and the means are 4.7 for both the bus terminal and the railway station. This sub-group also express an interest in information about an escort service at the railway station. Almost 50% of the grades assigned to this particular type of travel information are 6 or higher. The mean for this question is also 4.7. This knowledge is more important for those who travel less frequently and for the older elderly among the sub-group of people suffering from weakness or low stamina.

Even though respondents suffering from weakness or low stamina do not use walking aids to the same extent as the mobility impaired or people suffering from dizziness, information about wheel chair lifts onboard the vehicles and their capacity stands out as important (with a mean over 3) for this sub-group. Over 40% of the grades for the question about a wheel

chair lift on the bus are 7, and the percentage is almost as high for the same information about the train. At the same time these two questions are also assigned quite a large number of grade 1, or approximately 40%.

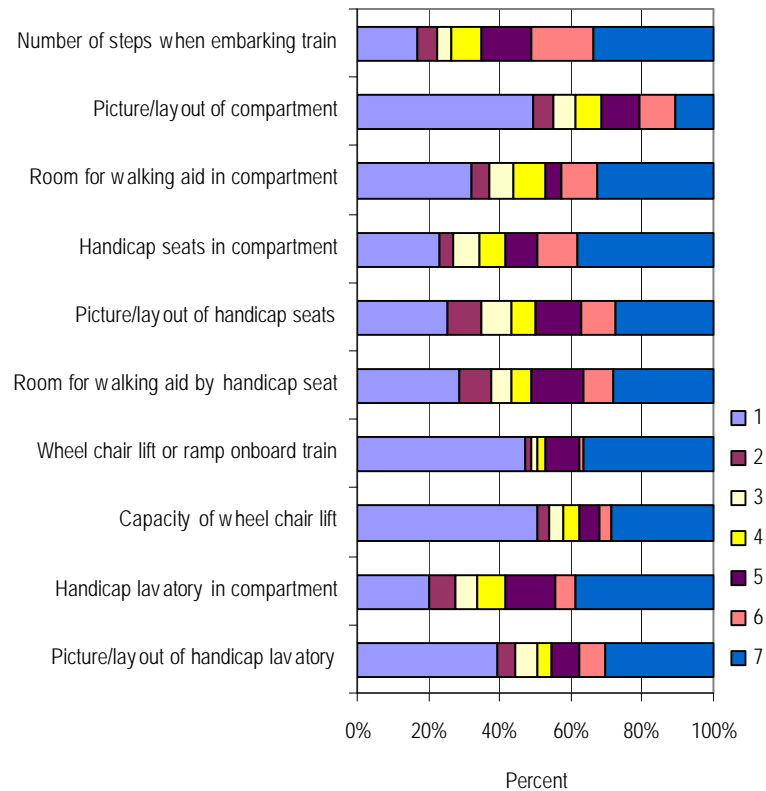


Figure 5.24 Distribution of grades assigned to a selection of questions about the train by respondents suffering from weakness or low stamina.

People suffering from weakness or low stamina do, however, want to know how many steps they have to climb to embark a vehicle; around 50% of the grades assigned to this question are 6 or higher. The means are 4.5 and 4.9 for the bus and the train respectively. This question also receives a significantly higher mean among those who travel less frequently and from those entitled to STS.

People suffering from weakness or low stamina also have an interest in handicap seats onboard the vehicles and their appearance, i.e. in having

access to a layout of the handicap seats available during a journey. Information about handicap seats on the bus is assigned mean of 4.7, whereas travel information about handicap seats on the train receives a mean of 4.6. The picture or layout of handicap seats on the train is assigned a mean of 4.1 by those suffering from weakness or low stamina.

Having room for one's walking aid in the compartment by one's seat or handicap seat is also considered important information, and both questions receive a mean of 4.1. This planning information is also more important for the older elderly than for the younger group of elderly, i.e. people aged 65-74.

In many respects people suffering from weakness or low stamina have similar needs for pre-journey travel information as the mobility impaired and people suffering from dizziness. However, the grades they assign to the various questions are more widely dispersed along the 1-7 scale. The information that they considered important in planning a journey concerns the possibility to move about the bus terminal and railway station and also where there are automatic doors as well as where the openers are located. They also find it important to know that there will be staff at the bus terminal and station during their journey. Knowing how many steps they will have to climb when embarking the vehicle and whether there is a wheel chair lift onboard is also considered important pre-journey information by people suffering from weakness or low stamina.

5.3.4 Speech impairments

People with speech impairments may not be equally handicapped in travelling by their disability as some of the other sub-groups, but there may well be a problem communicating with the staff at the bus terminal and the railway station as well as onboard the bus and the train.

Interest in individually compiled travel information among people with speech impairments is rather high – 40% of the grades assigned to this question are 6 or higher. The mean for this question is 5.4 among the people with speech impairments.

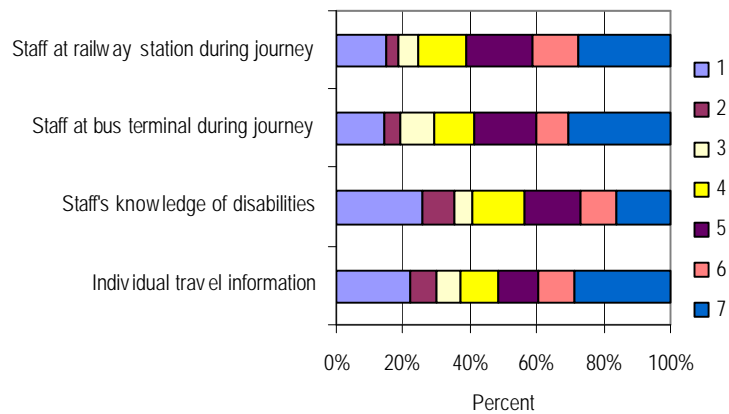


Figure 5.25 Distribution of grades assigned to a selection of questions about general travel information, the bus terminal and the railway station by respondents suffering from speech impairments.

Information about there being staff at the bus terminal and the railway station during the journey that is being planned is considered important by the respondents with speech impairments. 40% of the grades are 6 or 7, and the means are 5.1 and 5.6 for the bus terminal and for the railway station respectively.

The staff's knowledge of different disabilities and how these should be dealt with has a mean of 4.4 among people with speech impairments. There are, however, quite a few people with speech impairments who have graded this kind of information as 1, i.e. they do not find it important at all when planning a journey by train and by bus. Those of the speech

impaired who travel less frequently are more interested in all these questions.

In conclusion it is possible to say that people with speech impairments find it important to know whether there will be staff at the bus terminal or railway station during their journey. They also wish to be assured of the staff's knowledge of disabilities and diseases. There is also an interest in travel information which takes their individual requirements into account when travelling by public transport.

5.3.5 Hearing impairments

The hearing impaired prefer to have access to travel information which is compiled for them on an aggregated level rather than having individually compiled travel information, even though both questions receive means well over 3. About twice as many respondents give travel information specially compiled for the hearing impaired a grade 6 or 7 compared to having access to individually compiled travel information (see Figure 5.25). There are also quite a large number of hearing impaired people who grade individually compiled travel information at 1. The means are 5.8 and 4.1 for travel information for all hearing impaired travellers and for individually compiled travel information respectively.

It is as important for the hearing impaired as it is for the visually impaired to know how to receive information at the bus terminal or railway station about a delay or how to get this information when onboard. For many hearing impaired passengers the audio channel is not an option with regard to receiving information. Knowing that you will get the information you need during your journey is considered important, receiving means of 4.8 and 4.5 for information about delays during the journey and onboard respectively.

Knowing that there will be staff at the bus terminal or railway station during the journey is important pre-journey travel information for the hearing impaired. Approximately 50% of these respondents give this kind of travel information a grade 6 or 7. This is also more important for the older elderly, i.e. people over 75.

Compared to other kinds of travel information which could be considered interesting for the hearing impaired, travel information about an escort service at the railway station does not attract as much attention. It is assigned a mean of 3.9 even though only about 20% give this information

a grade 6 or higher. This knowledge is, however, more important for those who travel less frequently as well as for those entitled to STS.

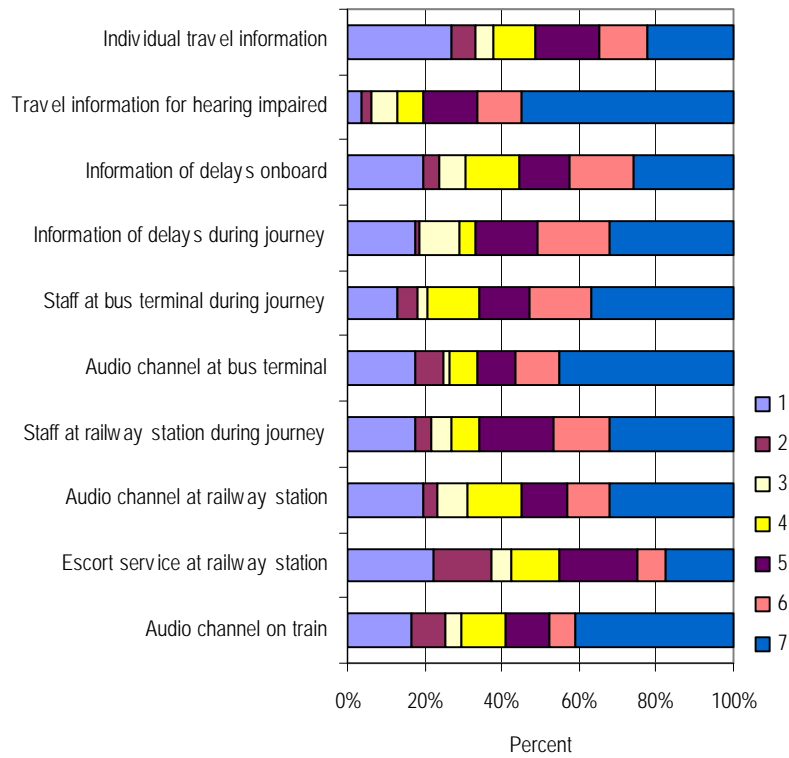


Figure 5.26 Distribution of grades assigned to a selection of questions about general travel information, the bus terminal, the railway station, the bus and the train by hearing impaired respondents.

Knowing that there is an audio channel at the bus terminal or railway station or in the vehicles is of course important for many hearing impaired people. All three questions about access to an audio channel in the buildings or in the train are grades as 6 and 7 by around 40% of the hearing impaired. It is, however, interesting to note that quite a few of them are not interested in an audio channel at all; around 10% for each of the questions are grade 1. This difference is naturally due to the kind of hearing impairment one suffers from as well on the hearing aid that one might be using. Access to an audio channel in the bus terminal, at the

railway station or onboard the train is also more important for the older elderly than for the younger elderly, i.e. for people between 65-75.

In conclusion, hearing impaired people wish to know whether there will be an audio channel or other similar device at the bus terminal or railway station as well as whether there is one in the train. Knowing about how they will get information during the journey and onboard is important pre-journey travel information for the hearing impaired. This also applies to knowing whether there will be staff at the bus terminal or railway station during the journey that is being planned. Hearing impaired people prefer to have information specially compiled for them as a group to having individually compiled travel information, even though this is also regarded as an interesting alternative.

5.3.6 Visual impairments

The visually impaired are more interested in travel information compiled specially for them as a group than in travel information compiled on an individual basis, i.e. where the individual impairment is taken into account. Over 60% of the visually impaired give travel information specially compiled for them a grade 6 or 7 (see Figure 5.26).

There seem to be different opinions among the visually impaired about whether it is necessary to have access to a picture or the layout of the bus terminal or railway station. The visual impairment prevents many of them from benefiting from a picture or the layout; but what if this layout could be produced by a printer designed for printing material for the visually impaired, i.e. print a form of disposable tactile map? Tactile maps and grooved walkways should also be interesting for many of the visually impaired who are accustomed to using these aids.

Around 30% give this kind of travel information a grade 6 or 7, but there are also about as many visually impaired people who give it a grade 1. This is probably due to the fact that not all visually impaired people are familiar with these kinds of aids. With regard to using different kinds of aids available for visually impaired, there is a difference between those who have been impaired since birth or childhood and, for example, elderly people who have become impaired in old age.

The bus terminal or the railway station can be a very confusing place for a visually impaired person. The noises there are not so familiar, and the layout is not always interpretable which means that there are no “natural” points of reference to orientate yourself by. Usually there are also great many people moving around the terminal or railway station close to

departure times. In this light the considerable interest in an escort service at the railway station expressed by the visually impaired is not surprising; over 40% grade this information as 7, and the mean is as high as 4.8. This knowledge is also considered more important by the older elderly, the less frequent travellers and those entitled to STS, who all assign higher means to this question than their dichotomous counterparts.

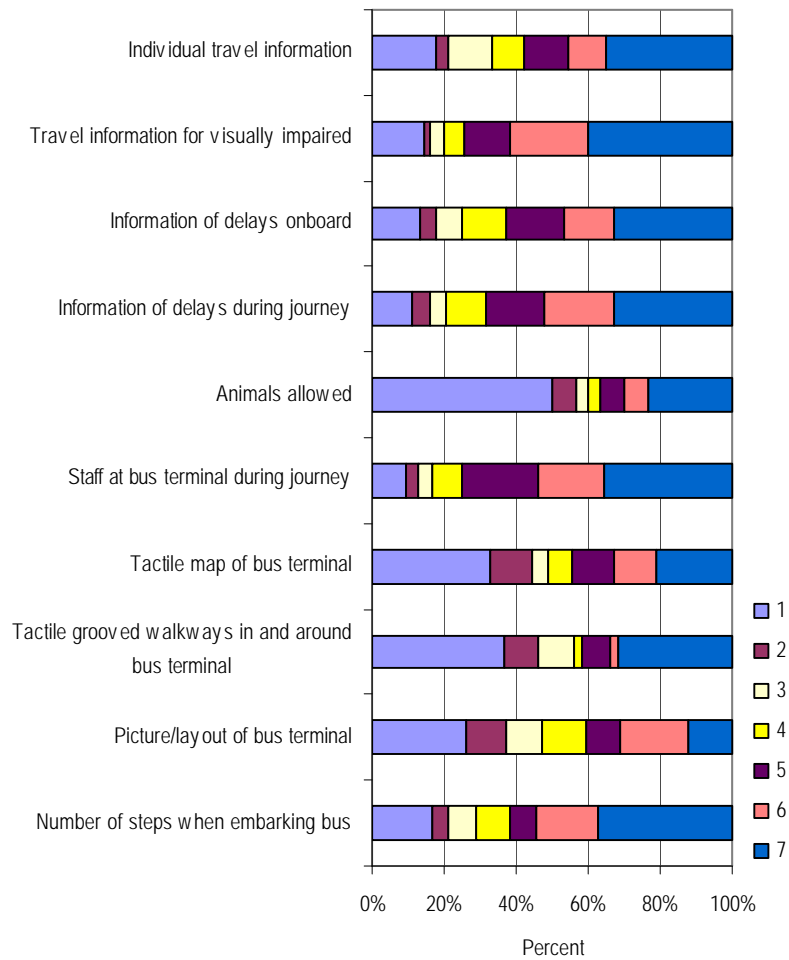


Figure 5.27 Distribution of grades assigned to a selection of questions about general travel information, the bus terminal, the railway station, the bus and the train by visually impaired respondents.

Knowing that there will be staff at the bus terminal or railway station during the journey that they are planning is also considered important travel information by the visually impaired; approximately 50% grade this travel information as 6 or higher.

How to receive information about a delay in one's journey at the bus terminal or railway station and how to get this information onboard the vehicle is important for the visually impaired. It is essential for them to know if the information is given on visual displays only or also as audio messages.

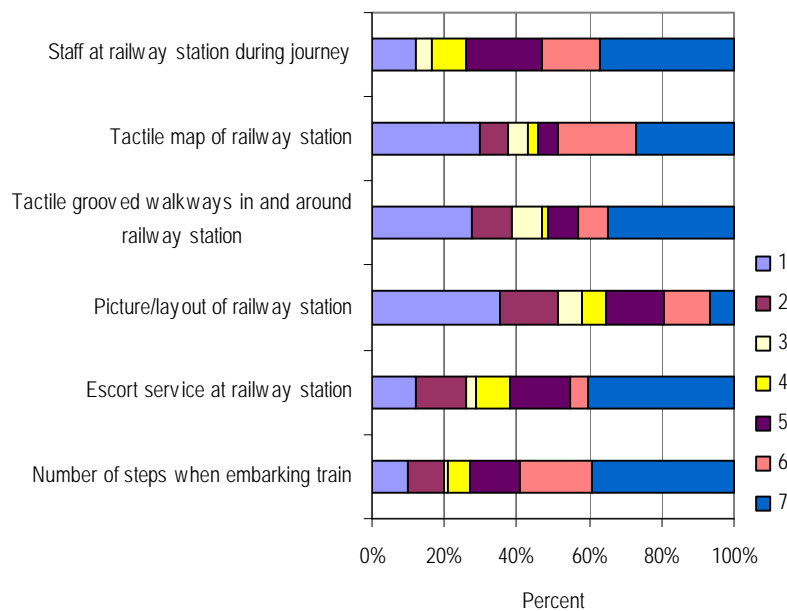


Figure 5.28 Distribution of grades assigned to a selection of questions about general travel information, the bus terminal, the railway station, the bus and the train by visually impaired respondents.

Approximately 50% of the visually impaired among the elderly and disabled give this kind of information a grade 6 or 7. The means are 4.9 for information about delays given at the bus terminal or railway station and 5 for of information delays given onboard the train or bus, which shows that this is indeed important travel information for the visually impaired among the elderly and disabled in this study.

The visually impaired require information about tactile maps and grooved walkways in and around the bus terminal and railway station. They also wish to know how they will get information about delays and other matters during the journey and when onboard. Access to information specially compiled for visually impaired people is important as is the possibility to have individually compiled travel information. Knowing whether there will be staff at the bus terminal or railway station during the journey is also considered to be important information.

5.3.7 Comparison of the information needs of different sub-groups

In order to get a comprehensive picture of what kind of travel information the different sub-groups are looking for, the results from Chapter 5.3 are examined here. They are presented in matrices with the travel information in question on the y axis and the sub-groups on the x axis. Travel information which is important for a specific sub-group, i.e. travel information assigned a mean over 3, is marked with an x at the intersection between the two.

General travel information

The questions about general travel information which are important among the sub-groups concern access to information before as well as during the journey. The questions about how to get information during the journey are of interest to the hearing impaired and to the visually impaired. Both groups have impairments which exclude them from some of the ordinary channels of information during a journey. Since they must ensure how they can access information during the journey, this becomes important planning information.

With regard to how the different sub-groups wish to access information, it is clear that they all have an interest in having access to travel information compiled according to their own individual needs when travelling by bus or by train. However, there is also an interest in having access to information which concerns the needs of specific sub-groups, i.e. travel information which has been compiled according to the general needs of the hearing impaired during a journey, for example.

There are similarities between mobility impaired respondents, those suffering from dizziness and those suffering from weakness or low stamina. These three sub-groups express the same requirements for travel

information, which is probably because they experience the same kind of handicaps in the public transport environment.

The hearing impaired and the visually impaired also display similarities, but even though they find the same kind of travel information important, their needs are not the same since their impairments result in different aspects of travel information. One example of this would be the question about how to get information onboard – the hearing impaired would probably rely on written information while the visually impaired would need audio information.

	Mobility impairments	Dizziness	Weakness, low stamina	Speech impairments	Hearing impairments	Visual impairments
Animals onboard						X
How to get information of delays during journey					X	X
How to get information of delays onboard					X	X
Individual travel information	X	X	X	X	X	X
Travel information for lower-body disabled	X	X	X			
Travel information for upper-body disabled	X	X	X			
Travel information for visually impaired						X
Travel information for hearing impaired				X		

Figure 5.29 Matrix of sub-group interest in general travel information.

The bus terminal and the railway station

The questions about the bus terminal and the railway station which turn out to be important for different sub-groups concern both access to audio/visual information and the possibility of mobility. Access to audio/visual information primarily concerns the hearing impaired and the visually impaired, as both groups may need special devices to be able to access information at the bus terminal or railway station. The hearing impaired, for example may not be able to use their hearing aids without there being an audio channel in the building.

All the sub-groups are interested in knowing whether there will be staff at the station during their journey, which could also be a way of ensuring that they can satisfy their need for information. This could, of course, also be an expression of insecurity and anxiety before the journey; making sure there will be staff at the bus terminal or railway station during the journey could be way of reducing these feelings.

	Mobility impairments	Dizziness	Weakness, low stamina	Speech impairments	Hearing impairments	Visual impairments
Handicap parking at bus terminal/railway station	x					
Picture layout of bus terminal/railway station	x	x	x			x
Moving about the bus terminal/railway station without having to use stairs	x	x	x			
Automatic doors at bus terminal	x	x	x			
Location of automatic door opener	x	x	x			
Staff at bus terminal/railway station during journey	x	x	x	x	x	x
Handicap lavatory at bus terminal/railway station	x	x	x			
Picture/layout of handicap lavatory	x	x	x			
Escort service at railway station	x	x	x		x	x
Audio channel at bus terminal/railway station					x	
Tactile map of bus terminal/railway station						x
Tactile grooved walkways in and around bus terminal/railway station						x

Figure 5.30 Matrix of sub-group interest in travel information about the bus terminal and the railway station.

The need for information about mobility at the bus terminal or railway station is primarily of interest to the mobility impaired and to people suffering from dizziness and weakness. These sub-groups find nearly all the questions about mobility at the bus terminal or railway station important, which again confirm that these three groups do experience similar handicaps in the public transport environment.

Again, the mobility impaired and the people suffering from dizziness or weakness are interested in knowing whether there is an escort service at the bus terminal or railway station. This is also important planning information for the hearing impaired and for the visually impaired. Thus,

there seems to be an interest in having access to individual help at the bus terminal and railway station within all the sub-groups except for that of the speech impaired.

The bus and the train

	Mobility impairments	Dizziness	Weakness, low stamina	Speech impairments	Hearing impairments	Visual impairments
Picture/layout of bus/compartments	x	x	x			x
Number of steps when embarking bus or train	x	x	x			x
Room for walking aid in train compartment	x	x	x			
Handicap- seats onboard bus or train	x	x	x			
Picture/layout of handicap seats onboard bus or train	x	x	x			
Room for walking aid in train compartment	x	x	x			
Wheel chair lift or ramp onboard bus or train	x	x	x			
Capacity of wheel chair lift	x	x	x			
Lavatory onboard bus	x	x	x			
Picture/layout of lavatory on bus	x	x	x			
Handicap lavatory in train compartment	x	x	x			
Picture/layout of handicap lavatory	x	x	x			

Figure 5.31 Matrix of sub-group interest in travel information about the bus terminal and the railway station.

As far as the questions about the bus and the train are concerned there is once again a strong similarity between the sub-groups of the mobility impaired and people suffering from dizziness or weakness. These three groups express similar requests for travel information about the train and the bus, and all their questions regard mobility in some way.

The visually impaired are also interested in having access to a picture or the layout of the bus or train compartment and in knowing how many steps there will be when embarking the vehicle.

In conclusion it can be established that there is indeed a greater need for travel information among the elderly and disabled when the needs of the sub-groups are taken into account. The greatest need for travel information among the sub-groups concerns issues of mobility as well as information specific to the hearing impaired and visually impaired. As there were quite a few questions regarding mobility in the questionnaire and not so many about the travel situation for the hearing impaired and the visually impaired, it might be necessary to look into the need for travel information among the latter two groups a bit further. This is especially important when the great interest among these groups in travel information concerning their needs is regarded – everything turned out to be important, and there may thus be more to the picture than what has been shown here.

The need for travel information expressed by the sub-groups also shows that the three main sub-groups in the focus-group analysis, i.e. the mobility impaired, the hearing impaired and the visually impaired could also have been used to explore the travel information requirements of these sub-groups.

5.4 The impact of the extent of disability on the need for information

The results so far show that elderly and disabled people need more travel information than what is being offered today, both on an aggregated level and among sub-groups. Could it be that the need for travel information increases as the impairment progresses? This question will be explored in this chapter, i.e. is the need for travel information influenced by the degree of handicap in the public transport environment?

As seen in the previous chapters about the need for travel information expressed by the sub-groups, the mobility impaired respondents and those suffering from dizziness and weakness all have similar needs. This is also evident when the rank correlation figures are studied which is why these three sub-groups will be discussed together under the designation “mobility handicaps”, as this is what they experience in the public transport environment.

In order to be considered as a need that increases as the handicap progresses, the rank correlation coefficient (r) must exceed a minimum value of -0.3 .

Because of their size, **Figures 5.32–5. 41 are displayed in Appendix IV.**

5.4.1 Mobility handicaps

Mobility impairments result in mobility handicaps, as do dizziness and weakness or low stamina, especially if one has to use a walking aid to be able to move about. These three groups thus have similar needs for travel information. This is also indicated by the results from the factor analysis as well as the results for the sub-groups, which implies that the mobility impaired and people suffering from dizziness or weakness could be regarded as one sub-group.

When the results from the rank correlation are compared for these three sub-groups, it is once again confirmed that these three groups have similar difficulties in the public transport environment. The results are not identical, but follow the same pattern for all three groups (see for example Figure 5.31). These three sub-groups can thus be regarded as one in exploring if the need for travel information increases as the handicap progresses – even though the results differ somewhat, they are in fact very similar.

In the area of general travel information there are not many questions for which the need for travel information increases as the mobility handicap progresses. However, interest in specially compiled travel information for people with a lower-body disability does increase – this is especially true about people with mobility impairments (see Figure 5.31). The interest in travel information compiled for the upper-body disabled also increases with a more severe handicap. The need for individually compiled travel information also increases as the handicap in the public transport environment progresses.

Knowing whether or not the staff of terminals and stations as well as onboard are familiar with common disabilities and know how these should be treated increases in importance for the mobility impaired but does not quite reach the limit of -0.3 for the other two sub-groups among the mobility handicapped. The similarity between the groups is, however, obvious when the figures are compared.

With regard to the bus terminal and the railway station the similarities among the three groups becomes even more obvious (see Figure 5.32). The need for travel information increases more among the mobility impaired, as their disability makes their condition deteriorate more than that of people suffering from dizziness and weakness or low stamina. This could be due to the fact that mobility impaired people use walking aids to a greater extent than the other two sub-groups – for example as regards to the question about how to move about the station without having to use stairs and the need for a picture or the layout of the railway station.

The need for a picture or the layout of the bus terminal does not increase with a progressing disability. This might be because people are not so used to large terminals since there are only a few of them in Sweden.

Other kinds of travel information which become more important as the mobility handicap progresses are information about which doors can be opened automatically and information about the location of the opener. Information about whether there is a handicap lavatory at the bus terminal or railway station also increases in importance, as does information about the possibility of having access to a picture or the layout of the handicap lavatory.

The mobility handicapped also experience greater need for staff at the bus terminal or railway station during their journey as their condition deteriorates. This increase in importance also applies to the possibility of having access to an escort service at the railway station.

There is a substantial increase in the need for information about the availability of a wheel chair lift onboard the bus and the train as the mobility impairments progresses (see Figures 5.30 and 5.33). This need also increases when the dizziness or weakness or low stamina becomes more severe, which also applies to the information about the number of steps one has to climb to embark the bus or the train.

The need for a handicap seat also increases with a more severe disability, which can be observed in the high value of r for information about a handicap seat onboard the bus and the train. The possibility of having access to a picture or the layout of the handicap seat in the train when planning a journey also becomes more interesting, as does information about being able to keep one's walking aid by the handicap seat during the journey. For people who travel in an ordinary seat, information about whether there is room for their walking aid in the compartment increases with a more severe disability.

Information about whether there is a lavatory onboard the bus does not increase in importance as the disability makes the individual's condition deteriorate. However, the need for a picture or the layout of the lavatory in the bus does increase. This also applies to the train, where the need for a handicap lavatory increases as the disability progresses worse, as does the need for a picture or the layout of the handicap lavatory.

The results from the rank correlations confirm the similarities between the mobility impaired and people suffering from dizziness or weakness. They also show that it is usually the information which is regarded as important by different sub-groups that increases in importance as the disability in the public transport environment becomes progresses.

5.4.2 Visual, hearing and speech impairments

When the rank correlations for the sub-groups of the visually, hearing and speech impaired are reviewed, it is possible to see that for these groups as well there is travel information which increases in importance as the impairment progresses. However, there is no indication that these three could be regarded as one group.

The travel information which does increase in need is also of a kind that is already very specific for the sub-group in question. This can be observed among the hearing impaired, for example, for whom the need to know that there will be an audio channel at the bus terminal or railway station

increases with a more severe impairment. The need for specially compiled travel information among the hearing impaired also increases in importance. For the visually impaired, the need for specific information like tactile maps and grooved walkways also increases with a more severe impairment. Knowing how to get information when onboard or at the bus terminal or railway station also becomes more important. However, there is no kind of travel information in this study which increases in importance as a speech impairment progresses.

To sum up, it is possible to conclude that there are very few similarities between these three groups and that there is probably more to the travel information needs of the hearing impaired and the visually impaired than what has been shown in this study.

6 Results and conclusions

This study had two purposes: the overall purpose was to explore elderly and disabled people's need for pre-journey travel information both on an aggregated level and among different sub-groups. A second purpose was to discuss whether travel information could improve the accessibility of the public transport system.

The first part of this final chapter includes an analysis of the travel information requirements of elderly and disabled people as well as some conclusions drawn on the basis of the results of this study. The second part consists of reflections and comments on the potential of travel information to improve the accessibility of public transport. The last part contains suggestions for further research in this area.

6.1 Analysis and conclusions

The results on an aggregated level, i.e. for the whole collective, show that elderly and disabled people regard information about prices and bookings as important general travel information. This is of course the kind of information without which it would be difficult, if not impossible, to plan a journey at all, regardless of one's ability to handle the physical environment. Thus it is not surprising that this kind of information turns out to be important for this group of travellers.

What is interesting is that elderly and disabled people also consider information about practical matters during the journey as important as more general travel information. Hence an elderly or disabled person also wishes to have access to information about, for example, which platform

to go to and where on the platform to stand in order to embark the vehicle. The concept of general travel information thus covers a broader perspective when the needs of elderly and disabled people are taken into account. The reason for this could be that elderly and disabled people use travel information of this kind to compensate for their lower mobility in the public transport environment. If one is not able to move as quickly as other passengers, it might be difficult, for example, to have time to embark the vehicle if one is not standing in the right place when the vehicle pulls up. The time factor thus seems to be playing a part here, as many elderly and disabled people do not move so fast and are afraid to miss their connection or not have enough time to get on or off the train or bus.

When the results for the bus terminal and railway station on an aggregated level are reviewed, it is possible to see that the need for information is somewhat different – the focus has changed over to how the elderly or disabled person will be able to access the bus terminal or railway station. The same thing seems to apply to the bus and the train, where information about how to get on the bus or train generally receives high means whereas once onboard the bus or train the need for information is not as great – except for the need to know that there will be a lavatory/handicap lavatory onboard.

The results from the sub-groups among the elderly and disabled show that there are indeed groups among them who have more specific needs for travel information. These groups are the mobility handicapped, which includes the mobility impaired and those suffering from dizziness or weakness, the hearing impaired and the visually impaired. These three general sub-groups were also identified in the factor analysis as well as the rank correlation. The mobility impaired and people suffering from dizziness or weakness all have a similar need for information and can thus be treated as one group when studying their need for travel information. The speech impaired, who also constituted a sub-group, did not have specific needs for information - at least not any needs revealed by the questions in this study.

The need for travel information among the sub-groups primarily concerns mobility and access of audio/visual information. The mobility handicapped wish to have access to more detailed information about how to access the bus terminal and the railway station as well as the vehicles. There is also an interest in knowing what the vehicle looks like inside on a more general level as well as being familiar with the design of the handicap seat and its surroundings. As many mobility handicapped people use some

form of walking aid, knowing where this aid can be stored during the journey is also important information.

The requests for detailed information expressed by the mobility handicapped indicates that there is an actual need for this technical information in order to be able to travel at all. Thus this sub-group shows an additional need for travel information compared to the information needs of all elderly and disabled people. However, the mobility handicapped are also interested in “soft” factors such as staff at the station during their journey, which creates a feeling of safety and security during the journey even though this knowledge per se does not facilitate it.

The hearing impaired and visually impaired are primarily interested in travel information which takes their specific needs into account. They are also interested in knowing how they will be able to access travel information during the journey, i.e. whether information during the journey is given in both audio and visual form. As there is a great interest in all kinds of travel information which takes the specific needs of these groups into account, it is necessary to reflect on whether this study covers all the aspects of travel information needed by these two sub-groups when they travel by train or by bus.

The results for the sub-groups show that there is indeed a greater need for travel information among the sub-groups of the elderly and disabled. The need for travel information varies when different sub-groups are compared depending on their ability to handle the public transport environment. There are also indications of certain kinds of travel information becoming more important with an increasingly severe impairment, which especially applies to travel information that is important for sub-groups among the elderly and disabled people. This is probably due to the fact that in the travel situation the handicap becomes more severe as the impairment progresses. The need for travel information as well as for more detailed travel information thus becomes more prominent.

These also seems to be a greater need to plan the journey among the sub-groups than among all elderly and disabled people. The need for more travel information as well as more detailed travel information among the sub-groups is probably due to the journey consisting of more segments than normal. Each segment requires knowledge of the characteristics of this particular segment in order for a disabled person to be able to handle the situation, and, as we all know, a chain is only as strong as its weakest link. If a person is not able to handle one of the segments, for example getting to the platform, the journey cannot take place.

The travel information requirements among the elderly and disabled on an aggregated level as well as among the sub-groups indicate that travel information may to some extent be used as a way to reduce insecurity and anxiety before the journey. This is in line with a study recently carried out in Finland (Liikenneministeriö 2000) where it was shown that elderly and disabled people start to plan a journey by train or by bus far in advance in order to be sure that they will be able to cope with the journey. This study also pointed out a need among the elderly and disabled for travel information that is not currently offered. The results also confirm the results from a study on disabled people's need for travel information carried out in Sweden (Brundell-Freij and Ståhl 1994). This study pointed out several of the aspects of the need for travel information among disabled people which have been confirmed in the present study.

Thus it is safe to say that the results show that elderly and disabled people require more travel information than what is offered today when they are planning a journey by train or by bus. However, the need for information varies depending on which of the elderly and disabled are studied. Some travel information is important for all elderly and disabled people, e.g. which platform to go to and where to stand on the platform, whereas other kinds of travel information are important to a minor group only. The travel information need within these sub-groups is also more specific for the impairment in question as well as for the disability which it results in when travelling with public transport.

One general conclusion regarding the travel information requirements of elderly and disabled people is thus that the need for information varies within the group of the elderly and disabled depending on what perspective is adopted. There is travel information which is necessary for all travellers regardless of their physical capacity, including elderly and disabled people, whereas other travel information is primarily of interest to relatively broad categories of the disabled. Finally there is travel information that is only important to a very specific group of the disabled, for example the blind. The need for absolute travel information also increases the more specific the group is.

It is only the intended use of the information that changes; i.e. the broader the category of elderly and disabled people, the more general the need for travel information and it is consequently used more for comfort and security than as an absolute prerequisite for making the journey at all. However, both kinds of information are crucial for the elderly or disabled people's journeys.

6.2 Discussion

The necessity of travel information in public transport on a general level was established at the beginning of this study. There is a need for knowledge about the public transport system if safe and efficient travel is going to be possible. This knowledge is acquired through experience of travelling by public transport or through information.

The information which public transport authorities and companies offer their travellers today is not based on knowledge about their needs and preferences and certainly not on the needs and preferences of potential travellers. It covers essential matters, such as the price of the journey and timetables, which is indeed crucial knowledge if one wants to travel by public transport. There is, however, little if no travel information about the public transport system which takes other needs of travellers into account. The travel information offered today is thus based on public transport providers' beliefs about travellers' needs rather than on the actual needs of different groups of travellers. Elderly and disabled people constitute one such group.

As an individual grows older, there are changes in both physiological health and cognitive skills that may change the conditions for travel by public transport. These changes may, for example, result in the elderly person becoming impaired in some way, which in turn may result in a handicap in the travel situation. A mobility handicap, for example, often requires the use of a walking aid, which is troublesome when travelling with public transport as the environment is not always equipped for the convenience of people who use walking aids.

The journey thus becomes difficult and is also divided into more segments as the impairment causes handicaps in several different situations during the journey. Each segment of the journey thus becomes more prominent and also more laborious to handle.

In order for people to be able to continue to travel by public transport, both experience and information about the new situations must be updated. However, it is hardly possible to get experience without access to information about the "new" segments of the journey, whereas information can be acquired without actually using the public transport system. The question to be discussed in this chapter is thus whether travel information can be a contributing factor in making the public transport system more accessible.

The ecological theory of ageing presented in Chapter 3 of this study implies that information may be a way to strengthen covert competence, i.e. the total inner capacity of a person. If this can be done, overt competence, or the competence that a person can exercise in a given situation, may improve, which, in turn, could mean that a specific situation in the public transport system could be handled more easily.

In the scenario described above, where an ageing person in the public transport system was discussed, both the overt competence of that person and the environmental press exerted by the public transport system change as he or she grows older. The person's overt competence decreases and the environmental press increases, which means that the intersection between the two may thus occur outside the zone of the maximum performance potential (see Figure 3.2).

Is it possible to argue that travel information can improve a person's ability to handle the environmental press created by the public transport system? In other words, is it possible that the right kind of information may strengthen the covert competence and consequently improve the overt competence or the "output potential" of the individual? This could mean that the intersection between overt competence and environmental press would occur within the performance potential of the individual. In other words, can elderly and disabled people cope better in the public transport system if they have access to travel information which takes their needs into account?

This study does not provide an answer to these questions. However, the results do show that there is a need for more as well as for more detailed travel information among elderly and disabled people. The travel information currently offered about the public transport system is thus not sufficient for the needs of this group. The results also indicate that elderly and disabled people use travel information to make sure that they know what will happen during the journey, i.e. is to prepare themselves for situations they may encounter during the journey. Elderly and disabled people thus often use travel information to reduce their feelings of insecurity and anxiety before a journey.

This could be interpreted as an indication that travel information is used as a way of handling the environmental press created by the public transport system. Reducing one's feelings of insecurity and anxiety before a journey strengthens one's motivation to travel, which in turn may have an impact on covert competence. However, the ecological life-span model of ageing was used as a conceptual framework for this study, and since proving the

impact of travel information on covert competence in the travel situation was not the subject of this study, no conclusions can be drawn.

How, then, can the use of the results from this study be used? As pointed out in Chapter 6.1, the general conclusion of this study is that elderly and disabled people's pre-journey travel information requirements are not fulfilled today. Their needs range from general travel information important for the whole collective over to more detailed information important for a minor group among the elderly and disabled. The need for travel information is also more prominent among different sub-groups of the elderly and disabled.

In order to provide relevant travel information, it is thus necessary to look at sub-groups of the disabled rather than the journey itself. This was also confirmed by the factor analysis performed on the material. However, to obtain the detailed result desired in this study, it was necessary to pose all the 83 questions. If the 12 factors produced in the factor analysis had been used as questions, the result would have been a very general indication of what areas to focus on when producing travel information for elderly and disabled people. The issue of what *kind* of travel information they require would not have been elucidated. In order to obtain detailed information on what kind of travel information different sub-groups of disabled require when planning a journey by train and by bus, it is thus necessary to ask more detailed questions.

The results regarding the pre-journey travel information needs of the sub-groups are displayed in Figures 5.28-5.30. The columns in these figures show the need for travel information among different sub-groups, i.e. knowledge which is important to have access to in order to plan a journey if one is, for example, mobility impaired. Consequently these columns can give a public transport authority or company an idea of what kinds of travel information to provide when trying to live up to the information needs and expectations of travellers with specific disabilities.

The rows on the other hand show the sub-groups whose needs can be satisfied by providing a certain kind of travel information. When planning a travel information service, it is necessary to look at the needs for travel information in both ways, since it will almost certainly, in the beginning at least, be a question of prioritising among the kinds of information that can be provided and regularly updated. Priorities should then be based on columns and rows with many x's.

There is also travel information which turned out to be important for the whole collective of elderly and disabled people. This kind of information does not answer the needs of a specific group, but is rather a way of generally improving the standard of the travel information for this group.

However, there remains a lot to be done before elderly and disabled people have access to pre-journey travel information which satisfies their needs when planning a journey by train or by bus. This study has pointed out some of the pre-journey travel information requirements of this group, but a great deal remains to be done before a comprehensive travel information service can be provided. This particularly applies to the hearing impaired and visually impaired, whose needs were probably not sufficiently explored in this study.

6.3 Further research

The results from this study show what kinds of travel information elderly and disabled people require when planning a journey by train and by bus. However, there are indications that there may be more to this than what has been shown here, i.e. there are groups among the elderly and disabled whose needs for travel information have probably not been adequately covered in this study. The hearing impaired and the visually impaired are examples of such groups whose needs for travel information have to be further explored.

Since this study deals with pre-journey travel information, it does not cover elderly and disabled people's travel information requirements *during* the journey. This is also essential to explore in order to provide comprehensive travel information. Another aspect of the need for travel information during the journey is *when* this need for information occurs.

This study deals with long-distance journeys and consequently does not cover the aspects of travel information in local public transport, where the conditions are different. Since the pace is higher in local public transport, there is normally not much time to plan a journey. There are also more connections to be made when travelling by local public transport as well as fewer options if one needs assistance from staff during the journey. It would be interesting to explore these matters and compare the result with those of long-distance journeys, as a journey per se is a journey from door to door and could thus include both local and long-distance travel.

This could have implications for how travel information should be presented to the travellers, which is also an issue that needs to be explored. Providing a good travel information service presupposes a good understanding of *how* the information should be presented in order to be useful when journeys are planned.

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APPENDIXES

- Appendix I: All the questions included in the questionnaire study
- Appendix II: Layout of the questionnaire. Questionnaire A as a sample
- Appendix III: The factor analysis – complete structure of the factors
- Appendix IV: The rank correlation diagrams

APPENDIX I

All questions included
in the questionnaire study

General travel information

- GI 1 Information about different price alternatives for my journey
- GI 2 Information about whether I can choose my seat when I book my journey
- GI 3 Information about whether I can book a journey by train or bus without having to make any connections
- GI 4 Information about whether I can book a journey with shorter or longer time for changing at connections
- GI 5 Information about delays or other disturbances onboard the train or bus
- GI 6 Information during my journey about a late departure for my booked trip by train or bus
- GI 7 Information about connections at arrival
- GI 8 Information about where smoking is allowed onboard the train or bus
- GI 9 Information about whether I can bring my pet along during my journey (including a guide dog)
- GI 10 Information about which platform or bus stop my connecting train or bus will depart from
- GI 11 Information about how to get to the station or bus stop easily from my starting point (e.g. home)
- GI 12 Information about which platform or bus stop my train or bus will leave from at my departure
- GI 13 Information about where at the stop the bus will pull up so that I will know approximately where to get on or off the bus
- GI 14 Information about where at the platform my car will stop so that I will know where to get on or off the train
- GI 15 Information about which platform/bus stop the train or bus will pull up at on arrival
- GI 16 Information about which side of the train to disembark from on arrival
- GI 17 Information specially compiled for the hearing impaired
- GI 18 Information specially compiled for the visually impaired
- GI 19 Information specially compiled for the lower-body impaired
- GI 20 Information specially compiled for the upper-body impaired
- GI 21 Information specially compiled for me according to my specific needs during a journey
- GI 22 Information about whether staff on the train or bus know how common diseases an impairments manifest themselves and how to cope with them

The bus terminal

- BS 1 Information about whether there will be staff at the bus terminal to assist me during my journey
- BS 2 Information about where I can store my luggage at the bus terminal
- BS 3 Information about what service is available at the bus terminal (e.g. restaurant, café, lavatory)
- BS 4 Information about where the changing table is located at the bus terminal
- BS 5 Information about whether special food is available at the bus terminal (e.g. vegetarian or gluten-free food)
- BS 6 Information about where parking is available close to the bus terminal/bus stop

- BS 7 Information about where handicap parking is available close to the bus terminal/bus stop
- BS 8 Information about the possibilities of moving around at the bus terminal without having to climb steps or use ramps
- BS 9 Information about the bus terminal/bus stop in the form of a picture or the layout
- BS 10 Information about where there are automatic doors at the bus terminal
- BS 11 Information about the location of door openers in relation to automatic doors at the bus terminal
- BS 12 Information about the location of the handicap lavatory in the form of a picture or the layout (e.g. the width of the door)
- BS 14 Information about whether there is a tactile map of the bus terminal and, if so, where it is located in relation to the main entrance (a tactile map is a relief map)
- BS 15 Information about whether there are grooved walkways at the bus terminal and in its immediate vicinity (grooved walkways are grooves paths in the floor or in the ground)
- BS 16 Information about whether there is an audio channel at the bus terminal

The railway station

- RS 1 Information about whether there will be staff at the station to assist me during my journey
- RS 2 Information about where I can store my luggage at the station
- RS 3 Information about what service is available at the station during my journey (e.g. restaurant, café, lavatory)
- RS 4 Information about where the changing table is located at the station
- RS 5 Information about whether special food is available at the station (e.g. vegetarian or gluten-free food)
- RS 6 Information about where parking is available close to the station
- RS 7 Information about where handicap parking is available at the station
- RS 8 Information about the possibilities of moving about in the station area without having to use stairs or ramps
- RS 9 Information about the station in form of a picture or the layout
- RS 10 Information about the location of automatic doors at the station
- RS 11 Information about the location of the door openers in relation to automatic doors at the station
- RS 12 Information about the location of the handicap lavatory at the station
- RS 13 Information about the handicap lavatory at the station in form of a picture or the layout
- RS 14 Information about whether there is a tactile map at the station and, if so, where it is located
- RS 15 Information about whether grooved walkways are available at the station and in its vicinity (grooved walkways are grooves paths in the floor or in the ground)
- RS 16 Information about whether audio channels etc. are available at the station
- RS 17 Information about whether there is an escort service at the station (escort service means that assistance is offered at the station)

The bus

- B1 Information about special seats on the bus for passengers with allergies
- B 2 Information about whether there is a lavatory on the bus
- B 3 Information about the lavatory on the bus in the form of a picture or a layout
- B 4 Information about what service is available at the bus (e.g. food and drink, films)
- B 5 Information about whether there are special handicap seats with room for a walking aid or wheel chair and, if so, where they are located on the bus
- B 6 Information about the number of steps I have to climb to embark and disembark the bus and how high they are
- B 7 Information about whether there is a wheel chair lift or ramp on the bus
- B 8 Information about the capacity of the wheel chair lift on the bus
- B 9 Information about whether audio channels etc. are available on the bus
- B 10 Information about whether it is possible to buy my ticket onboard the bus
- B 11 Information about the interior of the bus in the form of a picture or the layout, where, for example, the width of the mid aisle is indicated

The train

- T 1 Information about whether there is a telephone on the train
- T 2 Information about where I can store my luggage on the train and what the storage facilities look like
- T 3 Information about whether there are special seats on the train for passengers with allergies
- T 4 Information about whether special food is available on the train (e.g. vegetarian or gluten-free food)
- T 5 Information about whether it is possible to buy my ticket on the train
- T 6 Information about where the changing table is located on the train
- T 7 Information about how many steps I have to climb to embark and disembark the train and how high they are
- T 8 Information about whether there is a wheel chair lift or ramp on the train
- T 9 Information about the capacity of the wheel chair lift
- T 10 Information about the interior of the compartment in the form of a picture or the layout
- T 11 Information about where there are handicap seats on the train
- T 12 Information about the handicap seats on the train in form of a picture or the layout indicating seat height and legroom
- T 13 Information about whether there is room for my walking aid by the handicap seats on the train
- T 14 Information about whether there is room for my walking aid by my seat in the compartment
- T 15 Information about whether there is a handicap lavatory on the train
- T 16 Information about the handicap lavatory in form of a picture or the layout
- T 17 Information about whether there is an audio channel etc. on the train

APPENDIX II

Layout of the questionnaire
Questionnaire A as a sample

FRÅGEFORMULÄR

Vilken betydelse har informationen för
äldres och funktionshindrades resor med
tåg och buss?

Undersökningen utförs av Institutionen för Teknik och Samhälle
vid Lunds Tekniska Högskola.

Du har valts ut i egenskap av medlem i en handikapporganisation
eller en pensionärsorganisation. Om Du enbart är stödmedlem
och frågorna därför inte berör Dig personligen,

ber vi Dig fylla i och återsända endast denna
sida i svarskuvertet.

Län: _____

Organisation: _____

Enkätnr: _____

Om Du behöver hjälp eller har frågor om frågeformuläret kan
Du ringa till Nina Waara på telefonnummer 046-222 41 37

Besvara enkäten inom 10 dagar!

VI TACKAR PÅ FÖRHAND
FÖR ER MEDVERKAN!

De här siffrorna behöver vi för att veta att vi fått Ditt svar så att vi inte besvärar Dig med en påminnelse i onödan.

NÅGRA FRÅGOR OM DIG OCH DINA RESVANOR

Besvara frågorna genom att sätta ett kryss i lämplig ruta eller svara på linjen..

1. Ålder _____

2. **Kön**

Man

Kvinna

3. **Hur många personer finns det i ditt hushåll?**
(räkna med dig själv)

_____ personer

4. **Var bor Du?**

I tätort

På landsbygd

5. **Har Du gångsvårigheter?**

Ja, stora

Ja, lätta

Nej

Kan ej gå

6. Har Du besvär av yrsel, svindel, dålig balans eller allmän ostadighet?

- Ja, uttalat ständigt
- Ja, måttligt ständigt
- Ja, uttalat periodvis
- Ja, måttligt periodvis
- Nej, inte alls

7. Har Du besvär av svaghet eller nedsatt ork?

(p g a problem med hjärta, lungor, nedsatt muskelstyrka el. dyl.)

- Ja, uttalat ständigt
- Ja, måttligt ständigt
- Ja, uttalat periodvis
- Ja, måttligt periodvis
- Nej, inte alls

8. Har Du talsvårigheter?

- Ja, uttalat ständigt
- Ja, måttligt ständigt
- Ja, uttalat periodvis
- Ja, måttligt periodvis
- Nej

9. Har Du synproblem?

- Ja, blind
- Ja, betydande problem
- Ja, lätta besvär
- Nej

10. Använder Du något gånghjälpmedel?
(flera alternativ kan anges)

- Nej
 - Käpp, käppar
 - Rollator, kryckor
 - Rullstol, men kan gå några meter
 - Rullstol, helt rullstolsburen
 - Annat hjälpmedel, ange vad:
-

11. Har Du hörselproblem?

- Ja, döv
- Ja, betydande problem
- Ja, lätta besvär
- Nej

12. Hur ofta åker Du hemifrån?

- Dagligen
- Flera gånger i veckan
- Någon gång i veckan
- Flera gånger i månaden
- Någon gång i månaden
- Mycket sällan eller aldrig

13. Har Du färdtjänstlegitimation?

- Ja → Fortsätt till nästa fråga!
- Nej → Fortsätt till fråga 15!

14. Hur ofta åker Du färdtjänst?

- Flera gånger i veckan
- Några gånger i veckan
- Flera gånger i månaden
- Någon gång i månaden
- Några gånger per år

15. Åker Du någon gång tåg?

- Ja → Fortsätt till nästa fråga!
- Nej → Fortsätt till fråga 18!

16. Hur ofta åker Du tåg?

- Flera gånger i veckan
- Några gånger i veckan
- Flera gånger i månaden
- Någon gång i månaden
- Några gånger per år

17. Under det senaste halvåret har jag uppskattningsvis gjort _____ st enkelresor med tåg.

18. Hur reser Du från bostaden till tågstationen?

(flera alternativ kan anges)

- | | |
|---------------------------------------|---|
| <input type="checkbox"/> Bil | <input type="checkbox"/> Cykel/ gång |
| <input type="checkbox"/> Färdtjänst | <input type="checkbox"/> Taxi |
| <input type="checkbox"/> Servicelinje | <input type="checkbox"/> Buss |
| <input type="checkbox"/> Tunnelbana | <input type="checkbox"/> Annat, ange vad: |
| <input type="checkbox"/> Pendeltåg | _____ |

19. Åker Du någon gång längre resor med buss?

(resor utanför hemorten)

- Ja → Fortsätt till nästa fråga!
 Nej → Fortsätt till fråga 23!

20. Hur ofta åker Du längre resor med buss?

(resor utanför hemorten)

- Flera gånger i veckan
 Några gånger i veckan
 Flera gånger i månaden
 Någon gång i månaden
 Några gånger per år

21. Under det senaste halvåret har jag uppskattningsvis gjort _____ st långväga enkelresor med buss.

22. Hur reser Du från bostaden till busshållplatsen?

(flera alternativ kan anges)

- | | |
|---------------------------------------|--|
| <input type="checkbox"/> Bil | <input type="checkbox"/> Taxi |
| <input type="checkbox"/> Färdtjänst | <input type="checkbox"/> Buss |
| <input type="checkbox"/> Servicelinje | <input type="checkbox"/> Annat, ange vad:
_____ |
| <input type="checkbox"/> Tunnelbana | |
| <input type="checkbox"/> Pendeltåg | |
| <input type="checkbox"/> Cykel/ gång | |

23. **Skulle Du vilja göra fler långväga resor med tåg och buss än vad Du gör idag?**

- Ja → Fortsätt till nästa del!
 Nej → Fortsätt till nästa fråga!

24. **Vad beror det på att Du inte reser med tåg och buss i den utsträckning som Du skulle vilja?**

(flera alternativ kan anges)

- Känner mig för svag eller sjuk för att överhuvudtaget åka
 Svårigheter att ta mig till och från hållplatsen/ stationen
 Svårigheter att ta mig in/ ut ur fordonet
 Tycker det är besvärligt med själva resan
 Besvärligt att passa avgångstider
 Tycker det är svårt att få tag på information om hur man reser
 Brist på transportmöjligheter
 Tycker det är för dyrt att resa
 Har inga ärenden/ Behöver ej åka
 Osäker att åka/ vara ute på egen hand
 Svårt att förstå den information om resan som erbjuds
 Svårt att få ledsagare eller annan hjälp under resan
 Annat, ange vad: _____

Fortsätt till nästa avsnitt!

Allmän reseinformation

På de följande sidorna ber vi Dig besvara ett antal frågor om information av mer allmän karaktär. Observera att frågorna handlar om vilken information Du skulle vilja ha **före en resa**, det vill säga redan när Du planerar en resa.

- Skalan är mellan 1 och 7.
- 1 innebär att den här informationen inte är intressant för Dig då du planerar en resa.
- 7 innebär att Du inte skulle kunna planera en resa utan att ha den här informationen.
- Alla andra siffror befinner sig på en skala mellan dessa ändpunkter.
- Besvara frågan genom att sätta ett kryss i den ruta som motsvarar ditt val.

Observera att alla frågor handlar om den information Du skulle vilja ha när Du planerar en resa.

Besvara frågan genom att sätta ett kryss i en ruta som motsvarar Ditt val.

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om var handikapptoaletten finns

Det här är oviktig information för att jag ska kunna planera en resa	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Det här är avgörande information för att jag ska kunna planera en resa
	1	2	3	4	5	6	7

berör ej mig

På en del frågor kan man välja att inte besvara frågan genom att kryssa i rutan "berör ej mig". Det här kan man göra om man själv inte har någon erfarenhet av det som efterfrågas, t ex att man inte sitter i rullstol och därför inte kan besvara frågor om bl. a. rullstolslyft.

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om hur jag kan boka en tåg-/ bussresa helt utan byten

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... reseinformation som är personligt utformad för mig sedan jag beskrivit de speciella behov jag har under en resa (*personlig sökprofil*)

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om hur jag får besked om förseningar och andra störningar när jag är på tåget eller bussen

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om var rökning är tillåten ombord på tåget eller bussen

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

berör ej mig

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... reseinformation som särskilt vänder sig till resenärer med nedsatt hörsel

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

berör ej mig

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om hur jag enkelt tar mig till stationen / hållplatsen från min startpunkt (*t ex bostaden*)

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om vilken perrong/ hållplats tåget eller bussen kommer till då jag kommer fram

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... reseinformation som särskilt vänder sig till resenärer med nedsatt rörlighet i armarna

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

berör ej mig

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om anslutningsresor då jag kommer fram (*t ex taxi och lokaltrafik*)

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om jag kan ta med mig djur på min resa (*även ledarhund*)

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

berör ej mig

Avslutande fråga:

Allmän reseinformation

I den här frågan ber vi dig att fördela 100 poäng mellan olika alternativ.

- Besvara frågan genom att fördela 100 poäng mellan de fem olika alternativen.
- Det Du tycker är det viktigaste alternativet ger Du mera poäng och de mindre viktiga alternativen ger Du mindre poäng.
- Du bestämmer själv hur många poäng Du vill ge till varje alternativ.
- Du kan också välja att ge ett eller flera av alternativen noll poäng.
- Det är viktigt att summan av alla poäng tillsammans blir 100 poäng.
- Om Du känner Dig osäker på hur man besvarar frågan kan Du titta på exemplet längst bak i det här häftet.

Ta ställning till följande fem alternativ genom att fördela sammanlagt 100 poäng mellan dem.

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om hur jag får besked om förseningar och andra störningar när jag är på tåget eller bussen _____ poäng
- ... information om jag kan ta med mig djur på min resa (*även ledarhund*) _____ poäng
- ... information om hur jag kan boka en tåg-/ bussresa helt utan byten _____ poäng
- ... reseinformation som är personligt utformad för mig sedan jag beskrivit de speciella behov jag har under en resa (*personlig sökprofil*) _____ poäng
- ... information om var rökning är tillåten ombord på tåget eller bussen _____ poäng

Summa: 100 poäng

Bussen

På de följande sidorna ber vi Dig besvara ett antal frågor om information om bussen. Observera att frågorna handlar om vilken information Du skulle vilja ha om bussen **före en resa**, det vill säga redan när Du planerar en resa.

- Skalan är mellan 1 och 7.
- 1 innebär att den här informationen inte är intressant för Dig då du planerar en resa.
- 7 innebär att Du inte skulle kunna planera en resa utan att ha den här informationen.
- Alla andra siffror befinner sig på en skala mellan dessa ändpunkter.
- Besvara frågan genom att sätta ett kryss i den ruta som motsvarar ditt val.

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om det finns särskilda platser för allergiker i bussen

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

berör ej mig

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om det finns toalett i bussen

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om hur toaletten ombord på bussen ser ut genom en bild eller en skiss med måttangivelser

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om vilken service som erbjuds ombord på bussen (*t ex servering, filmvisning*)

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om det finns särskilda handikapplatser i bussen med plats för gånghjälpmedel eller rullstol och i så fall var i bussen de finns

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

berör ej mig

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om hur många och hur höga trappsteg det är då jag ska stiga av och på bussen

Det här är **oviktig information** för att jag ska kunna planera en resa 1 2 3 4 5 6 7 Det här är **avgörande information** för att jag ska kunna planera en resa

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om det finns en rullstolslyft eller en rullstolsramp på bussen genom en bild eller skiss med angivna mått för t ex djup och bredd och lutning (*för rampen*)

Det här är **oviktig information** för att jag ska kunna planera en resa 1 2 3 4 5 6 7 Det här är **avgörande information** för att jag ska kunna planera en resa

berör ej mig

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om vilken lastkapacitet rullstolslyften på bussen har

Det här är **oviktig information** för att jag ska kunna planera en resa 1 2 3 4 5 6 7 Det här är **avgörande information** för att jag ska kunna planera en resa

berör ej mig

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om det finns teleslinga/ telespole el. dyl. i bussen

Det här är **oviktig information** för att jag ska kunna planera en resa 1 2 3 4 5 6 7 Det här är **avgörande information** för att jag ska kunna planera en resa

berör ej mig

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om det går att köpa biljett ombord på bussen

Det här är **oviktig information** för att jag ska kunna planera en resa 1 2 3 4 5 6 7 Det här är **avgörande information** för att jag ska kunna planera en resa

Avslutande fråga:

Bussen

I den här frågan ber vi dig att fördela 100 poäng mellan olika alternativ.

- Besvara frågan genom att fördela 100 poäng mellan de fem olika alternativen.
- Det Du tycker är det viktigaste alternativet ger Du mera poäng och de mindre viktiga alternativen ger Du mindre poäng.
- Du bestämmer själv hur många poäng Du vill ge till varje alternativ.
- Du kan också välja att ge ett eller flera av alternativen noll poäng.
- Det är viktigt att summan av alla poäng tillsammans blir 100 poäng.
- Om Du känner Dig osäker på hur man besvarar frågan kan Du titta på exemplet längst bak i det här häftet.

Ta ställning till följande fem alternativ genom att fördela sammanlagt 100 poäng mellan dem.

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om det finns rullstolslyft eller rullstolsramp på bussen genom en bild eller skiss med angivna mått för t ex djup och bredd och lutning (*för rampen*) _____ poäng
- ... information om vilken kapacitet rullstolslyften på bussen har _____ poäng
- ... information om det i bussen finns särskilda handikapplatser på bussen med plats för gånghjälpmedel eller rullstol och i så fall var i bussen de finns _____ poäng
- ... information om hur toaletten ombord på bussen ser ut genom en bild eller en skiss med måttangivelser _____ poäng
- ... information om det går att köpa biljett ombord på bussen _____ poäng

Summa: 100 poäng

Bussterminalen och hållplatsen

På de följande sidorna ber vi Dig besvara ett antal frågor om information om bussterminalen och hållplatsen. Observera att frågorna handlar om vilken information Du skulle vilja ha om bussterminalen och hållplatsen **före en resa**, det vill säga redan när Du planerar en resa.

- Skalan är mellan 1 och 7.
- 1 innebär att den här informationen inte är intressant för Dig då du planerar en resa.
- 7 innebär att Du inte skulle kunna planera en resa utan att ha den här informationen.
- Alla andra siffror befinner sig på en skala mellan dessa ändpunkter.
- Besvara frågan genom att sätta ett kryss i den ruta som motsvarar ditt val.

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om det finns personal på bussterminalen som jag kan vända mig till under min resa

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om och i så fall hur jag kan röra mig på bussterminalen/hållplatsen utan att behöva använda trappor eller ramper

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om det finns en taktil karta över bussterminalen och var den i så fall är placerad i förhållande till huvudentrén (*en taktil karta är en reliefkarta som man kan läsa med händerna*)

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

berör ej mig

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om det finns teleslinga/ telespole el. dyl. på bussterminalen

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

berör ej mig

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om var jag kan förvara mitt bagage på bussterminalen

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om hur det ser ut på bussterminalen/ hållplatsen genom en bild eller en skiss med måttangivelser

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om var handikapptoaletten finns på bussterminalen/ hållplatsen

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

berör ej mig

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om hur handikapptoaletten ser ut genom en bild eller skiss med måttangivelser för t ex dörrbredden

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

berör ej mig

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om var det finns automatisk dörröppning på bussterminalen

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om vilken service jag kan få på stationen under min resa (*t ex restaurang, café, informationsdisk*)

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

Avslutande fråga:

Bussterminalen och hållplatsen

I den här frågan ber vi dig att fördela 100 poäng mellan olika alternativ.

- Besvara frågan genom att fördela 100 poäng mellan de fem olika alternativen.
- Det Du tycker är det viktigaste alternativet ger Du mera poäng och de mindre viktiga alternativen ger Du mindre poäng.
- Du bestämmer själv hur många poäng Du vill ge till varje alternativ.
- Du kan också välja att ge ett eller flera av alternativen noll poäng.
- Det är viktigt att summan av alla poäng tillsammans blir 100 poäng.
- Om Du känner Dig osäker på hur man besvarar frågan kan Du titta på exemplet längst bak i det här häftet.

Ta ställning till följande fem alternativ genom att fördela sammanlagt 100 poäng mellan dem.

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om och i så fall hur jag kan röra mig på bussterminalen eller hållplatsen utan att behöva använda trappor _____ poäng
- ... information om vilken service jag kan få på bussterminalen under min resa _____ poäng
- ... information om det finns teleslinga/ telespole el. dyl. på bussterminalen _____ poäng
- ... information om hur det ser ut på bussterminalen genom en bild eller skiss med måttangivelser _____ poäng
- ... information om var handikapptoaletten finns på bussterminalen _____ poäng

Summa: 100 poäng

Järnvägstationen

På de följande sidorna ber vi Dig besvara ett antal frågor om information om järnvägstationen. Observera att frågorna handlar om vilken information Du skulle vilja ha om järnvägstationen **före en resa**, det vill säga redan när Du planerar en resa.

- Skalan är mellan 1 och 7.
- 1 innebär att den här informationen inte är intressant för Dig då du planerar en resa.
- 7 innebär att Du inte skulle kunna planera en resa utan att ha den här informationen.
- Alla andra siffror befinner sig på en skala mellan dessa ändpunkter.
- Besvara frågan genom att sätta ett kryss i den ruta som motsvarar ditt val.

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om var jag kan förvara mitt bagage på stationen

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om vilken service jag kan få på stationen under min resa (*t ex restaurang, café, informationsdisk*)

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om var det finns handikapparkering vid stationen

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

berör ej mig

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om det finns taktila ledstråk på och i anslutning till stationen (*taktila ledstråk är reliefer i golvet/ marken som man kan känna med en käpp eller med fötterna*)

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

berör ej mig

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om var det finns parkeringsplatser i nära anslutning till stationen

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om det finns teleslinga/ telespole el. dyl. på stationen

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

berör ej mig

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om det finns en taktill karta över stationen och var den i så fall är placerad i förhållande till huvudentrén (*en taktill karta är en reliefkarta som man kan läsa med händerna*)

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

berör ej mig

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om och i så fall hur jag kan röra mig på stationsområdet utan att behöva använda trappor eller ramper

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

berör ej mig

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om det går att köpa särskild mat på stationen (*t ex vegetarisk eller glutenfri mat*)

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

berör ej mig

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om det finns personal på stationen som jag kan vända mig till under min resa

Det här är **oviktig information** för att jag ska kunna planera en resa

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4	5	6	7

Det här är **avgörande information** för att jag ska kunna planera en resa

berör ej mig

Avslutande fråga: Järnvägstationen

I den här frågan ber vi dig att fördela 100 poäng mellan olika alternativ.

- Besvara frågan genom att fördela 100 poäng mellan de fem olika alternativen.
- Det Du tycker är det viktigaste alternativet ger Du mera poäng och de mindre viktiga alternativen ger Du mindre poäng.
- Du bestämmer själv hur många poäng Du vill ge till varje alternativ.
- Du kan också välja att ge ett eller flera av alternativen noll poäng.
- Det är viktigt att summan av alla poäng tillsammans blir 100 poäng.
- Om Du känner Dig osäker på hur man besvarar frågan kan Du titta på exemplet längst bak i det här häftet.

Ta ställning till följande fem alternativ genom att fördela sammanlagt 100 poäng mellan dem.

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om var det finns parkeringsplatser i nära anslutning till stationen _____ poäng
- ... information om det finns personal på stationen som jag kan vända mig till under min resa _____ poäng
- ... information om det finns taktila ledstråk på och i anslutning till stationen (*taktila ledstråk är reliefer i golvet/ marken som man kan känna med en käpp eller med händerna*) _____ poäng
- ... information om det finns en taktil karta över stationen och i så fall var den finns i förhållande till huvudentrén (*en taktil karta är en reliefkarta som man kan läsa med händerna*) _____ poäng
- ... information om var det finns handikapparkering vid stationen _____ poäng

Summa: 100 poäng

FRIVILLIG UPPGIFT OM NAMN, ADRESS OCH TELEFONNUMMER

Du får gärna lämna namn, adress och telefonnummer om Du är intresserad av att fortsätta diskutera informationens betydelse för äldres och funktionshindrades resor med tåg och buss.

Vi kommer att kontakta ett urval av dem som lämnar dessa uppgifter för en personlig intervju.

Namn: _____

Adress: _____

Telefonnummer: _____

Tack för Din medverkan!

POÄNGFÖRDELNINGSPRÅGA - EXEMPEL

Fördela 100 poäng mellan de olika alternativen. Mesta poäng ger du till det alternativ som Du tycker är viktigast och mindre poäng till de andra alternativen.

Om Du vill kan Du välja att ge ett eller flera av alternativen noll poäng. Summan av alla poäng som Du fördelat måste dock bli 100.

Ta ställning till följande fem alternativ genom att fördela sammanlagt 100 poäng mellan dem.

När jag ska ut och resa med tåg och buss vill jag **redan före resan** kunna få ...

- ... information om *var på perrongen* tåget stannar då jag ska kliva på eller av tåget 0 poäng
- ... information om hur jag under resan kan få besked om försenad avgång för min bokade tåg-/ bussresa 25 poäng
- ... information om det är möjligt att själv välja sittplats då jag bokar min resa 5 poäng
- ... information om *vilken perrong* tåget anländer till då jag ska stiga av tåget 20 poäng
- ... reseinformation som särskilt vänder sig till resenärer med nedsatt rörlighet i benen 50 poäng

Summa: 100 poäng

När Du plussar ihop alla poängen skall summan bli 100 poäng.

APPENDIX III

The factor analysis
- a complete structure of the factors

Factor A : General travel information

- GI 1 Information about different price alternatives for my journey
- GI 2 Information about whether I can choose my seat when I book my journey
- GI 3 Information about whether I can book a journey by train or bus without having to make any connections
- GI 4 Information about whether I can book a journey with shorter or longer time for changing at connections
- GI 5 Information about delays or other disturbances onboard the train or bus
- GI 6 Information during my journey about a late departure for my booked trip by train or bus
- GI 7 Information about connections at arrival
- GI 10 Information about which platform or bus stop my connecting train or bus will depart from
- GI 11 Information about how to get to the station or bus stop easily from my starting point (e.g. home)
- GI 12 Information about which platform or bus stop my train or bus will leave from at my departure
- GI 13 Information about where at the stop the bus will pull up so that I will know approximately where to get on the bus
- GI 14 Information about where at the platform my car will stop so that I will know where to get on or off the train
- GI 14 Information about where at the platform my car will stop so that I will know where to get on or off the train
- GI 16 Information about which side of the train to disembark from on arrival
- GI 21 Information specially compiled for me according to my specific needs during a journey
- GI 22 Information about whether staff on the train or bus know how common diseases an impairments manifest themselves and how to cope with them
- BS 2 Information about where I can store my luggage at the bus terminal
- RS 2 Information about where I can store my luggage at the station
- B 6 Information about the number of steps I have to climb to embark and disembark the bus and how high they are
- T 1 Information about whether there is a telephone on the train
- T 2 Information about where I can store my luggage on the train and what the storage facilities look like

Factor B: Parking at the bus terminal and railway station

- BS 6 Information about where parking is available close to the bus terminal/bus stop
- BS 7 Information about where handicap parking is available close to the bus terminal/bus stop
- RS 6 Information about where parking is available close to the station
- RS 7 Information about where handicap parking is available at the station

Factor C: Ticket onboard

- B 10 Information about whether it is possible to buy my ticket onboard the bus

Factor D: Mobility at the bus terminal and railway station without having to use stairs

- BS 8 Information about the possibilities of moving around at the bus terminal without having to climb steps or use ramps
- BS 9 Information about the bus terminal/bus stop in the form of a picture or the layout
- BS 11 Information about the location of door openers in relation to automatic doors at the bus terminal
- BS 12 Information about the location of the handicap lavatory in the form of a picture or the layout (e.g. the width of the door)
- RS 10 Information about the location of automatic doors at the station
- RS 11 Information about the location of the door openers in relation to automatic doors at the station

Factor E: information specially compiled for the mobility impaired

GI 19	Information specially compiled for the lower-body impaired
GI 20	Information specially compiled for the upper-body impaired
B 3	Information about the lavatory on the bus in the form of a picture or a layout
B 5	Information about whether there are special handicap seats with room for a walking aid or wheel chair and, if so, where they are located on the bus
B 6	Information about the number of steps I have to climb to embark and disembark the bus and how high they are
B 7	Information about whether there is a wheel chair lift or ramp on the bus
B 8	Information about the capacity of the wheel chair lift on the bus
B 11	Information about the interior of the bus in the form of a picture or the layout, where, for example, the width of the mid aisle is indicated
BS 8	Information about the possibilities of moving around at the bus terminal without having to climb steps or use ramps
BS 10	Information about where there are automatic doors at the bus terminal
BS 12	Information about the location of the handicap lavatory in the form of a picture or the layout (e.g. the width of the door)
RS 8	Information about the possibilities of moving about in the station area without having to use stairs or ramps
RS 9	Information about the station in form of a picture or the layout
RS 12	Information about the location of the handicap lavatory at the station
RS 13	Information about the handicap lavatory at the station in form of a picture or the layout
RS 17	Information about whether there is an escort service at the station (escort service = assistance is offered at the station)
T 7	Information about how many steps I have to climb to embark and disembark the train and how high they are
T 8	Information about whether there is a wheel chair lift or ramp on the train
T 9	Information about the capacity of the wheel chair lift
T 10	Information about the interior of the compartment in the form of a picture or the layout
T 11	Information about where there are handicap seats on the train

- T 12 Information about the handicap seats on the train in form of a picture or the layout indicating seat height and legroom
- T 13 Information about whether there is room for my walking aid by the handicap seats on the train
- T 14 Information about whether there is room for my walking aid by my seat in the compartment
- T 15 Information about whether there is a handicap lavatory on the train
- T 16 Information about the handicap lavatory in form of a picture or the layout

Factor F: Service available during journey

- BS 1 Information about whether there will be staff at the bus terminal to assist me during my journey
- BS 2 Information about where I can store my luggage at the bus terminal
- BS 3 Information about what service is available at the bus terminal (e.g. restaurant, café, lavatory)
- BS 4 Information about where the changing table is located at the bus terminal
- BS 5 Information about whether special food is available at the bus terminal (e.g. vegetarian or gluten-free food)
- BS 7 Information about where handicap parking is available close to the bus terminal/bus stop
- RS 1 Information about whether there will be staff at the station to assist me during my journey
- RS 3 Information about what service is available at the station during my journey (e.g. restaurant, café, lavatory)
- B 3 Information about the lavatory on the bus in the form of a picture or a layout
- B 4 Information about what service is available at the bus (e.g. food and drink, films)
- T 1 Information about whether there is a telephone on the train
- T 2 Information about where I can store my luggage on the train and what the storage facilities look like
- T 4 Information about whether special food is available on the train (e.g. vegetarian or gluten-free food)

Factor G: Service available onboard

- BS 3 Information about what service is available at the bus terminal (e.g. restaurant, café, lavatory)
- B 3 Information about the lavatory on the bus in the form of a picture or a layout
- B 4 Information about what service is available at the bus (e.g. food and drink, films)
- B 10 Information about whether it is possible to buy my ticket onboard the bus
- T 2 Information about where I can store my luggage on the train and what the storage facilities look like
- T 5 Information about whether it is possible to buy my ticket on the train

Factor H: Information specially compiled for the visually impaired

- GI 9 Information about whether I can bring my pet along during my journey (including a guide dog)
- GI 18 Information specially compiled for the visually impaired
- BS 14 Information about whether there is a tactile map of the bus terminal and, if so, where it is located in relation to the main entrance (a tactile map is a relief map)
- BS 15 Information about whether there are grooved walkways at the bus terminal and in its immediate vicinity (grooved walkways are grooves paths in the floor or in the ground)
- RS 14 Information about whether there is a tactile map at the station and, if so, where it is located
- RS 15 Information about whether grooved walkways are available at the station and in its vicinity (grooved walkways are grooves paths in the floor or in the ground)

Factor I: Information specially compiled for the hearing impaired

- GI 17 Information specially compiled for the hearing impaired
- BS 16 Information about whether there is an audio channel at the bus terminal
- RS 16 Information about whether audio channels etc. are available at the station
- B 9 Information about whether audio channels etc. are available on the bus
- T 17 Information about whether there is an audio channel etc. on the train

Factor J: Information specially compiled for passengers with allergies

- GI 8 Information about where smoking is allowed onboard the train or bus
- BS 5 Information about whether special food is available at the bus terminal (e.g. vegetarian or gluten-free food)
- RS 5 Information about whether special food is available at the station (e.g. vegetarian or gluten-free food)
- B1 Information about special seats on the bus for passengers with allergies
- T 3 Information about whether there are special seats on the train for passengers with allergies
- T 4 Information about whether special food is available on the train (e.g. vegetarian or gluten-free food)

Factor K: Information about whether animals are allowed

- GI 9 Information about whether I can bring my pet along during my journey (including a guide dog)

Factor L: Information about whether there is a changing table at the bus terminal, railway station or onboard the train

- BS 4 Information about where the changing table is located at the bus terminal
- RS 4 Information about where the changing table is located at the station
- T 6 Information about where the changing table is located on the train

APPENDIX IV

The rank correlation diagrams

