

# THE ROLE OF NON-GENDER RELATED PUBLIC TRANSPORTATION PLANNING IN SOCIAL EXCLUSION

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Exclusionary public transportation design for women in London  
underground

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**Rumeysa BAYAR**

**Development Planning Unit  
University College London**

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## **CHAPTER 1. INTRODUCTION: Defining and understanding of mobility and gender**

## 1.1. Background

Transportation is the key to open cities to humanity and the linkage between the humankind and city life. The urban transport serves people's travel needs through providing particularly taxis, buses, and railways, and enhances social and economic life. Since transportation determines access to fundamental activities, such as leisure, employment, education and health, it needs to be considered that these daily life actions vary from gender to age, disability to employment; therefore, in order to create an effective transport policy the connection between the different types of variables to transportation. In addition to that non-defining pluralism of transportation in sufficient details may lead to social exclusion among society. At this point of view it is essential to identify the concept of social exclusion and exclusion of whom and the role of transportation.

The main problem arises from the definition of social exclusion. Many explanations of social exclusion concepts ignore the detail of what individuals experience in terms of exclusion. It was widely believed that exclusion is only related to economic welfare; however, the concept of social exclusion is the wider approach and refers to life satisfaction. It does not necessarily related to economic disadvantages; likewise, socially excluded person cannot be defined as a poor or unemployed. Burchardt et al. (1999) defined social exclusion as disconnectedness with normal activities in the society beyond personal control and Buras Foley (1999) stated "*social exclusion is not only about shortage of money. It is about rights and relationships; and about how people are treated and how they regard themselves; about powerlessness, exclusion and loss or dignity.*" (Cited in Wixey et al. 2005, p.14).

As a consequent of misleading definitions the role of transportation in emergence of social exclusion has until recently been underestimated (Hine and Mitchell 2003) .Since, as Gaffron, Hine and Mitchell (2001) said that social exclusion considered transportation is a

factor to access health care facilities and causes rural isolation. But at the present time transportation is defined as a *facilitator* which provides individual's ability to access essential needs or a *barrier* which prevents people from participating in daily life due to reduced or lack of mobility services (Church & Frost 1999; Kenyon et al. 2002 cited in Wixey et al. 2005). Present conditions require from individuals full participation with society in terms of economic, social and political life and transportation mobilise these actions through providing physical connection. In this reciprocal relationship, if transportation does not fulfil its facilitator role then it became a barrier to personal mobility and this is the heart of social exclusion in the society. Additionally it should be taken into consideration that the concept of social exclusion caused by transportation differs based on gender, age, economic welfare and mobility. In these categories, the literature has avoided gender variable, particularly women whom are limited their mobility because of the non-gender-related transportation design. In order to generate sustainable urban development and transportation policy more equitable for the whole society, gender needs to be integrated into research and implementation.

## **1.2. Why gender?**

Gender is a wider perspective which gets involved in all social relations such as class, age, ethnicity and religion as well as social sectors such as health, transport, employment and housing and it participates in productive, organisational and distributive spheres of activities and institutional structures (Levy 1992; Beall 1992). To add that transportation is the crucial part of cities that shapes and reforms the structure; likewise, the structure of the society is defined by gender, based on biological needs and roles of female and male (Kunieda & Gauthier 2007). Correspondingly different responsibilities and economic and social roles of women and men also differentiate travel needs. Because women and men shape their behaviours, appearance, travel needs in a word their physical and emotional life based on

gender roles. Therefore, the reciprocative relationship between transportation and gender is the heart of the city and society. However, definition of gender roles differ from culture to culture, place to place, so it is quite complex to make assumptions especially for women. Since transportation plays more vital part in women lives than men. Transport enables women's access to health, employment, child care, school and various social, economic and political domains of society. These travel needs are structured by women's specific roles, such as shorter trips, travelling in usually off-pick times as well as household tasks. As Wachs (1996 : cited in ibid) pointed out that travel patterns are argued to be one of the most clearly gendered aspects of life. In the intersection of transport, gender and social exclusion, women are a group who have been experiencing social exclusion in several ways as because of lack of public participation services (Grieco, Pickup and Whipp 1989). There are also specific groups, such as disabled women, older women, mothers, women from different culture, religion, among women who experience social exclusion in different ways. Therefore, for more equal transportation services, gender analysis, particularly women, needs to be conducted in sufficient detail because an effective gender analysis can reveal the major travel differences and expectations of women and men and for this reason gender is a vital aspect of transportation design and policy.

### **1.3. Understanding the urban transport system**

Cities' function has been developed and supported by the urban transport structure. Without its efficiency cities have never been grown and would have never had a sustainable future. Transport structure is also shaped by people's travel choices. According to Mashiri et al. (2005) traditional transport planning has left out notable groups such as rural and peri-urban habitants, who can be considered either existing or prospective users. Because, transportation policy and planning system has tended to focus on providing services and

infrastructure for only existent commuters. Additionally, transportation system functioning is attached to functioning of urban economies (Small and Gomez-Ibanes 1999). Therefore, transportation has until recently been considered economic driven approach and been strength through providing mainly private car dependent solutions.

#### **1.4. The Research question**

The research question is emerged from the literature of transportation, gender and social exclusion. This dissertation seeks to reveal shadows behind gender and transportation, and highlight the social exclusion context taken place between gender and transport. Also, through providing literature analysis and conducting a case study, this dissertation aims to create a strong debate about the role of non-gender-related transportation planning in social exclusion. Therefore, the main focus area is the effects of non-gender related transportation design in quality of life of women with children. The main reason of focusing on women with children is that women are generally treated as an excluded group in a society and their travel needs has been avoided. Women with children have more responsibility as a primary carer at home; therefore, their travel needs are more specific than others, or is this approach correct? Are there really any differences between women with children and disabled people? How do women manage travel with children? Do women feel socially excluded due to lack of public transportation design? To be brief, this study asks “*what is the role of non-gender related public transportation planning in social exclusion of women with children*”. This dissertation aims to provide an answer and strong debate to all these questions and hopes to tease out transport and travel needs of women and unpack the role of transportation design in social exclusion of women with children.

#### **1.5. Methodology and chapter outline**

This study is carried out in two main steps in order to reveal research question. Firstly, in Chapter 2 the literature review covers the deeper debate about what kind of social exclusion intersects with transportation and discusses the differences between women and men travel needs. The literature review also produces social aspects of public transportation planning and its effects on women's life. This section will be the first step for the case study. In second step, the Chapter 3 is an empirical case study which is based on qualitative analysis. The case study focuses on the effects of lack of efficient tube design in women with children in London. The key question of this study is that how are women with children influenced by tube design when they travel with buggy? and what accessibility means to women with children? The participants and information for the case study will collect through searching blogs, reading chat rooms and websites. The methodology of case study will be explained more detailed under the methodology section. Finally, the Chapter 4 will conclude and create a discussion about the findings of case study.

## **CHAPTER 2. LITERATURE REVIEW: Theoretical analysis of gender in transportation planning**

### **2.1. Social exclusion and transport**

Although gender, transportation and social exclusion are highly related to each other, the intersection of these issues has been ignored by literature until early debates. But now,

transportation surveys have been included gender-related figures and analysis (Mashiri et al. 2005). To add that, travel behaviours such as gender differences in travel time spent and inequalities in transportation facilities such as cost, safety and design as well as other variables i.e. health cost and economic welfare which are directly affect transportation choices have been also emphasised ( Bryceson & Howe 1992: cited in Mashiri et al. 2005). Women are a formative group that should shape transport policy and planning in order to create gender equity. The reason behind this emerges from different needs and expectations of women as given by their multiple household roles. For instance, women's needs are mainly influenced by their family or children and additionally their work; therefore, they need to be paid more attention. In the absence of women's needs, social exclusion takes places in the society. As given a brief in Chapter 1, social exclusion can be also occurred by non-gender related transportation planning.

Although there is a concept of *social exclusion*, it is quite difficult to make a common definition and its integration with transportation. Therefore, many definitions and cases conducted by several authors overlap (Gafron, Hine and Mithell 2001). According to Lee and Murie (1999) social exclusion can be debated under these areas: education, health, social networks, labour markets, the welfare market and exclusion from public utilities. On the other hand, another framework developed by Burchardt et al. (1999) suggests identification of activities such as consumption activity, saving activity, production activity and political and social activity because these indicators can be used to measure social exclusion in any contexts.

Other different types of social exclusion are identified by Church et al. (1999, 2000). They categorised social exclusion based on three different types of process which may affect transportation and exclusion relationship. These are:

1. *“The nature of time-space organisation in households”*
2. *“The nature of the transport system”*
3. *“The natures of time/space organisation of the facilities and opportunities individuals are seeking to access.”* ( cited in Hine and Mitchell 2003, p.7)

In light of these there are seven categories that identified by Church et al:

- *Physical exclusion*: Inhibiting accessibility to services through physical barriers. This is usually experienced by disabled people, women with children, elderly or individuals need to travel with heavy loads or groups of minorities who cannot speak the dominant language
- *Geographical exclusion*: Emerging social exclusion both in rural areas and in urban fringe due to lack of efficient transportation facilities.
- *Exclusion from facilities*: Inaccessibility to facilities-shopping, leisure, education, health- because of the distance from individual’s home
- *Economic exclusion*: Accessibility is reduced or inhibited because of the cost of travel
- *Time-based exclusion*: Refers to limited or inadequate time availability for the travel
- *Fear-based exclusion*: Fear and anxiety, even terror effect or influence accessibility to public places and transportation, especially children and women.
- *Space exclusion*: Lack of security may discourage individuals from public spaces

All these experience-based categories lead us to reveal the inevitable need to identify indicators that have a direct bond to transportation in social exclusion. Hine and Mitchell (2003) specifically emphasize the need of such identification in these ranges of experience

To conclude, in order to understand the connection between transportation and social exclusion clearly, right indicators needs to be teased out; otherwise, the uncertainty between them can rarify measurement of spatial analysis and moving to step forward to gender relations.

In terms of addressing social exclusion and transportation, in early 2002, The Social Exclusion Unit, which was launched in 1997 by Labour Government in UK to purpose of the

reduction of social exclusion and provide information to improve government action, (cited in Lucas, 2002) identified what kind of exclusion can be led by transportation. These are identified mainly under the accessibility discussion. For instance, for poor transportation facilities can be a barrier to have a job or inhibit people from accessing employment facilities. Similarly, people who are dependent on public transportation cannot access to the hospital easily. Another point is that there is a significant connection between poor transportation and dropping out of college. Overall, it can be said that poor transportation can limit people's participation in domain social activities.

### **2.1.1. Measuring gender equity in transportation □ The quality of life**

Before moving forward to measuring gender equity in transportation, gender analysis needs to be considered as an essential step to gender equity. Gender analysis refers to the existence of gender differences and aims to understand inequalities between women and men, and helps to generate more efficient gender mainstreaming in development (Kunieda & Gauthier 2007). In order to add that “quality of life” is an essential part to be integrated any development policy which also cannot be separated from gender. As Fadda and Jiron (1999) underlines, that problems and solutions can be perceived a different perspective or point of view by individuals because the human being interpret everything based on their social lives and roles. This is where gender becomes the key point since all individuals experience life in a different way, both physically and socially. Therefore, gender analysis is in the heart of gender equity.

A good and well-qualified measurement of gender equity in urban transport should be able to reveal the differences of transportation project impact on men and women, which occurs based on the support mechanisms and opportunities offered but not gender related issues. How well the training opportunities, credit or support mechanisms are the issues the

project needs to address. A good project needs to enhance the women's roles and benefits. Care should be directed to disadvantaged groups and enhance their benefit, such as people with disability or women with children. These groups should benefit of transportation through increasing their mobility and accessibility (Kunieda & Gauthier 2007).

### **2.1.2. The impact of transport on gender equality and vice-versa**

*“Equity (also called justice and fairness) refers to the distribution of impacts (benefits and costs), and the degree to which that distribution is considered fair and appropriate” (Litman 2006, p.2).*

Transport and gender has mutual effects on each other. Gender differences determine transport use and transport services shapes travel behaviour and choices of women and men. Gender differences in transport use include four main areas: social and economic factors, physical differences, power and vulnerability, and psychological factors. These areas are all related to each other in many ways. Women's lesser mobility, transport options and access to resources, as an example, play an important role in maintaining the existing balance of power between different genders. This indicates a complex relation between physical differences and power and vulnerability (Hamilton and Jenkins 2005).

Creating gender equity through transportation policy and design depends on the gendered transportation policy and planning. Grieco, Pickup and Whipp (1989) suggest that policy should be thought at two levels; at the level of the household and at the level of local authority. The policies should either enhance the access of transportation for the people most in need (people with disabilities, women with children) or generate some social initiatives that aim to enhance the awareness of the responsibility towards a more gender equitable balance.

### **2.1.3. Gender biased transport and effects on women's life**

*“Women's travel patterns are different from men's, and these differences are characterized by deep and persistent inequalities. Within any given urban setting, women have inferior access to both private and public means of transport while at the same time assuming a higher share of their household's travel burden and making more trips associated with reproductive and caretaking responsibilities” (Peters 2013, p.1).*

Many examples can be given for explanation of transportation role in women's life to manage different roles given by society. Women are now a breadwinner, a mother, a wife and have a social and political role in the society. It has been seen that women has been experiencing transport disadvantages in terms of “their task bundles” ( Rosenbloom, Ch.4: cited in Grieco, Pickup and Whipp 1989, p.13 ). These different roles produce several travel patterns and needs. Juggling work and household activities as well as child care, sometimes adult care activities are time-limiting on women (Hamilton 2002). And because of inadequate or lack of transportation it may result in great severity in women' live. Additionally, in terms of seeking jobs arriving to an appointment on time can be also difficult.

Rosenbloom (1989) also emphasizes on women's travel behaviour interconnected with where they live and work, and need to companion children to education. Women tend to live close to their work and the possibility of poor public transportation facilities may be an obstacle for them to access the opportunities out with the local area (cited in Grieco, Pickup and Whipp 1989).

Disadvantages in transportation can be exacerbated by other variables such as low income, considerable consequences both for levels of stress (e.g. stress of travelling) and their employment prospects (e.g domestic works, household activities) (ibid). Additionally, poor

transportation services constitute an impediment not only for women's economic and social life but also it is an obstacle for employers in terms of attracting women labour (Grieco 1986). Hamilton et al. (2000) also add to that Caring responsibilities and income are clear issues that determine women's transport. Another crucial point of transport disadvantages is that personal safety and trolley friendly design make transportation more accessible and usable for both women, particularly with children, and disabled people (Hamilton et al. 1992).

Another critical point is that transportation or its limited services may affect negatively women's physical and emotional life (Hamilton 2002). i.e. Waiting long time for available public transportation in inclement weather and in crowded public places risks women's life especially for older women. Also, after spending much time for waiting for transportation during the day can impact on emotional well-being by producing anger and exhaustion. The most important problem for women is that crowded public transportation limits personal space; therefore, women fear of sexual abuse or harassment. For instance, 5 per cent of all women in London have experienced sexual harassment on public transport (endviolenceagainstwomen.org, 2012). End Violence Against Women Co-Chair Professor Liz Kelly said that *"Our survey shows that sexual harassment in London is extremely common. Some survey respondents also said that this behaviour makes them feel uncomfortable and unsafe and makes them change their behaviour and decisions about when and where to travel."*(ibid)

All these negative impacts of transport can result in high level of anxiety and stress in women. Negative physical and emotional results of inappropriate transport services need to be taken into account while the planning process because healthy social relations in the society are directly bonded to individuals' well-being.

## **2.2. Women and Transport □ Who travels How?**

According to Turner and Fouracre (1995, p. 78) women are assigned three roles in society. They are “a) production, as workers; b) reproduction, responsible for childcare and managing the household; and c) as a community managers, responsible for maintaining community and social networks, and local government.” And add that travel needs of women have been influenced by these specific roles. It must be considered that these roles vary from culture to age, economic welfare to ability to move, and also depends on the geographical area-i.e. mountainous areas aggravate travel. For example , in rural areas the role of households incorporate accessing water and fuel or wood so this is also a factor determine travel behaviour (ibid) . In cities or urban areas, women need to well coordinate their work, social life and children’ needs. Levy (1991) underlines that the travel patterns are being changed due to urban sprawl and land-use specifications.

As it can be understood women’s travel patterns and behaviours are designed by trip-changing (Hasson and Polevoy, 2011). Rosenbloom (1989) also defines women travel as a “trip chain”. It means in the literature that they need to stop less than 30 minutes (ibid). This leads us to “mode of choice” are made by women. Private cars are not accessible for low-income women even and especially the priority is taken by male. Cycling and walking are also other options for women; however, in terms of physical and weather conditions these travel options are not usually preferred by urban women. Therefore, public transportation becomes vital for women transport.

### **2.2.1. Policy and Planning**

It needs to be highlighted that although transportation affects individuals social and economic life but also it serves society as a whole. Any policy and planning in transportation should consider social exclusion at an individual level as well as the society level by

generating equality in societies. Barry (2002) discusses another point of view of “transportation that transportation is a facilitator for social solidarity” (cited in Wixey et al. 2005).

Turner and Fouracre (1995) explain that the problem with planning for mobility is its tendency to improve the conditions of those who are likely to be more mobile already. i.e. The owners of personal vehicles who are dominantly male from higher income level. Additionally, the planning system also pays attention to the peak travel period when the accessibility is a problem for people because of congestion. It needs to be emphasised that access problem in peak time remains still for everyone in the society; however, accessibility may even more difficult in this time for women especially with children because of the lack of space for stroller i.e. Women with children may have to wait for the next bus or even the second and the third bus to find space for the stroller. Ironically, the situation can be similar for those women who are trying to go to shopping, hospital, or find a job in off-peak times, due to a general decrease in public transport service.

Unless the transport planning effort focuses on both needs of women and men and the necessity of improvement of facilities based on all groups in the society, sub-optimal solutions will persist. i.e. Women, particularly low-income and older, travel off-peak and more often travel bonded with children or groceries, sometimes both of them, they need to be paid special attention to meet their needs. As Peters (2013) suggest that as long as public transportation features are not taken into account based on gender-specific needs, the transportation impact is not gender neutral.

Another fact is added by Allen, (2002) ; Loukaitou-Sideris and Fink (2009) the reason behind non-gender sensitive transit operations emerge from male dominance planning, provision and operation in the public transit sector. Peters (2013) adds that male transit

planners focus too much on decreasing point-to-point travel times and create short term solutions, in doing so improvement in overall system such as affordability and flexibility, reducing wait times are avoided.

**a. Transportation for whom? □ Right to the city**

*“Accessibility depends on several things: Can people get to key services at reasonable cost, in reasonable time and with reasonable ease? Does transport exist between the people and the service? Do people know about the transport, trust its reliability and feel safe using it? Are people physically and financially able to access transport? Are the services and activities within a reasonable distance?” (Social Exclusion Unit Report 2003, p.1),*

The principles centre in the right to the city notion is raising awareness in the individual and collective consciousness, creating equality in opportunities for material well-being as well as the recognition and democratic decision making for all individuals (Levy, 2013). She argues that right to the city notion is not only being able to possess urban sources but also it gives

hope to change future cities and governance in terms of gendered perspective, so that equality can be emerged for women and men, boys and girls for daily life. Transport planning is the centre of the urban citizenship sphere because the perspective of transport offers the use an occupation or urban transport.

Although, transportation can be a tool to create gender equity, there is a question needs to be asked: transportation for whom? When we call equality do we mean groups or individuals? Or groups of whom? Which groups of women face with transport disadvantages? As Young (2001) states comparison of groups or classes are directly bond

with evaluations of justice. Hence, groups are taken into account while in the equality mainstreaming process. Class angle is also another key aspect and always an obstacle to reach equality so it needs to be highlighted. High income groups of women have easy access to the private car and do not depend on public transport, but is this situation same for low income women? Or low income women with children? The main point here is not all women are socially disadvantage in transport planning; therefore, while debating about women and transport , the question of WHO needs to be defined carefully. Because of the unanswered questions, transport policy and planning usually fails in terms of providing equal access for society as a whole. For instance, low income women, women with children, disabled women with children or women who are responsible for elderly people in the household have different travel needs than many people and due to belonging to a low income group they commonly depend on public transportation. As a conclusion, transportation policies have to categories people into groups in sufficient details; otherwise, equality for one and all is not possible.

#### **b. Travel patterns and differences**

Travel patterns and differences as well as travel choice and time help to categories travel needs among society. The literature highlights that the major difference of travel patterns between women and men results from total numbers of journeys made. Compare to men, women travel patterns usually present a large number of shorter trips. The reason behind this relies on women's different roles. i.e. Women are identified as workers, as producers and as community managers (Turner and Fouracre 1995). Their travel pattern are structured by these roles and this is where differs from men.

According to The Bureau of Labour Statistics (BLS) Report (2013, p. 1), *“The labour force participation rate of mothers with children under 18 years of age was 70.9 per cent in*

*March 2011*". Increasing employment of women with children in labour force shows us that the high percentage of women's transport needs more likely to be led by their work and also they need to escort their children to and from education while going work, and also manage shopping on the way home (Rosenbloom, 1989). In this complex correlation between household and employment status, women's complex travel patterns are shaped by walking and public transport.

Hamilton (2002) points out another view that the journey length varies based on journey purpose and here is the key point that gender becomes important for transportation. For example, shorter trips such as escorting education and shopping are performed more often by women than men perform. On the other hand, long distance trips such as work are accounted for men's journey.

However, it must be kept in mind that women also have sub-groups and different circumstances. i.e. Women in rural areas has different travel needs than women in urban. For example, accessing water and wood is essential for daily life. Disabled women and women with children also need to use barrier friendly transportation facilities. These categories of women are more likely experience transport disadvantages in urban life. Although women are also categorised among themselves in terms of transport needs, the literature also shows that women share similar travel needs and patterns in anywhere. In urban and rural areas, large or small cities, women always have more complex travel pattern than men' since they have been allocated different duties.

### **Travel choice and time**

*"The concept of travel choice is problematic because it is based on an implicit assumption that does not recognise at least three critical issues central to transport and transport planning, namely the different social positions and multiple identities of*

*transport users; the social construction of space, public and private; and the politics of transport in the context of social relation” (Levy, 2013, pp.3)*

Hine and Mitchell (2003) say that the car is still main transport mode for women and men; however, women are more depend on public transportation and walking than men, and tend to travel more in off-pick times (Hamilton et al. 2000). In terms of travel options, women have few choices. If a car is available to use for transportation for women it will be used; however, because of many reasons i.e. low attractiveness, high cost or low ability to use a car are factors that affects travel choices. For low-income female commuters having driving licence or car is not a travel option and those groups of women rely on walking and public transportation. However, due to the increasing crime rate and unfriendly environment for pedestrians or/and cyclist women are also not willing to walk or cycle. It can be seen that above all options- cost, availability- personal security is the main issue for women. Not only for themselves but also they need to ensure a safe journey to access education for children.

Another important aspect of gender differences is “time”: pick/off-pick travel times and day/night travel times (Hamilton 2002). The reason is that women usually work in part-time jobs and they tend to visit families and friends, their travel patterns are in more off pick times. And also because of the fear of danger and safety, they are not willing to travel at night or after dark, compare to men. All these restrictions result in “time poverty” in women’s life and it limits their contribution to social and political life, and this is an indicator for their short trips and patterns (Mashiri et al. 2005).

### **2.2.2. Design in transport □ Barriers to travel by public transport**

After putting all variables which determine women’s travel behaviour, design is a vital aspect that has impact on disability as well as women’s mobility. Imrie (1996, 200) said that because of seeing disability as a private concern rather than public responsibility, the

transport planning system avoids not only disabled person but also fails in wider sense (Hine and Mitchell 2001b). For instance, women with children have limited mobility since they need to travel with the buggy or elderly people are not able to travel easily compare to healthy people. This means the transportation planning may excludes more groups than only disabled people; therefore, social agenda for transport planning needs to take accessibility issue in the centre of agenda and reflect upon not only disabled people but also non-impaired groups (Davies 1999; Torrance 1992; Vigar 1999).

This section is focusing on the main barriers to travel by public transport and the groups most affecting from them. It needs to bear in mind that restriction affects not only individuals but also society as a whole. Because, the ability of travelling enables individuals to engage with the society and it enhances social inclusion. As Barry (2002) considers transportation as a facilitator of social solidarity because it is based on share experience, it serves both individuals and the society. It should be noted that this section talks about the problems of where public transportation is already available and the facilities itself.

#### **a. Examining the design of station and vehicles, sufficiency and safety**

##### **Design Barriers in transportation facilities and vehicles**

The urban design concerns have been focusing on the needs of disabled people. Hine and Mitchell (2001b) points out that problems and barriers in urban design in the street environment may inhibit or limit travel range of disabled people. As Tyler (2002) suggests that the built environment also creates “inclusion” and “exclusion” zones and these zones produce social inclusion and exclusion among different groups in the society. These groups include disabled people and also non-impairment bodies. The design of physical environment serves society as a whole and a society is formed by a large number of different groups. For instance, a society is firstly shaped by gender and gender needs. Gender is divided into two

main characteristics and women are one of them. Women can be grouped in many ways based on class, culture, disability, employment status and so on. And all kind of women mould their travel patterns and needs based on these categories. Particularly women with children need to shape their travel and journey regarding the baby's presence. Design of public transport becomes more important for them. Because, the absence of lifts or escalator in train stations also causes mobility problems for people with traveling children or luggage.. The notion behind this, people, who have physical impairment, reluctant or avoid making trip or train changes where there is a long distance or no escalator/lift services between platforms (Hine and Mithell, 2001b).

The concept of design determines the sufficiency of accessibility which is the centre stage of transportation. Levy (2013) argues two dimensions of transport. First one is that transport is important not only economic life but also it is a physical connection between different locations which refers to accessibility. Secondly, rather than being a geographical term, transportation is freedom to move between spaces without any verbal or physical threat which is mobility. Design is the primary actor that can reflect on accessibility and mobility. If the design of transportation exists as a barrier for women with children, then their mobility is restricted and can result in exclusion in many ways.

Transportation planning usually fails in terms of designing stations that may cause difficulty in travelling for people who has limitation of ability. For instance, underground tube station design should avoid stairs and provide step free access. In terms of transportation design itself, going down and up tube stations with buggies, wheelchairs or push chairs may result in emotional and physical distress to travel.

Other concern about public transportation is the design of transport vehicles. Hine and Mitchell (2001a) say that lack of sufficient storage and space in the buses, travelling by bus is

unsuitable for people travelling with luggage or shopping, and women with children who need to travel with buggies. For example, in London more than two buggies are not allowed to get in the busses; therefore, in peak times, women with children have to wait another available bus which is both time consuming and tiring for women physically and emotionally. As a result, due to the inability of carrying all bags and buggies, they are forced to change their travel patterns.

Since the human being is the centre of all notions, the transportation planning need to offer women and men, boys and girls to have equal accessibility and mobility right based on gendered needs of themselves.

### **Sufficiency of public transport and fear of crime**

Barriers such as lack of information, unreliable services and trip chains, poor signing and language problems have also impact on individuals travel patterns. Because of the unreliable or inadequate transport services, women can change their travel preferences due to trip chaining.

Poor access to transport information can also be an obstacle for individuals when they are planning to take a journey or a different route that they are not familiar with, lack of information or poor information of travel services inhibits their travel flexibility. Additionally language is also a barrier for women who are not confident about their local language ability so they are reluctant to talk bus drivers or ask for information to the help desk.

Safety is a critical issue that plays the major role in how people make a decision or react. Racial or sexual harassment of women and the fear of such incidents happen again can

dramatically change individuals particularly women's travel pattern and choice. Lynch and Atkins (1988) said that women's travel behaviour is affected by fear or anxiety. Women will organise and even change their travel pattern. i.e. Not to travel at night, go to home taking longer route, not to go particular places in particular times.

## **CHAPTER 3. CASE STUDY: Empirical analysis of transportation design in London underground**

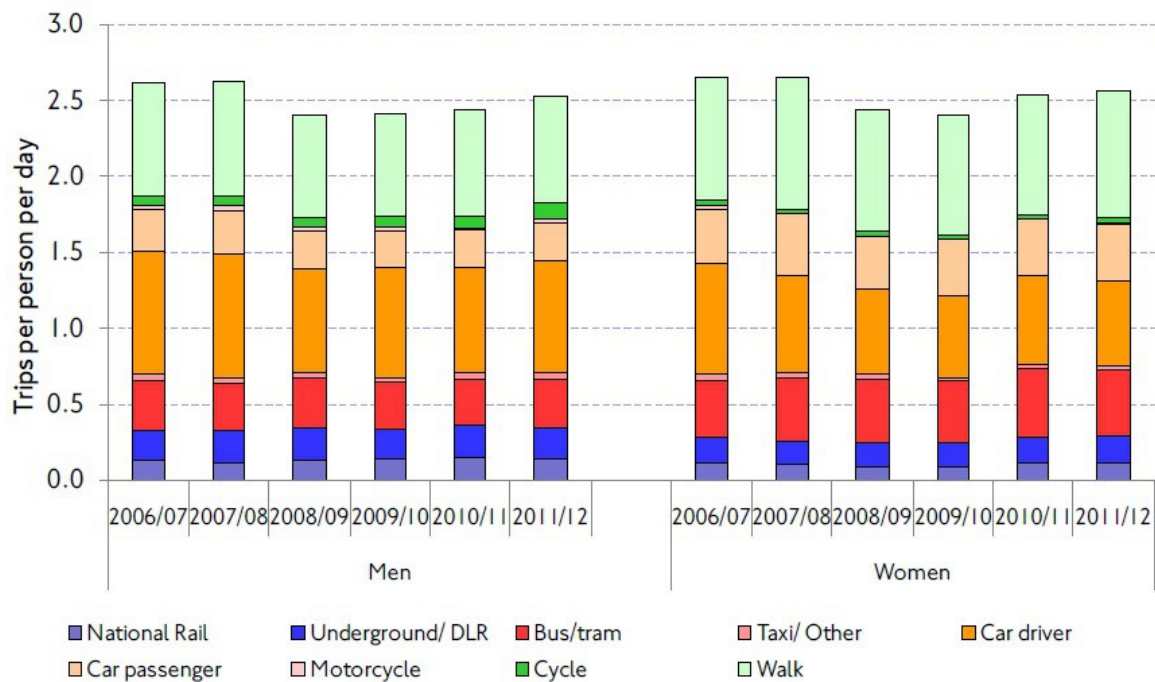
### **3.1. Background of London underground**

London underground is the first and oldest underground railway in the World. It was formed 1985 but its history goes back to 1863. Now, London underground serves 275 stations (Transport for London: History 2013). According to last Transport for London (TfL) Performance Report (2013) London underground trains carried 1.299 billion passengers in the financial year 2012-2013.

#### **Travel behaviour of women and accessibility as an obstacle**

The Understanding the travel needs of London's Diverse Communities report (2012) reveals transport use of women significantly. 51 per cent of London is women and they are generally primary person to take care of the household. Presence or absence of children in the

household and employment status are the major differences between women and men. Although 24 per cent of women are unemployed, the further 13 per cent works part time. Employment rates are also changed based on child dependency. The rate of employment decreases from 78% of women with no children to 22% of women with children. Both these indicators influence the travel behaviour of women in London (Understanding the travel needs of London's diverse communities 2012). For instance, the number of journey of a woman increases 23% based on the presence of children. Likewise trip-chain of women is 25% higher than men because it links to particular purposes. The report also highlights that the number of journey made by women per weekend is greater than men and the major purpose of travel is personal business, shopping and escorting children. When it comes to modes of transport used by women, they are more likely dependent on walking, bus and tube respectively. Figure 1 also analysis travel modes of women and men in London. As it can be seen women are more likely tend to use buses and less-frequent car users. Similarly, women are less underground/DLR users than men. However, this figure is not sufficient to understand gender travel needs in order to generate gender mainstreaming in transport. The mode of transport use is mainly affected by travelling with buggies. Practical issues such as moving buggies to get on and off to transportation, or accessing to transportation itself can be stressful and challenging for women. For instance, trying to get on the tube may be difficult when the absence of lift or escalator. Women feel dependent on people's help to move buggies to and from the tube.



Source: TfL Group Planning, Strategic Analysis.

**Figure** Personal trip rates by gender and main mode of transport ( TfL Report 5, 2012)

According to Gender Equality Scheme (2007-2010) accessibility is the key issue facing by women. The meaning of accessibility involves availability, vehicles, infrastructure and integration of services. Accessibility is significant for women with children in buggies as well as for disabled people.

### 3.2. Methodology

The methodology section requires revealing social connection between public transportation and women through gathering relevant information from blogs, chat rooms and websites. The research aims to shed light on *the role of non-gender related public transport planning in social exclusion of women with children in London* and hopes to raise concern over gender mainstreaming into transportation planning. The research question is emerged from the absence of women' travel needs in the literature of public transportation planning.

The research mainly focuses on design and physical accessibility of public transportation, and the absence of sufficient services effects on social interaction of women with children with the society. This case study hopes to create a correlation between what is on the paper and what is on the ground. This section will describe the research methodology used, explain how data were collected and analysed to answer the research question as well as the strengths and weaknesses of case study approach.

## **Research Method**

The project is rooted in a qualitative research method. The main reason is using this method, as Ritchie and Lewis (2003) point out, it is a naturalistic and interpretive approach, and it mainly focuses on understanding how people attach to the actions, beliefs, decisions within the society. Although there is not only one way to obtain qualitative research, there are certain methods to collect data such as observational method, interview and group discussion, analysis of documentary evidence and narratives (ibid). Another point of view emphasis on what qualitative methods does not includes as Strauss and Corbin's definition indicates: "*By the term "qualitative research" we mean any type of research that produces findings not arrive at by statistical procedures or other means of quantification*" (Strauss and Corbin 1998, p.11: cited in Ritchie and Lewis 2003). As mentioned in the beginning the question itself emphasis on social position of women determined by public transport; therefore, I needed to examine behavioural responses of women to the problem. Therefore the qualitative research method is to answer my research question since it uses words, deals with meanings and has ability to interpret phenomena 'which are simply unavailable elsewhere' and 'one real strength of it can use naturally occurring data to find sequences (how) in which participants' meanings (what) are deployed' (Silverman 2011, p.17 ). On the other data gathered from qualitative method cannot be generalised for everyone, and analysing data is time consuming and can be easily influenced by the research. However, Flyvbjerg (2006)

criticises this idea through giving example of Darwin, Freud, Newton and Bohr experiments that a single case can develop both natural and human sciences.

As a part of qualitative method, data was collected from blogs, chat rooms and websites through reading and interpreting relevant information. During the period it was a passive analysis which is collecting information on websites or reflecting on discussion groups without involving myself. The key reason of using this method is that blogs and websites provide more extensive information and opportunities for social research than diary research (Hookway, 2008). Blogs are public networks, also can be identified as a public space, which enables people to communicate, share and interact with each other and the society anonymously or pseudonymously. With the increasing trends of blogs, chat rooms and websites they take place in academic discourse, hence they are an enormous source of any information. Because of the anonymity, they offered my research naturalistic and more sufficient data, and dialogues I may not be able to do in person. Because the participant of research is consist of women with children and when it comes to conduct a survey or interview face-to-face, they can be shy or not willing to participate. Since participants engage with the social network through pseudonymous blogs and chat rooms, they are not afraid of being exposed and describe problems and their thoughts implicitly. Although, the anonymity of blogs offer equal posting and responding conditions and eliminates difficulties of face-work, it raises concern about play and deception (ibid). It is not certain that whether or not data collected from blogs are trustworthy, the information is true or the participants are not nominating themselves as an someone else. However, it is not also accurate that in any research, participants is trustworthy and engage with the research in an honest manner.

### **Strengths and limitations of the case study approach**

The reason for doing a case study to answer the research question is that the case study approach has the ability to investigate complex social units such as my research based on understanding the variables in relation to social exclusion and transportation phenomenon. As Merriam (2009) points out the main strengths of case study approach is its outcomes are rich and holistic account of a phenomenon, also it expands the reader's experiences because it provides insights and illuminates meanings. She continues adding proven usefulness of case study for social science and policies. Stake (2005) also brings another point by highlighting the researcher's narrative can help readers to understand and learn indirectly by encountering with the case. The case study I conducted can help the shed light on gaps in the literature. As the literature review chapter highlighted women's needs are still not dominated in public transport planning and policy. Therefore, this case study opens one more window for academic and policy discourse to bring women's need in gender discussion.

In the light with this information my case study approach consists of many positive variables that can help the research. First of all data gathered were publicly available and online information. For most participants virtual platform is a public space and anonymity/pseudonymity creates them freedom of speech, particularly women who are not comfortable with speaking in public or to a surveyor/ an interviewer. The information is public domain and as a researcher I saved my time for accessing different information and more participant than I am able to reach women in the field. I did not have to convince women to participate and learn their experience. However, the main concern of a case study was what Guba and Lincoln (1981) highlight ethics of research. A researcher could use data to illustrate personal expectation or easily reflect on personal opinions. Therefore, I needed to be aware of this biases which could certainly affect or even change the final product and outcomes. I also was careful about my position to judge or make certain inference about the needs of women with children since I am not the expert of analysing human interactions.

For further limitations and weaknesses qualitative data analysis is time consuming. I must state that due to limited time and dealing with the short amount of dissertation it was quite difficult to reach/read all blogs/chat rooms and find all women who were experiencing the problem that research question pointed out. Also, the case study involves the issues of trustworthiness, accuracy, reliability and generalizability.

### **Collection and analysis of data**

Data collection was mainly on the internet search to find relevant information through using search engines such as google, bing and yahoo. The key search terms include “mothers, London, public transport, buggies, and difficulties”. The search only focused on blogs, chat rooms and websites which were usually used by women with children and does not require sign in i.e. mumsnet.com, ababyonboard.com. Data collection was comprised a passive blog trawling which means I did not involve any discussions or interact with any participants. Main data were gathered from posts, discussions and personal blogs. Participants were chosen based on the presence or absence of children.

Data for a qualitative research method mainly emerges from the analyst’s notes during the interview, reading documents or in the field (Schutt, 2011). After the collection of participant, written thoughts and discussions, analysing data as well as collection of the data started with simply process of taking notes. Therefore, the first step of data analysis was documentation. Blogs were separated and participants were selected based on the relevancy between what was written and the research question. Discussions in chat rooms were also selected carefully without losing the connection with the research. The narrative method was the main approach to analyse data. As Schutt (2011) explain the key purpose of narrative analysis that it aims to put participant’s experiences or understandings of events in a big

picture and it deals with the stories itself and focus on individuals personal expressions of events.

Table 1 explains inclusion/exclusion criteria of participants' selection. Participants were decided based on the presence of children and using underground to commute.

<b>Inclusion Criteria</b>	<b>Exclusion Criteria</b>
<ul style="list-style-type: none"> <li>• <b>Women</b></li> <li>• <b>London base</b></li> <li>• <b>Presence of children</b></li> <li>• <b>Carrying buggy/pram</b></li> <li>• <b>Underground</b></li> <li>• <b>Absence of private car</b></li> </ul>	<ul style="list-style-type: none"> <li>• Women with no children</li> <li>• Aboveground mode of transport</li> <li>• Women out of London</li> </ul>

**Table .Inclusion/Exclusion Criteria**

Over the research period approximately in order to reach raw data, 50 blogs were read, but only 4 blogs were chosen to engage in research based on relevancy to the research question. i.e. Is it about problems of women with children in public transport? Additionally 100 chat rooms and discussions, under different topics, were read and narrowed down to 9 topics. These topics were about how to carry a buggy in the underground, pushchairs and how to manage escalators and travel with children and women's social and physical problems while commuting with their children. 229 numbers of women were examined among different, but related to each other, discussions and 70 numbers of them were included into analysis for the reason of providing engaged experiences and some participants were excluded because of inapplicable comments and explanations. For example, 30 participants commented about using "sling" rather than using a pram and other 35 participants discussed the comfortableness of using "sling" with a big size baby. Because of the research ethics, participants were given codes and numbers only for myself to analyse and categorise them, and neither their real names nor pseudonyms were used anywhere in the dissertation.

Through the analysis period, key words were constituted based on participant's comments. 82 numbers of key words were listed randomly (see Appendix1). The key words were consisted of adjectives, phrases, nouns and words which describe participants experience in public transportation with a buggy/pushchair and they represented the reflections of participants on public transportation usage. For example, some participants described taking tube with a pram as a "*buggy war*" and "*nightmare*".

### **3.3. Findings**

In the first step, 82 key words were listed and read carefully (see Appendix 1). Afterwards the similar adjectives were bonded together. For instance, 3 participants expressed that while getting down and up to underground, they heavily *relied on people's help* and 10 participants said that they needed "*help*" while carrying a pushchair. These two adjectives were combined and put in a one category. 82 key words were categorised through using this method and put under the 10 numbers of subheadings (see Appendix 2). These subheadings were emotions, physical barriers, baby related concerns, dependency, expressions, suggestions, solutions, criticisms, descriptions and reflections. Due to eliminate repetition and to reach more accurate data these subheadings were also combined, in the second step. Baby related concerns, expressions and reflections were defined as one category which is "***Concerns and Reflection***" because of the relevancy between key words. Suggestions and solutions were put under the "***Personal Solutions***" heading since they dealt with solving problems. Criticisms and descriptions were also binned together under the "***Limitation of Policies and design***" because of the relation to censuring of policies. Dependency and emotions were located under the "***Emotional Disturbance***" and finally all physical barrier key word were listed under "***External Barriers***". To add these explanations key words which share similar meaning and concept were also combined. For example, "stairs, steps and

step free were expressing the steps as a physical barrier; therefore, these 3 key words were noted only “step”. Table 2 explains key words listed for each category.

The main reason of defining key words and reducing them into themes is to create a debate between women’s expressions and the research. This will be examined in the discussion section in more depth.

<b>Emotional Disturbance</b>	<b>Personal Solutions</b>	<b>Concerns&amp; Reflections</b>	<b>Limitations of Policies and Design</b>	<b>External Barriers</b>
<ul style="list-style-type: none"> <li>• <b>Scary</b></li> <li>• <b>Dreading</b></li> <li>• <b>Narked</b></li> <li>• <b>Awkward</b></li> <li>• <b>Terrifying</b></li> <li>• <b>Confident</b></li> <li>• <b>Pain</b></li> <li>• <b>Nightmare</b></li> <li>• <b>Not pleasant</b></li> <li>• <b>Hate</b></li> </ul>	<ul style="list-style-type: none"> <li>• Avoid Tube, especially some tube stations</li> <li>• Avoid tube changes</li> <li>• Avoid rush hour</li> <li>• Plan yourself and</li> </ul>	<ul style="list-style-type: none"> <li>• Balance</li> <li>• Manoeuvre</li> <li>• Careful</li> <li>• Manage</li> <li>• Practice</li> <li>• Poor mum</li> <li>• Banned from life</li> <li>• Buggy war</li> <li>• Difficult</li> </ul>	<ul style="list-style-type: none"> <li>• Human rights</li> <li>• Mercy</li> <li>• Mass transit for city workers</li> <li>• Unreliability on services and</li> </ul>	<ul style="list-style-type: none"> <li>• Escalator</li> <li>• Lift</li> <li>• Steps/steps free</li> <li>• Dangerous</li> <li>• Child-unfriendly</li> <li>• Design and disabled access</li> </ul>

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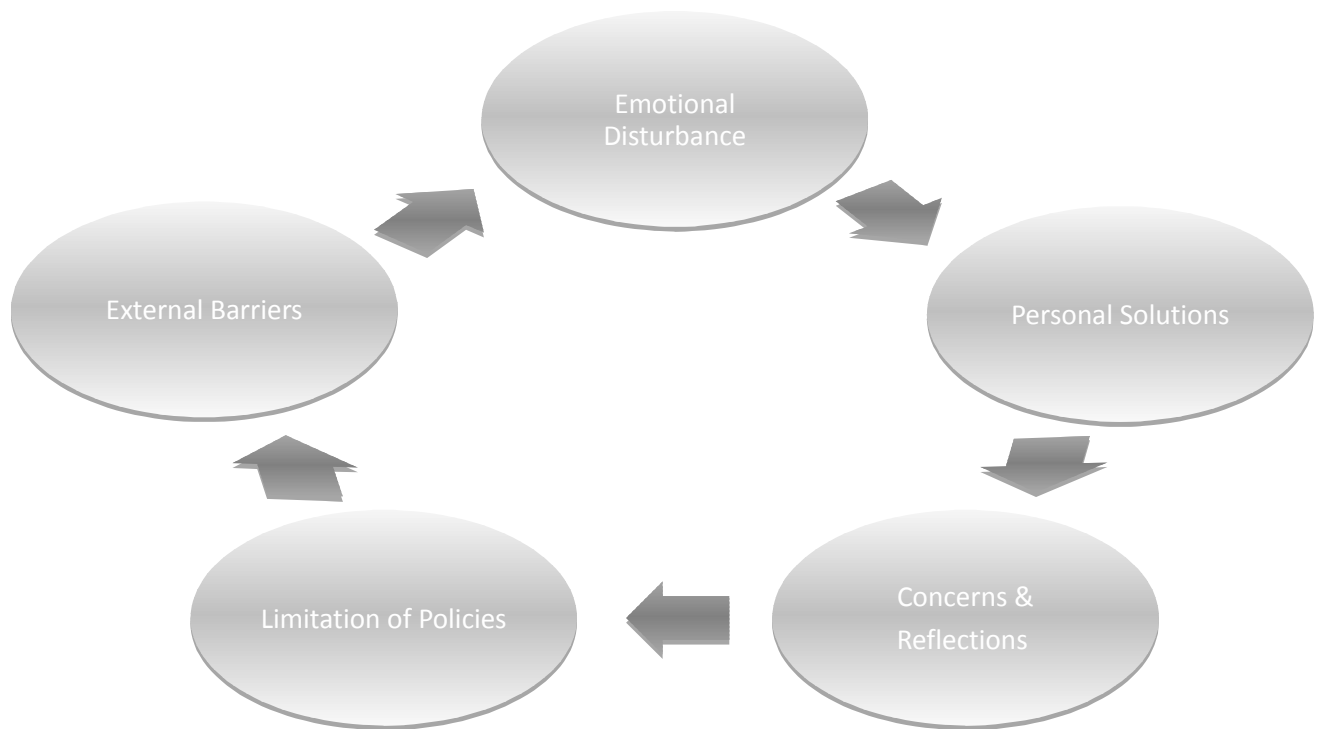
• <b>Unwillingness</b>	journey	• Unsafely	facilities	•
• <b>Nerve-wracking</b>	• Chose tube line	• Chance of metal	• Limited	
• <b>Stress</b>	carefully		• Gender differentiation	
• <b>Alone</b>	• Negotiate		• Complexity	
• <b>Struggle</b>	• Timing		• Accessibility	
• <b>Worse</b>				
• <b>Rely on help</b>				

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**Table .**Key words under each category

### 3.4. Discussions

As it can be seen in figure 2 there is a significant correlation between each category and each category has effect on the other. “*Limitation of policies*” and “*External Barriers*” are the start point which leads to other discussions. For instance, Participant 68 made it clear that in her blog (parentdish.co.uk) that she was *banned* from public transport because of *child-unfriendly design*. She also underlined *inaccessibility* of tube stations due to presence of many *stairs*. She described herself as a *pity and a poor mum who is struggling to carry a buggy*. The consequence of these she felt to be left alone. Participant 71 believed that she depended on *the mercy or the capital’s public transport* (ababyonboard.com) and Participant 31 thought tube stations were designed for *city workers* not for *minority groups* (mumsnet.com). Although the literature on transportation includes women’s need in discussion, it does not talk about the exclusionary side of transport design in terms of emotional and social. Participant 69 expressed her thought strongly in her blog (thevervelife.com) by saying the restriction of women’s travel ability, not for only women with children but also disabled women, was a *violation of their human rights*.



**Figure .The Relation of Categories**

The underlying reason of all these criticisms and expressions are “*External Barriers*”. Almost all participants indicated that because of the presence of stairs in tube stations, and if there is no lift service, their ability to travel with children was limited. And the way of expression their “*Emotional Disturbance*” underlines women’s social exclusion concept. This theme has more weight than the other since containing most key words within it (refer to table 2). Each participant at least gave one key word which was explaining how they felt about when they used the tube with a pram a little baby in it. For example, Participant 27 in mumsnet.com expressed her feelings in a discussion by saying tube design was not for parent or buggy friendly and defined barriers as a “*nightmare*”. This key word was repeated for 7 times by different participants (see Appendix1 for repeated key words). Participant 48 signified her thought as a mathematic formula: *buggy + tube equal a nightmare*. Participant 73 in mumsnet.com also indicated that going down and up with a pram in a tube station was a “*nightmare*”. Almost all participants’ concern was about not only themselves but also generally about their baby. Because of unsafe tube access they were not willing to take a tube

journey with the baby; however, Participant 50 in mumsnet.com said that if she did not take tube up and down escalators, they *would not be able* to go anywhere and Participant 65 agreed with her by saying that she was taking tube regularly otherwise she would have gone *mad*. This expression indicated that women mainly rely on public transport and its reliability determines women's mobility. Although participants emphasised on the *presence of stairs*, they were also *not willing* to use escalators because they were afraid of safety of the baby. Additionally, they did not trust function of lifts as well. Participant 21 in mumsnet.com answered a question about escalators by expressing take a buggy on to escalators *terrifying*. If they had to use the specific station which has stairs they always *relied on people' and tube staffs' help* which was not a *pleasant* moment for them. As Participant 44 in mumsnet.com said that she usually *avoided being in the tube station* in her area because she believed that helping her was not anybody's responsibility, but she had no choice. Dependency on people was the main obstacle for participants in terms of planning their journey. These results so far lead us to one important step that whether or not the presence of facilities such as lift or escalator does not make a tube station accessible for women with children.

These "*Emotional Disturbance*" result in women's "*Personal Solutions*". It can be said that all participants were aware of their environment and situation. Hence, they tended to plan their journey and *avoid specific tube stations* as well as *rush hours*. Participant 35 in mumsnet.com highlighted that in *busy times* getting in a tube with a pram was a *pain* and she had to *rely on help*. Participant 36 responded this comment by indicating that they must plan their journey and use the underground map to learn which is step free access. However, Participant 13 and 14 in mumsnet.com said that the underground map which shows step free access were *limited and tricky to read*. To add this discussion, Participant 62 in mumsnet.com expressed that the underground map shows which one is step free but does not includes station which has a few steps i.e. Russell Square. Hamilton (2002) also mentioned

that women prefer travel at off-peak times and although planning the journey, avoiding tube and rush hour seem to be a solution for women, it is also clear that they cannot always plan their journey. What if a woman lives close to a particular tube station which has too many steps? Or as Participant 69 phrased her concern about *disabled women* who want to go Oxford Street and entitled this as a “*violation of human right*”. Participant 32 in mumsnet.com also agreed with this idea that tube stations were not designed *disabled in mind*. Participant 70 in curiousmum.co.uk gave voice on the *challenging* environment of London underground and necessity of being able *manoeuvre a buggy*. Participant 66 words are supporting this issue since she thought she would win a *metal*, if taking buggy into a tube station was an Olympic game.

The key out come from all these conversations emphasises on “*External Barriers*” which was the main reasons of all concerns and emotional disturbance. Women think that no matter how tube transportation services provide readable maps and information, the most important issue for them the design of tube stations. Not only presence of stair but also using escalator is terrifying because it endangers the baby. They have difficult in taking pram up and down in the tube station without lift. Women also do not consider escalator as a solution to absence of lift since the baby might fall down from inside of the pram. They are also aware of that physical barrier also restrict disabled women’s life. In general all participants agree on if all tube stations could design disabled people in mind, accessibility issue would not be a problem for anyone. The main conclusion here can be: women feel *emotionally and physically excluded* from city life after childbirth, due to lack of disabled-friendly or child-unfriendly design in tube stations. Hamilton (2002) also talks about emotional effects of limited transportation on women through underlying that women feel stress and emotionally exhausted after waiting for long time for buses or lack of any public transport facilities. Church et. al. (1999, 2000) discuss seven categories of social exclusion and one of them is

physical exclusion but they did explain it from emotional perspective in detail. This conclusion can also be supported by information gathered TfL website. As mention in background information previous section, women are less likely to use tube as a mode of transport because of the barriers and numbers of trip chain. Many participants indicated that if they had to change tube line more than one the best option was to avoid particular tube stations which has man stairs or if it is possible changing underground transport mode to any above-mode of public transport. However, Hine and Mitchell (2001) said that women are not willing to make trip chain due to lack of public transportation accessibility.

This case study can be supported by the similar research conducted by Hine and Mitchell (2001). They also concluded that transportation can result in many forms which, as Church et al. 1999 suggested, physical, economic, spatial and psychological. Hine and Mitchell (2001) also added that many different groups experience transportation disadvantages; therefore, accessible design of tube station needs to be put the centre of policy and planning.

Yet, the literature of women and transport reviewed so far does not particularly raise voice on women's emotional disturbance about lack of transport design. Problems considered by the literature are largely about accessibility to public services, safety, services, sufficiency, having women in the transport employment area or even disability guidelines which only suggest planning the journey. For instance, the TfL Assistance for Disabled Customers document (available online in the TfL website) advises people to read step free guideline and ask for help from the tube staff which women are already aware of. Social Exclusion Unit (2002) considered accessibility as a facilitator rather than social connection.

Various questions emerged from this study: "how to measure accessibility of a tube station?" or "in what extend accessibility needs to be defined?" My key point is in this study is "sufficient definition of accessibility and exclusion". As Hine and Mitchell (2003)

highlighted without the clearer definition of these two issues, the problem of exclusion in transportation will continue to rise.

## **CHAPTER 4. CONCLUSION AND RECOMMENDATION**

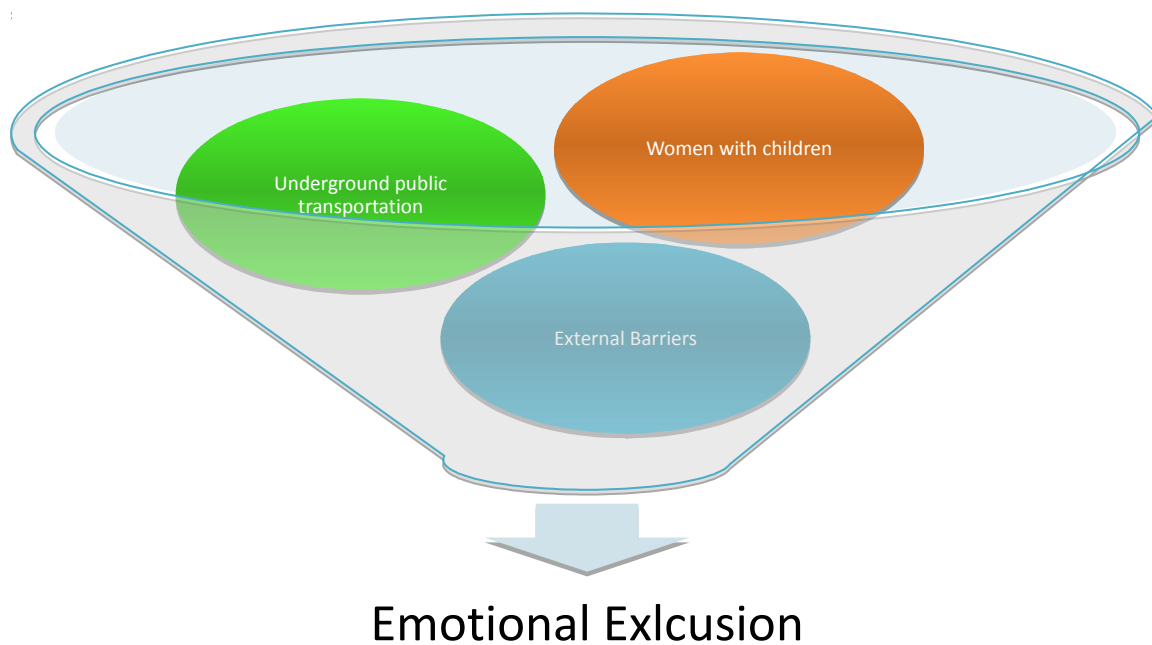
### **4.1. Approach of the study**

Women are located in the centre of intersection of transportation and social exclusion due to overlooking of women's travel needs which are directly influenced by women's multiple roles i.e. productive and reproductive roles. They need to manage shopping, escort children to education facilities and go to work. The effect of women's multiple roles on transportation varies from income level to culture, from rural to urban areas or even from religion to minority groups. For instance, high income women have accessibility to private car and a driving licence hence public transportation is not an issue for them. However, many women in rural areas have to manage household activities and be the responsible for caring the house. Without sufficient public transport they are less able to seek a job or escort children to school or even access any social facilities; therefore, women are considered one of socially excluded groups.

This paper stands three main pillar contexts: transportation, exclusion and gender. The main discussion comes out of the intersection of these three areas. Although, many aspects of transport have impact on women's travel behaviour, in this study the design of transportation is considered as a main barrier which raises social exclusion of women with children. The discussion in this study is that women with children face with physical barriers in tube stations such as the presence of stairs causes unwillingness to go out. Travelling with a buggy is difficult to manage by only one person in London underground so women usually need help to carry buggy up and down to the tube station. This case can be exacerbated by the presence of more than one child. Pushing a twin buggy through stairs or even escalators is not

the first option for women. This dilemma is the key factor that brings out social exclusion in women's context.

In order to unpack the social exclusion concept, this study is carried out in two steps. Firstly, the literature about transportation, social exclusion and women has been reviewed and produced a debate between these three areas. The key discussion is how transport design can affect women with children travel with public transportation. In order to reveal this question and create a debate with the literature, the case study focuses on travel behaviours of women with children in London.



**Figure .**The outcome of case study

The concepts of social exclusion define various versions; however, the main conclusion emerges from this case study emphasis on women's emotionally social exclusion caused by lack of disabled unfriendly transportation design (see Figure 3). The reason of indicating social exclusion in terms of emotional perspective is that all participants in this study

expressed their feelings when they have to travel with tube. Because of the lack of child-unfriendly design, women need to plan their journey if it is not applicable rely on people's help. Based on participants' experiences, it can be said that not being able to travel on their own with their baby and dependency on other people's help increases in level of stress and anxiety in women. Therefore, the case study is concluded that women can be emotionally excluded from society.

This term can be the key point or key reason of why women are not eager to join the society. For women who do not have a private car, depend on public transport and if it is not well designed buggy-friendly or disabled friendly, they also depend on help. Dependency makes women feel uncomfortable, pity and stress. The strongest feeling stated by participants to describe this situation was "hate".

This case study helped to understand the role of non-gender related public transportation in women's social exclusion by raising this debate. Despite of the all these facts it also has to be noted that London underground was built in an era ago when accessibility was not considered in the stations.

#### **4.2. Recommendations for future study**

This study has revealed that there might be a gap in the literature in terms of addressing women's travel needs in public transportation in design context. In order to create gender mainstreaming in transportation, understanding women's travel needs in sufficient details is the first crucial step. This case study showed us that the meaning of accessibility can be defined differently by women with children; therefore, the definitions of accessibility and travel needs have to be explained in details. There should be also many indicators to define and measure social exclusion in transportation or vice versa. Finally, women are also needs to be categorised based on income level, living conditions and cultural context.

## BIBLIOGRAPHY

Allen, H. 2002, 'Best practices in encouraging gender diversity in the public transport profession:' the first UITP seminar for the DIVE-in Initiative – a new UITP platform looking at greater diversity in the public transport profession

Barry, B. 2002 'Social exclusion, social Isolation and the distribution of Income', Ch.2 in Hills, Le Grand and Piachaund (2002)

Beall, J. 1992, 'Integrating the gender variable into urban development: a conceptual and operational framework for assistance to urban areas', paper presented at the Urban Development Meeting of the Development Assistance Committee of OECD

Bryceson, D F & Howe, J. 1992, 'African rural households and transport: Reducing the burden of women?', *IHE Working Paper* IP-2.

Burchardt,T., Le Grand,J. and Piachaud,D. 1999, "Social Exclusion in Britain 1991-1995", *Social Policy and Administration*, Vol.33, No. 3, p.227-44

Bureau of Labour Statistic 2013, "Women in the Labour force: A Data book, Report 1040. Retrieved on 5<sup>th</sup> July 2013 from [www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CC0QFjAA&url=http%3A%2F%2Fwww.bls.gov%2Fcps%2Fwlf-databook-2012.pdf&ei=eEYdUt-JI4yg0wWykIDADQ&usg=AFQjCNFAdHHfm9iGR\\_qw5dFjB96MYEVZOw&bvm=bv.51156542,d.d2k](http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CC0QFjAA&url=http%3A%2F%2Fwww.bls.gov%2Fcps%2Fwlf-databook-2012.pdf&ei=eEYdUt-JI4yg0wWykIDADQ&usg=AFQjCNFAdHHfm9iGR_qw5dFjB96MYEVZOw&bvm=bv.51156542,d.d2k)

Church, A. & Frost, M. 1999, 'Transport and Social Exclusion in London report Summary London', *London Transport Planning*, London

Church, A., Frost,M. & Sullivan,K. 2000, 'Transport and Social exclusion in London: Report summary', *London Transport Planning*, London. Retrieved on 4<sup>th</sup> July from [http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CC8QFjAA&url=http%3A%2F%2Fwww.its.leeds.ac.uk%2Fprojects%2FMobileNetwork%2Fdownloads%2Ftransport\\_policy.pdf&ei=WN0dUvuoFOuR1AXMoYHAAQ&usg=AFQjCNGoZ8p6AfNuMYU7RQtOX5vld\\_t0SA&bvm=bv.51156542,d.d2k](http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CC8QFjAA&url=http%3A%2F%2Fwww.its.leeds.ac.uk%2Fprojects%2FMobileNetwork%2Fdownloads%2Ftransport_policy.pdf&ei=WN0dUvuoFOuR1AXMoYHAAQ&usg=AFQjCNGoZ8p6AfNuMYU7RQtOX5vld_t0SA&bvm=bv.51156542,d.d2k)

Fadda,G. & Jiron,P. 1999, 'Quality of life and gender: a methodology for urban research', *Environment and Urbanisation*, 11:261

Flyvberg, B. 2006, 'Five misunderstandings about case-study research', *Qualitative Inquiry*, 12(2), 219-245.

Gaffron, P., Hine, J. P. & Mitchell, F. 2001, 'The Role of Transport on Social Exclusion in urban Scotland: Literature Review', *Central Research Unit*, Scottish Executive.

Gender Equality Scheme 2007-2010, *Transport for London*. Retrieved on 3th August from [http://www.google.co.uk/url?sa=t&ret=j&q=&esrc=s&source=web&cd=2&ved=0CDQQFjAB&url=http%3A%2F%2Fwww.tfl.gov.uk%2Fassets%2Fdownloads%2FGender\\_Equality\\_Scheme\\_2007-2010.pdf&ei=2EwdUvHpOtC20QXgjIGQCA&usg=AFQjCNHVk4AqrM\\_0CCwHPn\\_obZ8rXKT82g&bvm=bv.51156542,d.d2k](http://www.google.co.uk/url?sa=t&ret=j&q=&esrc=s&source=web&cd=2&ved=0CDQQFjAB&url=http%3A%2F%2Fwww.tfl.gov.uk%2Fassets%2Fdownloads%2FGender_Equality_Scheme_2007-2010.pdf&ei=2EwdUvHpOtC20QXgjIGQCA&usg=AFQjCNHVk4AqrM_0CCwHPn_obZ8rXKT82g&bvm=bv.51156542,d.d2k)

Grieco, M.S 1986, 'Public transport requirements and the surrey Docks area', *Transport Studies Unit*, University of Oxford, Working Paper 363.

Griceco,M. Pickup, L.& Whipp, R. 1989, 'Gender, Transport and Employments, Gower, Aldershot'

Guba, E., & Lincoln, Y. 1981, 'Effective evaluation', *San Francisco: Jossey-Bass*

Hamilton,K. & Jenkins,L. 2005, 'Promoting Gender equality in transport', *Working Paper series*. No.34

Hamilton, K., Hoyle, S.R. and Jenkins, L. 2000, 'The Public Transport Gender Audit', *TSO*. London.

Hamilton, K. & Jenkins, L. 1992, 'Women and transport', in Roberts, J et al. (eds), *Travel Sickness*, Lawrence and Wishart, London

Hamilton, K. 2002, 'Gender and transport in developed countries', *University of East London*. UK

Hasson, Y. & Polevoy, M. 2011, 'Gender Equality Initiatives in Transportation Policy: A Review of Literature'

Hine, J. & Mitchell, F. 2001, 'Better for Everyone? Travel Experiences and Transport Exclusion', *Urban Studies*. Vol. 38, No.2, p. 319-322.

Hine, J. & Mitchell, F. 2001b, 'Better for Everyone? Travel Experiences and Transport Exclusion', *Urban Studies*. Vol. 38, No.2, p. 319-322.

Hine, J. & Mitchell, F. 2003, 'Transport disadvantage and social exclusion: Exclusionary mechanism in transport in urban Scotland', York

Hookway, H. 2008, 'Entering the blogosphere: some strategies for using blogs in social research', *Sage publications*. Vol.8 (1) 91-113. Retrieved on 3<sup>rd</sup> August from <http://www.uk.sagepub.com/jamesandbusher/HOOKWAY.pdf>

Kenyon, S., Lyons, G. & Rafferty, J. 2002, 'Transport and Social Exclusion: Investigating the Possibility of promoting Inclusion through Virtual Mobility', *Journal of transport Geography*. Vol. 10, pp 207-209.

Kunieda, M. & Gauthier, A. 2007, 'Gender and Urban transport: Smart and affordable', *Environment and Infrastructure*. Division 44.

Lee, P. & Murie, A.D. 1999, 'Literature Review of Social Exclusion', *Central Research Unit*, Edinburgh

LEVY, C. 1991, 'Gender and Third World Development; Module 5--Towards Gender-Aware Provision of Urban Transport', *Institute of Development Studies*, Brighton, U.K.

Levy C. 1992, 'Gender and the environment: the challenge of cross-cutting issues in development policy and planning', *Environment and Urbanization*, Vol.4, No.1, pages 134-150.

Levy,C. 2013, 'Travel choice reframed: deep distribution and gender in urban transport', *Environment and urbanisation*. Vol. 25 no. 1 47-63

Litman,T., 2006, 'Evaluating Transportation Equity: Guidance for Incorporating Distributional Impacts in Transportation Planning', VTPI. Retrieved on 25<sup>th</sup> June 2013 from <http://www.vtpi.org/equity.pdf>

Loukaitou-Sideris, A. & C. Fink 2009,'Addressing women's fear of victimization in transportation settings: A survey of US transit agencies', *Urban Affairs Review* 44(4): 554–587

Lucas, K. 2002, 'Transport and social exclusion: The UK perspective, Cities on the move transport seminar', France

Lynch,G., & Atkins,S. 1998 "The influence of personal security fears on women's travel patterns", *Transportation* 15:257-77

Mashiri,M. , Buiten, D., Mahapa, S. & Zukulu, R. 2005. "Towards setting a research agenda around mainstreaming gender in the transport sector" *Document transportation technologies*

Merriam, S. 2009, 'Qualitative Case Study Research in the book Qualitative Research: A Guide to Design and Implementation', San Francisco, CA 94103-1741

Peters, D. 2013, 'Gender and Sustainable Urban Mobility, Thematic study prepared for Sustainable Urban Mobility: Global Report on Human Settlements'. Retrieved on 6<sup>th</sup> July from [http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CC8QFjAA&url=http%3A%2F%2Fwww.toronto.ca%2Flegdocs%2Fmmis%2F2012%2Fcc%2Fbgrd%2FCC20\\_1\\_app3\\_24.pdf&ei=3-EdUuKTMei80QW-gIHQCg&usg=AFQjCNEfZKG3xwNI6xqmu0V72WQpVBAJgQ&sig2=YwS1R\\_EcsjYGRWkNis5dFg&bvm=bv.51156542,d.d2k](http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CC8QFjAA&url=http%3A%2F%2Fwww.toronto.ca%2Flegdocs%2Fmmis%2F2012%2Fcc%2Fbgrd%2FCC20_1_app3_24.pdf&ei=3-EdUuKTMei80QW-gIHQCg&usg=AFQjCNEfZKG3xwNI6xqmu0V72WQpVBAJgQ&sig2=YwS1R_EcsjYGRWkNis5dFg&bvm=bv.51156542,d.d2k)

Ritchie, J. & Lewis, J. 2003, 'Qualitative research practice: A guide for Social Science Students and Researchers'. Retrieved on 10<sup>th</sup> July from <http://books.google.co.uk/books?hl=en&lr=&id=z5y0LCT8YNUC&oi=fnd&pg=PA24&dq=qualitative+methods+in+social+research&ots=q2fVGeK5H0&sig=r1SjfrMUR8PUBQVS2CydXsyw-2g#v=onepage&q=qualitative%20methods%20in%20social%20research&f=false>

Rosenbloom, S. 1989, 'The impact of growing children on their parents' travel behaviour: a comparative analysis', *Transportation Research Record*.

Rosenbloom, S. 1989, 'Trip chaining behaviour: a comparative and cross cultural analysis of the travel patterns of working mothers', *Gender, Transport and Employment*, edited by M. Grieco, L. Pickup and R. Whipp (Aldershot, U.K.: Avebury).

Schutt, R. K. 2011, 'Investigating the social world: The Process and Practice of Research, 7<sup>th</sup> ed.', Thousand Oaks, CA: SAGE Publications.

Small, A.K. & Gomez-Ibanez, J. 1999, 'Urban Transportation', *Handbook of Regional and Urban Economics*. Chapter 46.

Silverman, D. 2011, 'Interpreting Qualitative Data: Fourth Edition', *Sage Publications*. Retrieved on 1<sup>st</sup> August from <http://books.google.co.uk/books?hl=en&lr=&id=gRKCIfyEsdEC&oi=fnd&pg=PP2&dq=Silverman,+D.+%282001%29+Interpreting+Qualitative+Data:+Methods+for+Analysing+Talk,+Text,+and+Interaction.+London:+Sage+Publications.&ots=kCrS7JZBV3&sig=1r2jUBw6YMUd9V14V7wsrOk1c4I#v=onepage&q&f=false>

Social Exclusion Unit 2003 'Making the connections: Final Report on Transport and Social Exclusion', *Office Of Deputy Prime Minister*. Retrieved on 5<sup>th</sup> June 2013 from <http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CC8QFjAA&url=http%3A%2F%2Fassets.dft.gov.uk%2Fstatistics%2Fseries%2Faccessibility%2Fmaking-the-connections.pdf&ei=TkQdUrLmN6OG0AWrxYHgDw&usg=AFQjCNHWk1k6uAuZBHggJs5WKqm2jDt0g&bvm=bv.51156542,d.d2k>

Stake, R.E. 2005, 'Quantitative case studies' in N.K. Denzin & Y.S. Lincoln (Eds.) *The Sage handbook of qualitative research*, 3<sup>rd</sup> ed., p. 443-466

Strauss, A. & Corbin, J. 1998, 'Basics of Qualitative Research Thousand Oaks, CA', *Sage Publications*.

Transport for London, 2013, 'History',  
<http://www.tfl.gov.uk/corporate/modesoftransport/londonunderground/1604.aspx> ,(accessed 7 August 2013)

Transport for London Performance report: Period 1 April-27 April 2013. Retrieved on 7<sup>th</sup> August from <http://www.tfl.gov.uk/assets/downloads/lu-performance-report-period-1-2013-14.pdf>

Transport for London Report 5: Travel in London 2012. Retrieved on 6<sup>th</sup> August from <http://www.tfl.gov.uk/assets/downloads/corporate/travel-in-london-report-5.pdf>

Turner, J. & Fouracre, P. 1995, 'Women and transport in developing countries', *Transport Reviews*. Vol.15. No.1, 77-96

Tyler, N. 2002, 'Accessibility and the bus system: Concepts to practice Avebury', Newcastle-upon-Tyne.

Understanding the travel needs of London' diverse communities 2012, *Transport for London*. Retrieved on 6<sup>th</sup> August from <http://www.tfl.gov.uk/assets/downloads/corporate/travel-needs-of-london-communities.pdf>

Wixey, S., Jones, P., Lucas, K. & Aldridge, A . 2005, 'Measuring Accessibility as Experienced by Different Socially Disadvantaged Groups', University of Westminster

Wachs, Martin. 1996, 'Chapter 6: e Automobile and Gender: An Historical Perspective Chapter 6 in Proceedings from the Second National Conference in October 1996'. *US Department of Transportation, Federal Highway Administration, Office of Highway Information Management, HPM-40*

Young, I.M 2001, 'Equality of Whom? Social Groups and Judgments of Injustice', *Journal of Political Philosophy*, Vol.9, issue 1, p. 1–18

### **Websites**

<http://www.ababyonboard.com/how-to-travel-by-public-transport-in-london-with-a-baby/>

<http://curiousmum.co.uk/meet/mumderground>

<http://www.endviolenceagainstwomen.org.uk/news/20/4-in-10-young-women-in-london-sexually-harassed-over-last-year>

[www.mumsnet.com](http://www.mumsnet.com)

<http://www.parentdish.co.uk/2010/12/09/buggy-wars-why-is-it-so-difficult-to-take-public-transport-with-kids/>

<http://www.thevervelife.com/travelling-with-a-buggy-mind-the-gap/>

<http://www.parentdish.co.uk/2010/02/18/the-problem-with-prams/>

## APPENDIX

### Appendix 1. The list of key words

<ol style="list-style-type: none"><li>1. Difficult.</li><li>2. Manage</li><li>3. <b>Sling(6 times repeated)</b></li><li>4. Buggy</li><li>5. Scared</li><li>6. Escalator</li><li>7. Avoid tube changes</li><li>8. Avoid tube.</li><li>9. <b>Avoid rush hour (7times)</b></li><li>10. Dreading.</li><li>11. <b>Lift (8 times repeated)</b></li><li>12. Narked</li><li>13. Lack of access</li><li>14. Avoid stairs</li><li>15. Limited</li><li>16. Map</li><li>17. Tricky to read</li><li>18. Awkward</li><li>19. <b>Step free(4 times repeated)</b></li><li>20. Would not consider using tube</li><li>21. Chose tube line carefully.</li><li>22. <b>Plan your journey(4 times repeated)</b></li><li>23. Terrifying</li><li>24. Confident</li><li>25. <b>Pain(4 times repeated)</b></li><li>26. <b>Help (5 times repeated)</b></li><li>27. Ask for help</li><li>28. <b>Rely on help( 3times repeated)</b></li><li>29. <b>Steps( 3 times repeated)</b></li><li>30. <b>Practice(2 times repeated)</b></li><li>31. <b>Nightmare (7 times repeated)</b></li><li>32. <b>Barrier ( 2times repeated)</b></li><li>33. <b>Stairs(3 times repeated)</b></li><li>34. Horror</li><li>35. <b>Design(3 times repeated)</b></li><li>36. <b>Escalator( 3 times repeated)</b></li><li>37. Disabled access</li><li>38. <b>Stressful(2 times repeated)</b></li><li>39. Not Pleasant</li><li>40. <b>Dangerous( 2 times repeated)</b></li><li>41. Minority groups</li></ol>	<ol style="list-style-type: none"><li>42. <b>Struggle ( 2 times repeated)</b></li><li>43. <b>Balance ( 2 times repeated)</b></li><li>44. Could not go anywhere</li><li>45. Hate</li><li>46. Negotiate</li><li>47. <b>Taking different public transport mode ( 2 times repeated)</b></li><li>48. <b>Unwillingness ( 3 times repeated)</b></li><li>49. Scary</li><li>50. Timing</li><li>51. <b>Worse ( 2 times repeated)</b></li><li>52. Gender differentiation</li><li>53. Worst accessible</li><li>54. Nerve-wracking</li><li>55. Unreliability of TfL maps</li><li>56. Unreliability of services</li><li>57. Unsafely</li><li>58. Cowardly</li><li>59. Avoid Kings cross tube station</li><li>60. <b>Avoid Victoria tube station( 3 times repeated)</b></li><li>61. Avoid tube changes at Holborn tube station</li><li>62. Avoid tube changes</li><li>63. <b>Alone( 2 times repeated)</b></li><li>64. Madness</li><li>65. Chance of metal</li><li>66. Tricky</li><li>67. Banned</li><li>68. Child-unfriendly</li><li>69. <b>Complex( 2 times repeated)</b></li><li>70. Not accessible</li><li>71. Pity</li><li>72. Poor mum</li><li>73. To be left</li><li>74. Buggy war</li><li>75. Decipher</li><li>76. Violation of human rights</li><li>77. Disabled women</li><li>78. Travel hell</li><li>79. Challenging</li><li>80. Manoeuvre</li><li>81. Mercy of capital's public transport</li><li>82. Mass transit for only city workers</li></ol>
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## Appendix 2. The subheadings of key words

Emotions	Physical Barriers	Baby-related concerns	Dependency	Expressions
<ul style="list-style-type: none"> <li>• Scared</li> <li>• Dreading</li> <li>• Narked</li> <li>• Awkward</li> <li>• Terrifying</li> <li>• Confident</li> <li>• Pain</li> <li>• Nightmare</li> <li>• Horror</li> <li>• Not pleasant</li> <li>• Hate</li> <li>• Scary</li> <li>• Unwillingness</li> <li>• Nerve-wracking</li> <li>• Cowardly</li> <li>• Madness</li> <li>• Alone</li> <li>• Struggle</li> <li>• Pain</li> <li>• Worse</li> <li>• Stressful</li> </ul>	<ul style="list-style-type: none"> <li>• Barrier</li> <li>• Stairs</li> <li>• Design</li> <li>• Escalator</li> <li>• Disabled access</li> <li>• Not accessible</li> <li>• Lack of access</li> <li>• Steps</li> <li>• Lift</li> <li>• Step free</li> </ul>	<ul style="list-style-type: none"> <li>• Sling</li> <li>• Buggy</li> <li>• Dangerous</li> <li>• Unsafely</li> <li>• Child-unfriendly</li> <li>• Balance</li> <li>• Decipher</li> <li>• Tricky</li> </ul>	<ul style="list-style-type: none"> <li>• Help</li> <li>• Ask for help</li> <li>• Rely on help</li> <li>• Negotiate</li> </ul>	<ul style="list-style-type: none"> <li>• Chance of metal</li> <li>• Buggy war</li> <li>• Manoeuvre</li> <li>• Practice</li> <li>• Manage</li> <li>• Difficult</li> </ul>

<b>Suggestions</b>	<b>Solutions</b>	<b>Criticisms</b>	<b>Descriptions</b>	<b>Reflections</b>
<ul style="list-style-type: none"> <li>• <b>Avoid stairs</b></li> <li>• <b>Avoid tube changes</b></li> <li>• <b>Avoid rush hour</b></li> <li>• <b>Avoid king's Cross Station</b></li> <li>• <b>Avoid tube changes at Holborn station</b></li> <li>• <b>Avoid Victoria Station</b></li> <li>• <b>Would not consider tube</b></li> </ul>	<ul style="list-style-type: none"> <li>• Chose tube line carefully</li> <li>• Plan your journey</li> <li>• Taking different public transport mode</li> <li>• Timing</li> </ul>	<ul style="list-style-type: none"> <li>• Minority groups</li> <li>• Gender differentiation</li> <li>• Violation of human rights</li> <li>• Disabled women</li> <li>• Mercy of capitals public transport</li> <li>• Mass transport for only city workers</li> <li>• Disabled access</li> </ul>	<ul style="list-style-type: none"> <li>• Worst accessible</li> <li>• Limited</li> <li>• Complex</li> <li>• Map</li> <li>• Tricky to read</li> <li>• Unreliability of TfL maps</li> <li>• Unreliability of services</li> </ul>	<ul style="list-style-type: none"> <li>• Banned</li> <li>• Poor mum</li> <li>• To be left</li> <li>• Pity</li> <li>• Travel hell</li> <li>• Could not go anywhere</li> <li>• Challenging</li> </ul>