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TRANSPORT EXCLUSION OF SUBURBAN MOTHERS: A CRITICAL REVIEW

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Transport exclusion of suburban mothers: A critical review

Suburban mothers have a special position when facing transport disadvantages, since they are both socially expected to fulfil their gender roles and are limited while travelling due to morphological structures and transport conditions of their neighbourhoods. Today's suburbia faces trends in society that were not present in the Fordist era. It also reflects various characteristics of the countries in which it operates. They are often different from traditional American suburbs. The aim of the paper is to provide a systematic review pertaining to the transport exclusion of suburban mothers consisting of two levels: a general overview of wider connections and contexts related to the topic; and a critical review of studies focusing specifically on suburban mothers and their transport behaviour and/or exclusion. This review adds to the literature by identifying research gaps and limitations of analysed papers, introducing possible future directions of the research, and proposing a concrete steps for how to design future studies differently to obtain findings reflecting the current social setting. Future research should consider not only the transport-related decision-making processes of mothers, but also their value orientations and new trends in a society (e. g. the home office era and changing views on the family arrangements), all of these using a combination of quantitative and qualitative data while not omitting any travel modes or socio-economic classes of mothers.

Key words: disadvantage, mobility, gender, mothers, suburbia, review

INTRODUCTION

In the traditionally suburban environment of the USA, job opportunities emerged alongside services and facilities. Residents of central cities there have been shown often to be disadvantaged when commuting to the suburbs for work (Preston et al. 1993). However, this is not the case for new or smaller suburbs, where the housing function is often the only one, and most out-of-home activities need to be carried out in distant central cities, which leads to residents' transport disadvantage. Typical examples include the suburbs of Central and Eastern Europe (e. g. Hirt 2008 and Sveda and Barlík 2018). Moreover, regardless of the country or region of a suburb, when accessing destinations, the low density of suburban builtup areas leads to longer distances and travel times. This, together with the lack of public transport, is linked to the need to own and use a car. However, this may be difficult for some. Suburban women, and especially mothers, have a special position when facing a transport disadvantage, since they not only need to navigate their own lives as individuals, but also are socially expected to fulfil their gender roles as wives and mothers 'properly'. Research to date has shown that family care leads to more space-time fixity and activity fragmentation (Shen et al. 2015 and McBride et al. 2020), which, together with the physical and social environment of suburbia, pose additional obstacles to mothers' travel routines. Importantly, the transportation disadvantage of individuals in today's poorly equipped suburbia is

not just a follow-up and copying of the former situation in the USA, but it faces current trends in society that were not present in the Fordist era, and reflects the different cultural and other characteristics of the countries in which it operates.

Therefore, the aim of the paper is to provide a two-level review pertaining to the transport exclusion of mothers living in suburbia. The first level of the review was a general overview of the topic, the aim of which was to present the problem of transport exclusion of mothers living in suburbia comprehensively, and regarding wider connections and contexts related to the individual, social and environmental factors affecting it. The goal of the second level was to conduct a critical review of specific studies: here, the studies reviewed had to focus explicitly on transport behaviour and/or the exclusion of mothers living in suburbia (primarily or partly). While the intention of the general overview was to summarize the existing knowledge to date, in critical review, on the other hand, studies were evaluated on the basis of their research design. The critical review adds to the existing literature by identifying research gaps and limitations in analysed papers and by introducing possible future directions for the research, along with a concrete step of how to design future studies differently to obtain more valuable findings which will more reliably reflect the current social setting. We are aware that men also face specific experiences that may limit their everyday footprints and travel, however, this topic is not addressed in this review

METHODS

Both the general overview and the critical review were conducted systematically, as illustrated in the flow diagram (Fig. 1).

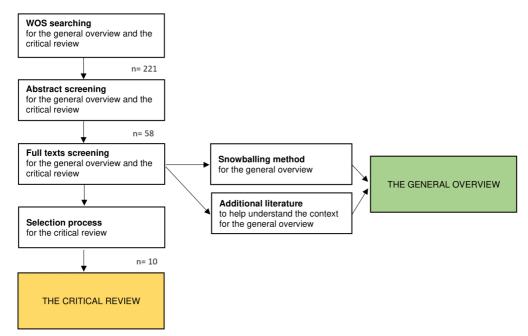


Fig. 1. Flow diagram of paper selection for the review

The systematic review was conducted using the Advanced Search Query Builder in the Web of Science database (2023), with data valid for 20th of June 2023. The search query was formulated as follows: AB = (("suburb*") AND ("transport*" OR "commut*" OR "travel*") AND ("mother*" OR "woman*" OR "female*" OR "women*" OR "gender*"")), other search criteria being language (English) and type (articles, book chapters, proceeding papers and early access). Year of publication did not play a role in the search procedure, since we intended to cover all the approaches to the issue available. Together, 221 records met the search criteria.

Individual assessment of abstracts was then conducted. Papers not within this article's scope were excluded immediately. Articles related solely to commuting from the city to suburbia (e. g. papers on reverse work commuting from central city to suburbs, commuting to suburban university campuses) were also excluded from the review.

Together, 58 papers were subject to full-text screening. During the full-text screening, it became clear that for the needs of the general overview, it would be necessary to include the snowballing method (adding some papers that were cited in the original selection). Studies not focused explicitly on mothers but describing processes that are traditionally associated with the gender roles of wife and mother (e. g. spatial entrapment, etc.) were included in the overview but excluded from the critical review. In addition, during the writing of the general overview, it became clear that some topics needed to be explained by including other additional literature (e. g. on the topic of post-socialist suburban development).

The criteria for papers to be included in the critical review were as follows: the results regarding transport had to refer specifically to mothers living in suburbia, and motherhood needed to be stated explicitly. Review papers were excluded from the sample. Two groups of research papers emerged. In the first group, there was a primary focus on the transport of suburban mothers, while in the second, this was a partial issue only. Both were included in the critical review, however. Finally, the sample involved in the critical review consisted of ten empirical studies. The main aim of this critical review was to identify strengths and weaknesses of the selected studies as well as to evaluate their value and research design adequacy.

RESULTS

General overview of wider connections and contexts related to transport exclusion of mothers living in suburbia

In this chapter, the knowledge to date has been organized into subchapters accroding to most frequently discussed toppics in selected documents. The themes are naturally intertwined and interrelated. The subchapters are organized to provide an overall view of the most important factors and circumstances related to the transportation experiences of suburban women.

Residential location: residential choice, expectations and reality

There is existing knowledge that families move to suburban areas around first childbirth (Kley and Drobnič 2019). However, there are various motivations for moving. While some texts mention as the reason for moving to the suburban-rural fringe the increasing land prices and the fact that middle-class families can afford to buy a property there (Kley and Feldhaus 2018 and Hughes 2022), others de-

scribe ideals around children (Andrews 2010) or getting a house with a garden (Miller 1995), often related to normative values according to which children deserve to live in a "proper family home" (Kley and Drobnič 2019, p. 155). As found by Andrews et al. (2016), mothers living in inner suburbia value access to public transport and a manageable work-family balance, while for those residing outer suburbs, the size of the house is more important than transport options. Yet, there are exceptions in families' residential decisions: the well-educated and well-paid prefer to live in gentrifying central neighbourhoods (McLafferty and Preston 2019), which were shown to be more suitable for women trying to juggle professional and household responsibilities (Preston et al. 1993).

However, there is contradictory knowledge on who among family members makes the residential decision choice. As an example, while Sultana (2005) found that the residential location may be chosen so that the male breadwinner, whose career is expected to take precedence over the woman's job, can easily access his employment, Janke (2021) showed neighbourhood selection being influenced by women's travel attitudes only. On the other hand, Kley and Feldhaus (2018) assumed a common decision-making process regarding place of residence and partners' commute length. Mothers who are more family-oriented and not planning to return to work quickly may agree to live in a remote location (Kley and Drobnič 2019).

After moving to suburbia, however, multiple obstacles arise, among which a lack of services (including childcare, healthcare for children, and educational institutions) and transport issues are often shown as typical examples of the everyday experience of suburban families (Novák and Sýkora 2007, Andrews 2010, Andrews et al. 2016 and Hughes 2022). Moreover, this situation can be exacerbated by the poor class of an area. As stated by Marouli (1995, p. 534), "[a] well-off woman living in a poor neighbourhood inevitably has to contend with inadequate services, streets in bad condition, poor environment (e. g., pollution) etc., although she may be capable of privately buying the services she needs."

The family's spatial isolation from opportunities and the greater distance to key destinations complicates the care of children and combining work and family life, as well as participation in society in general. As a result, in families where gender roles are more firmly anchored in everyday life, and where the man is considered the breadwinner, there is a chance that the married mother will be at least temporarily designated to housewifery and the related spatial isolation in the suburbs (Hughes 2022).

Working mothers in suburbia

In the previous section, the residential decision choice was described, which, as stated above, is often made at the time of the family foundation. However, as children grow, mothers are expected to make decisions related to returning to the labour market. These include, for example, questions on the job search strategy, job location and related commute length, earnings, qualifications, whether to work full time, and, in some cases, whether to work at all, all of these affected by gendered expectations on how a family should function.

Looking at the gendered job search, it has been shown to be affected by a need to combine household responsibilities with work, which leads to a restricted spatial radius and only certain kinds of jobs for which mothers apply (Wyly 1998). The prevailing body of literature shows that women work closer to home than men,

which has been explained by the traditional responsibilities of the woman as caregiver and the man as breadwinner (Johnston-Anumonwo 1992, Blumen, 1994, Howell and Bronson 1996, Wheatley 2013, McLafferty and Preston 2019 and Parker and Rubin 2022). Such a family arrangement requires women to work close to the homes they are supposed to take care of, and since they are considered second earners in many households, they often accept a part-time job or less qualified work, which leads to lower earnings and limited career growth potential (Crane 2007). This phenomenon is termed the spatial entrapment theory, which describes married women and mothers whose gendered household responsibilities restrict their overall mobility and keep them stuck in their home neighbourhoods. Research to date has shown that suburban women with school-aged children especially work closer to their home than men (Wheatley 2013). Despite prevailing agreement with the spatial entrapment thesis, England (1993) questioned this stereotype, although the findings were not such as to disprove the theory reliably, since men in the study still commuted further than women and only clerical women workers were taken into account.

In the second half of the twentieth century, job opportunities became available in the US suburbs, since there was a large number of well-educated spatially entrapped suburban women who were ready to work. Typical examples of such job suburbanization were the San Francisco Bay area (Nelson 1984 and Cervero and Landis 1992) and the Chicago metropolitan area (De Vise 1976). This way, the US suburbs quickly became work locations where women outnumbered men (Johnston-Anumonwo 1997). However, pink-collar jobs (historically feminized jobs, where women create an absolute majority) are often paid less and lack opportunities for career advancement (Brown 1995, OECD 2023). Therefore, mothers who were looking for better paid and higher qualified jobs had to commute to more distant locations anyway.

On the other hand, in monocentric metropolitan areas, most opportunities related to work and free-time activities are still located in a compact city, which is a common situation in Europe, for example. However, even in monocentric metropolitan areas, women's workplaces are closer to home than men's jobs (Silm et al. 2013). In monocentric metropolitan areas of post-socialist countries, it has been shown that women find it harder to get to the central city location than their male counterparts and are more dependent on them (Hirt 2008). Overall, their mobility is more restricted (Pojani et al. 2017) and mothers especially feel tied to their neighbourhood (Novák and Sýkora, 2007). While previous examples were from post-socialist environments, the constrained spatial movement of women in suburbia has also been recorded in other European countries (not necessarily with a monocentric morphological structure) – for example in greater Nottingham, UK (Wheatley 2013) or in greater Athens, Greece (Marouli 1995).

Literature to date has shown that long commutes might inhibit the labour force participation of mothers (Kley and Drobnič 2019). In a study by Kawabata and Abe (2018), suburbs were places of both low labour participation of married mothers and low regular employment rates. Additionally, giving that suburban women are less likely to work full-time compared to both men and central-city women (Blumen 1994, Johnston-Anumonwo 1997 and Kley and Drobnič 2019), it puts them at a disadvantage in terms of earnings. Moreover, research to date has shown that especially the most vulnerable groups may face long-distance or log-time commutes to low-wage jobs. This is especially common for transit-dependent individu-

als and those from the lowest income category (Johnston-Anumonwo 1997, Wyly 1998 and Levinson 1999).

However, the evidence on the transport disadvantage of mothers in suburbs is not without contradictions. It is the tendency to treat women as a homogenous group that lies beneath that issue. As shown by some authors, there is a need to consider racial backgrounds, family structures and places of residence (Preston et al. 1993), as well as different cultures, ideologies and housing typologies (Parker and Rubin 2022). In the US in the 1990s, researchers started to distinguish between European American women and women with a different race and/or ethnicity when examining commuting and found that the travel patterns among these groups differed significantly. While for European American women living in the suburbs, marriage and the presence of children led to shorter work journeys (Preston et al. 1993 and McLafferty 1997), that was not the case for other racial or ethnic groups. Compared to European American women, minority women had limited opportunities to work closer to their homes to accommodate family needs. The results indicated that the work trips of minority women were only slightly influenced by family responsibilities and their commutes were often as long as those of minority men (Preston and McLafferty 2016) and longer than those of European American women (Johnston-Anumonwo 1995 and McLafferty and Preston 1996). This has been explained by a lack of job opportunities for minority women because of, for example, discrimination in the labour market (McLafferty and Preston 2019) and limited access to a car due to low income, with a resulting dependence on public transport (Rogalsky 2010).

According to existing knowledge, however, suburban residents' attitudes towards long commutes differ. For example, while self-reported mental health is in general lower among those commuting for longer distances, in a study by Shen et al. (2021) the relationship between self-reported mental health and long-distance commuting was not significant among women. In addition, a study by Blumen (2000) conducted in Israel found that women perceived their long commute, not only as a burden but also as an opportunity for a mental shift, contemplation, relaxation and to take a 'pause' from their daily routine. As shown by Kawabata and Abe (2018), married mothers' attitudes towards long commutes also differed according to their education level, those with higher education being the most sensitive to commute times. In sum, looking at the studies mentioned above, it could be stated that when looking at commuting in the context of social justice, individuals' own needs, preferences, and the choice involved are the key elements that should be considered. As stated by Johnston-Anumonwo (1997, p. 316), "the 'goodness' or 'badness' of working close to home depends on how much choice is involved and on the wage earned at the end of the work trip".

Spatio-temporal travel behaviour of suburban mothers

The everyday travel experience of mothers living in suburbia can be best explained through the spatio-temporal patterns of their travel behaviour and overall daily activities. However, some of the gender differences in spatio-temporal behaviour are not only a matter of the suburban environment, but also occur in urban areas. Although women have been shown to be less time-sensitive regarding commuting than men (Patterson et al. 2005), their traditional gender roles of wife and mother subject them to multiple constraints which both reflect and lead to their more subordinate position.

In this review, we understand spatiotemporal constraints in line with Hägerstrand (1970), as restrictions on the potentially possible activities that mothers could perform. In this context, these can be capability constraints conditioned biologically or by the ability to control the necessary tools (e. g., ability to drive a car), coupling constraints expressing the need to join other individuals or tools to perform an action (e. g., carpooling family members), and authority constraints (e. g., opening hours of kindergarten for bringing a child in / picking up a child from it). In general, mothers have less time flexibility than men both in suburbs (Shen et al. 2015) and urban areas (Kwan 2000). Furthermore, regardless of their employment status, they have more fragmented activity-travel patterns in terms of the sequencing of many activities and trips in their daily schedule (McBride et al. 2020). An exception is a study by Silm et al. (2013) conducted in the suburbs of Tallinn, the capital of Estonia, where men made more trips per day than women, which, according to the authors, could be explained either by women being forced to stay at home or having less access to a car. In the same study, the travel activities of women were more limited to their work-home axis, and their activity spaces were smaller and more concentrated around their suburban homes, where they also spent more time than men. Larger activity spaces of men and their travelling farther from home was also reported in a study by Lo and Houston (2018) examining heterosexual married couples in Southern California, typical for its urban sprawl. Men have more leisure-time activities than women (Silm et al. 2013), but spend less time on household duties, which leads to fewer space-time constraints compared to their female counterparts (Chen and Yeh 2021).

Family structure

In suburban locations, traditional gender roles within the home persist (Wheatley 2013 and Preston and McLafferty 2016). As a result, working mothers particularly are under great time pressure. In two-parent families in Australia, more full-time employed mothers than full-time employed fathers reported always or often being under time pressure (Baxter et al. 2007), which can potentially create not only transport inequality, but also health inequalities related to time scarcity (Strazdins et al. 2011). The need to handle both work and household responsibilities has often been labelled a 'double burden' or 'double shift' (Hirt 2008 and Hughes 2022). Due to the need to balance work and household responsibilities, women face more spatio-temporal constraints than men (Chen and Yeh 2021). As stated by Blumen (2000), the spatial home-work separation and its negative effect is especially visible in peripheral suburbs. Yet, as shown by Di Ciommo et al. (2014), women and men have similar travel behaviour if they voluntarily participate equally in household duties.

Family structure plays an important role in the spatio-temporal constraints of women living in suburbia and their related transport exclusion. While family structure affects the travel behaviour of both men and women, the effects are not equal for both genders and reflect the traditional vision of the working man and the caring woman. For example, compared to women, being married has been shown to have a more important effect on men's working and commuting patterns. Marriage has been shown to cause longer commuting times for men compared to both their unmarried counterparts (McLafferty and Preston et al. 1993 and McLafferty 1997) and married women (Preston and McLafferty 2016), and has a significantly greater effect on earnings compared to women (Howell and Bronson 1996).

Gender roles and gendered spatial footprints are amplified by childcare responsibilities (Parker and Rubin 2022). The prevailing body of literature has shown that the presence of children in a household shortens the work trips of mothers compared to both fathers and childless women (Preston et al. 1993, Preston and McLafferty 2016), yet exceptions exist (e. g. Wyly 1998). As shown by Levinson (1999), individuals with the youngest children (0 - 5 years) spend more time at home than those with older children and childless households. Yet, according to the same author, being a parent increases time spent at home for mothers, but decreases that for fathers, who spend more time at work.

Children create a particular spatio-temporal constraint for commuting parents; however, as shown by, for example, Kwan et al. (2014) and Shen et al. (2015), these constraints are muted in multigenerational families: there, older members help with childcare responsibilities, which leads to greater temporal flexibility of parents and related extended opportunities to commute for better jobs or leisure activities. On the other hand, single mothers especially face great time scarcity (Strazdins et al. 2011). Despite this fact, however, in some studies, single mothers commuted longer than married ones (Preston et al. 1993) which could be explained by their role as sole wage earners.

Travel mode choice of suburban mothers

In general, gender is one of the most important factors influencing travel mode choice (Dai et al. 2016). Mothers often choose to use a private automobile among other travel modes, with the main reasons being a need for flexibility, time saving and overall time management when it is necessary to deal with complicated and complex travel patterns while traveling with children (Dowling 2000 and Blumenberg 2016, Maciejewska and Miralles-Guasch 2019).

As shown by Sivak (2013), during the twentieth and beginning of the twenty-first century in the US, driving licence ownership among women steadily increased. Moreover, Klein et al. (2018), who examined the suburbs of the Philadelphia region in the US, found that women living there in 2012 were more likely to use cars than men. Although Patterson et al. (2005) did not examine gender differences in car use, they found that among Canadian suburban residents, women were less likely to use public transport than men; they did not ascertain the reasons for such a choice. The opposite was found in China and in the post-socialist environment in Europe, where women still use cars less often than their male counterparts and tend to choose other modes of transport instead both in the suburbs (Silm et al. 2013 and Shen et al. 2021) and in urban areas (Pojani et al. 2017). For example, in a study by Shen et al. (2021), women in suburban Shanghai were more likely than their male counterparts to commute by foot, bicycle or public transport. Similarly, in suburban Tallinn, more women than men chose public transport (Silm et al. 2013).

Although a car seems to be a comfortable option for mothers, its use is conditioned by several factors, such as sufficient finances for its use, fair car share arrangements within a household, confidence in one's own abilities, etc. Therefore, the conditions for mothers to be able to use a car are not always fulfilled. Pojani et al (2017) examined travel behaviour in the urban environment of Tirana, the capital of Albania, and found several factors that discouraged women from driving. There, women were more concerned than men about saving money when choosing their transport mode; they often believed that driving was a male activity; at the same

time, they were often discouraged from driving by their husbands. Silm et al. (2013) pointed to the unequal car share within households and found that in the suburbs of Tallin, Estonia, men drove the family car more often than women. In this context, as mentioned in the work of Blumen (1994), working women living in the suburbs benefit when the family purchases an additional car. In addition to car use, in studies by Koppelman et al. (1993) and Patterson et al. (2005), women in suburbs were also more likely to ride share than men. However, looking at other alternatives, such as cycling and walking for transport, these have not in general been perceived as a favourable option by mothers. Walking for transport is effective for short distances only; moreover, as stated by Maciejewska et al. (2022), suburban and small-town women walk less than other women and any men. Similarly, for suburban residents, cycling has been perceived as an ineffective way to juggle complex travel patterns when parenting (Burke and Bonham 2010). Also, compared to suburban men, women tend to be more concerned about safety when cycling; at the same time, safety-conscious cyclists rarely make cycling trips for transportation purposes (Mitra and Schofield 2019).

Regional specifics in travel experience of suburban mothers

As indicated in the previous section, mothers' travel experience varies across different countries and regions. This is due, for example, to differences in culture, politics, ideology, history, and the related level of development of society in different parts of the world. In addition, spatio-temporal patterns of transport disadvantage are influenced by the physical attributes of the environment, such as the size of the suburbs and cities, as well as their functional and morphological structure, which is not uniform everywhere. In this section, traditional Western suburbs will be compared with those located in other regions, with a special emphasis on post-socialist countries and China, since these were highly represented among the reviewed papers.

Firstly, North American suburbs have been linked to a traditional family life. Especially the post-war period in the US was characterized by massive suburbanization, strengthening of the suburban housewifery ideal, an increasing car ownership rate (to which, due to patriarchal relations within a household, men had primary access), and a related reduction in the mobility of suburban mothers (Rutherford and Wekerle 1988 and Miller 2018). Therefore, during the late 1970s and early 1980s, researchers became interested in struggles related to the spatial entrapment of both working and non-working women (e. g. Madden 1981 and Hanson and Pratt 1988). During the twentieth century in the US, jobs were gradually relocated to suburban locations, which created new transport conditions for both suburban and urban working women. Therefore, in the 1990s, a new research topic emerged in the US, researchers being focused on the lack of job opportunities in the inner city. Since suburbs in the US were almost exclusively for the European American population, new suburban jobs were less spatially accessible for minorities (Johnston-Anumonwo 1995).

On the other hand, during the Soviet era, suburbanization had not yet developed in the socialist bloc, where, on the contrary, massive urbanization took place (Musil 2001). Officially, women were "equal to men in all economic, governmental, cultural, and sociopolitical matters" (Silm et al. 2013, p. 815) in communist regimes and members of both genders were expected to work (Pojani et al. 2017). At the same time, a high birth rate was ideologically supported by population poli-

cy (Hirt 2008 and Sprocha et al. 2018). However, since gender roles within a household persisted, such conditions created a double burden for working mothers, who had to have a job and take care of their households (Kaskla 2003 and Pojani et al. 2017). Despite the absence of suburban development, many women commuted from rural areas. However, in communist regimes, the car ownership rate was generally low. Public transport was preferred by most individuals due to its low cost and frequent connections, which led to the different travel behaviour of individuals compared to that in the capitalist societies (Pucher 1990). In the 1990s, unemployment rates in the post-socialist countries rose, which led to the disadvantaged position of women, who, due to their maternity leaves, often had to interrupt their careers. As pointed by Pojani et al. (2017), post-socialist women who decided to stay at home to take care of their children risked spiralling into poverty and dependency. In the late 1990s and early 2000s post-socialist environment, when economic recovery started, suburbanization intensified, driving factors being privatization, the deregulation of economic activities and decentralization (Stanilov and Sýkora 2014). On the other hand, Salvati and Carlucci (2015, p. 824) claim that suburbanization is "the common trait of the landscape of European cities, regardless of their geographical, economic, or administrative characteristics", the main drivers being, for example, rising living standards and changes in housing preferences and travel behaviour.

Yet, there are several differences between the suburbs of post-socialist countries and those in Western Europe and North America. For example, in the suburbs of the Central and Eastern Europe, no sub-centre formations have yet developed (Taubenböck et al. 2019). In addition, in European post-socialist countries, smaller urban regions and related smaller distances from suburbia to the city centre are typical. Also, cities and towns are smaller, monocentric and more compact, and workplaces are located mainly in the city centre (Silm et al. 2013 and Pojani et al. 2017). Differences in gendered behaviour between Western Europe and the postsocialist environment are visible, for example, in the former German Democratic Republic and the former Federal Republic of Germany (Kley and Feldhaus 2018). There, in the former German Democratic Republic in the socialist period, equal labour participation was promoted, while in the former Federal Republic of Germany, the breadwinner model was predominant. Although some differences persisted in both parts of Germany after reunification, there is a tendency for men to work full time while women have part-time jobs (Rosenfeld et al. 2004). Even within the post-social bloc, however, suburban development and gender gaps in employment and commuting are not homogeneous. As noted by Pojani et al. (2017), in the capital of Albania, unlike in other central and Eastern European cities, the suburbs are not the residence of the middle class, but are rather poorer informal suburbs, which are typical for the Western Balkans. Also in Tirana, the gendered job search and access are more linked to socio-cultural gender barriers than to transport poverty.

When reviewing studies on mothers' travel behaviour, differences also exist between China and Western countries, especially the USA. Looking at family structure, nuclear families are more common in the US, while in China, many young parents live in multigenerational families, where women receive help from other household members (Shen et al. 2015). Existing studies have shown that such cohabitation typically leads to less constrained spatio-temporal travel behaviour of both urban and suburban parents (Feng et al. 2013 and Shen et al. 2021) and enables women to participate fully in the labour market (Ta et al. 2019). Despite this,

women in China work closer to home than men in both urban and suburban areas (Hu et al. 2018 and Shen et al. 2021).

Critical review of studies focusing specifically on transport exclusion of mothers living in suburbia

As stated in the Methods section, the final sample for the critical review consisted of ten empirical studies. These were published between 1993 and 2022, reflecting both current and past social trends and conditions. Most of the papers were published in journals with a primary focus on geography and urban studies, and they were set in different countries and regions, namely Australia (three studies), USA (three studies), Bulgaria, Greece, South Africa and Israel (for more detailed information, see Tab. 1). Various geographical settings and related differences in socioeconomic, cultural and historical conditions, as well as morphology and the overall spatial arrangement in settlement systems, were reflected in different research topics, questions and methods of data collection and analysis. Therefore, in this critical review, the differences in the approaches will be analysed and their advantages and disadvantages will be discussed. Research gaps and possible future directions with respect to current trends in human society will then be identified.

Altogether, three main categories of research topics were identified: 1) family-related topics, with a special emphasis on parenthood and raising children; 2) the role of race and gender in work commute times; and 3) the suburban experience of women at different levels of emancipation.

Firstly, family-related studies were conducted in the suburbs of Melbourne (Andrews 2010 and Andrews et al. 2016), Sydney (Dowling 2000) and Johannesburg (Parker and Rubin 2022). There were some important differences in the methodology. The Australian studies dealt primarily with middle-class mothers for whom suburban residence was a matter of choice; the majority were car and home owners. There, ideals about living in suburbs and raising children were compared with the real experience and struggles of families. The private car being perceived as an effective tool for solving most of the spatio-temporal problems, and especially for juggling mothers' complex daily routines. The exception was a study by Andrews et al. (2016), where only mothers in the outer suburbs relied primarily on the private automobile, those residing in inner suburbia valuing access to public transport. All the Australian studies used qualitative data collected via face-to-face interviews and provided in-depth information on the topic. On the other hand, the study by Parker and Rubin (2022), who examined the spatial footprints of both mothers and fathers in different suburban localities of Johannesburg, holds a special position among family-related studies. Their research was conducted in three suburban sites with various racial, cultural and socioeconomic backgrounds, where former apartheid-driven planning still played a role in the everyday mobility experience of individuals. Common features of all the family-related studies included the use of qualitative data and the selection of suburban participants only. All the studies in this category offer comprehensive insight into the decision-making process of individuals when travelling.

The second group of papers is those by Preston et al. (1993), McLafferty (1997), and Preston and McLafferty (2016), all of which studied the role of gender and race in commute times of women in suburban New York in different time periods. The focus on suburban mothers is especially marginal, however; where mentioned in the papers, it relates solely to commute times/length, while omitting the

travel experience or travel behaviour. The dataset used in the studies comes from the Public Use Microdata Sample (PUMS), which is an anonymized representative sample of US residents and enables reliable statistical analyses to be conducted in large-scale geographical areas. Commute time was the focus of all three studies, other data available being those pertaining to, for example, personal characteristics, household characteristics, transport mode, and occupation. In these papers, urban women were studied alongside suburban women and compared. However, the analyses in these papers were strictly quantitative, not considering or analysing the decision-making choices of women. Such an approach is rather descriptive and does not provide deeper understanding of the issue.

Tab. 1. Basic characteristics of papers analysed in the critical review

Authors	Journal	Title	Suburbs of	Focus on the topic	Decision -making process studied	Data sampling
Andrews (2010)	Health & Place	Parental perceptions of residential location: Im- pacts on children's health	Melbourne (Australia)	Partial	Yes	Interviews with 15 mothers
Andrews et al. (2016)	Communi- ty, Work & Family	Mothers' ideals and experiences of raising children in inner and outer suburban Melbourne (Australia)	Melbourne (Australia)	Partial	Yes	Interviews with 20 mothers
Dowling (2000)	Geoforum	Cultures of mothering and car use in suburban Syd- ney: A preliminary inves- tigation	Sydney (Australia)	Primary	Yes	Interviews with 20 women (of whom 17 were mothers)
Hirt (2008)	Cities	Stuck in the suburbs? Gendered perspectives on living at the edge of the post-communist city	Sofia (Bulgaria)	Partial	Yes	Questionnaires with 121 women and 129 men; interviews with 15 women (number of mothers not specified); interviews with 10 planners
McLafferty (1997)	Urban Geography	Gender, race, and the determinants of commut- ing: New York in 1990	New York (USA)	Partial	No	Secondary quantitative data pertaining to 180,000 (year 1980) and 410,000 (year 1990) individuals, (number of mothers not specified)
Marouli (1995)	Interna- tional Journal of Urban and Regional Research	Women resisting (in) the city: Struggles, gender, class, and space in Athens	Athens (Greece)	Partial	Yes	Interviews with 75 women (number of mothers not specified)
Parkerand Rubin (2022)	Urban Forum	Mobility intersections: Gender, family, culture and location in the Gaut- eng City region	Johannes- burg (South Africa)	Partial	Yes	Interviews, focus groups, smartphone mobility app, mapping, online communication platforms (27 mothers and 15 fathers)
Preston et al. (1993)	Urban Geography	The impact of family status on black, white, and Hispanic women's com- muting	New York (USA)	Partial	No	Secondary quantitative data (number of mothers not specified)
Preston and McLafferty (2016)	Annals of the Ameri- can Associ- ation of Geogra- phers	Revisiting gender, race, and commuting in New York	New York (USA)	Partial	No	Secondary quantitative data of 5% of the residents of the region (number of mothers not specified)
Blumen (2000)	Urban Studies	Dissonance in women's commuting? The experi- ence of exurban employed mothers in Israel	Jerusalem and Haifa (Israel)	Primary	Yes	Interviews with 42 mothers

The third group of papers analysed is focused on the suburban experience of women at different levels of emancipation, the study areas being in Greece, Bulgaria and Israel. In the study by Blumen (2000), there was a primary focus on the

transport experience of full-time employed Israeli suburban mothers, the main goal being to analyse their attitudes towards the work commute regardless of the travel mode. In the remaining two papers, the focus on suburban mothers' transport experience was only marginal. Marouli (1995) studied Greek suburban women's ways of resisting patriarchy, while Hirt (2008) examined the overall gendered experience of living in a Bulgarian post-communist suburb. Moreover, Marouli (1995) and Hirt (2008) selected participants with different ages and occupations, only some of them being mothers of small children. On the other hand, in the study by Blumen (2000), only middle-class full-time employed mothers participated. As a data collection method, interviews (Marouli 1995 and Blumen 2000) or interviews in combination with questionnaires (Hirt 2008) were used. All the studies provide information on the transport-related decision-making of mothers. There were important differences in the selection of study areas. Blumen (2000) chose two Israeli suburban localities of Haifa and Jerusalem. There, all the participants were upper-middle -class mothers at a high level of emancipation in terms of having a good job and social status. On the other hand, Marouli (1995) compared three Greek suburban localities of Athens with different classes, where women of various socioeconomic backgrounds lived. There, women had different conditions for their emancipation and tried to fight for their position in society in different ways. Finally, Hirt (2008) examined women from only one Bulgarian suburban location in Sofia, participants being from various backgrounds. They often sacrificed their mobility and social life in order to live in this post-communist suburbia.

DISCUSSION AND CONCLUSION

This two-level review paper targeted the issue of transport exclusion of suburban mothers. So far, scientists from only a few regions of the world have worked on the subject, with the most numerous papers coming from North America, China, Australia and European countries. The research topics were also specific to the year of publication. In the USA, research on the transport behaviour of suburban women was already developed in the 1990s (with a large number of papers focusing on work commuting distance and/or length in relation to various socioeconomic variables, taking intersectionality into account), while in Eastern European countries this was not the case due to the later onset of suburban development. In later years, scholars from other countries began to address the topic of suburban women's transport behaviour as well, and, moreover, studies using qualitative methods increased in number. It is necessary to mention some important points that arise from the analysed studies. Firstly, the overview showed that the motivation for living in suburbia varies among households but is usually associated with family life. Paradoxically, however, it is often the family life that is complicated by living in the suburban locations, one of the main complications being lower spatial and spatio-temporal access to services, jobs and overall opportunities. Importantly, the spatio-temporal constraints of suburban women have been shown to be larger than those of men, which relates to the persisting gendered view of parental childcare responsibilities and related time pressure when juggling the roles of mother and worker. However, suburban mothers' transport experiences clearly differ according to both individual and environmental factors (e. g. socioeconomic class, race and ethnicity, as well as geographical settings and the overall characteristics of a suburb). Individual variables affect whether or not a mother's travel strategy is convenient and whether it is a matter of choice or out of necessity. For example,

not every woman has the opportunity to drive a car to gain more spatio-temporal flexibility and to solve her complex and fragmented daily schedule, or to find a well-paid high-status job within a reasonable distance of her home. On the other hand, environmental factors of suburban mothers' transport experience relate to, for example, the morphology of a particular urban-suburban system, the size of the suburb, and the related existence or absence of services and job opportunities there, as well as regional specifics such as the traditional family structure (nuclear vs multigenerational), ethnic/race composition, history, traditions, culture and ideology. In empirical studies focusing specifically on suburban mothers and their transport behaviour and/or exclusion, it is not possible to address all the issues mentioned above in only one case study. Therefore, in this paper, the approaches of various authors were examined in the critical review.

Based on the critical review of studies focusing specifically on suburban mothers and their transport behaviour and/or exclusion, several research gaps were identified. Studies including enough participants to conduct statistical analysis while providing valuable explanations based on the qualitative data are missing. In some regions of the world (e. g. Latin America and South Asia), research focused speci-fically on suburban mothers' transport behaviour and/or exclusion is not covered at all. In addition, mothers today find themselves in a rapidly changing time, where new social issues and phenomena are constantly emerging (working from home, the question of traditional views on the family, secularization and the related change of view on the role of the family, single-parent families as a new standard, etc.). These issues should be properly reflected on and studied in different cultural contexts. Although the research gap regarding traditional values and mothers' beliefs was identified by Howell and Bronson (1996), who stated that there is a chance that more traditional beliefs of women would limit their commute time to a greater extent compared to those with more contemporary beliefs, we found only two stu-dies reflecting this issue in this review. The first was the paper by Kley and Feldhaus (2018), which was considered in the general overview but not in the critical review of this paper. There, the traditional view of gender roles was determined as the degree of agreement to these statements: women should care more about the family than about their careers and a child below six years of age suffers if its mother works (Kley and Feldhaus 2018, p. 5). However, transport behaviour was not investigated in their study, only the effect of the long commutes on the partnership stability. In the study by Hirt (2008), which was involved in the critical review, both women and men were asked for their normative opinions on how basic household responsibilities should be divided; however, mothers were not the primary subjects of the research. Moreover, when examining values and beliefs, we believe that such normative opinions should be explained by more in-depth questions – e. g. Why do mothers believe that household responsibilities should be divided in the way they describe? Based on the limitations mentioned above, a future research agenda is proposed, as follows:

1) There is a need to conduct empirical research dealing specifically with the transport behaviour and/or exclusion of mothers living in suburbia, in which participation is open to women with various socioeconomic backgrounds and, at the same time, is not restricted in terms of travel mode. This way, various groups of respondents could be compared (e. g. car users vs non-car users) and a more realistic view of the mobility of suburban mothers obtained.

- 2) Looking at geographical settings, it could be beneficial to study the transport exclusion and/or behaviour of suburban mothers in more regions and countries, as so far research is very limited to only a few countries in the world. Additionally, in some cases, it is not necessary to limit the research area according to state borders. For example, research in cross-border urban-suburban systems can be conducted, since this could uncover not only different motivations for moving to these locations, but also different challenges and barriers in the mobility of mothers (e. g. lack of cross-border public transport).
- 3) Authors may consider using a combination of quantitative and qualitative data in a single empirical study. This way, not only could a valid statistical analysis be carried out, but it would also be possible to explain the results obtained. At the same time, however, qualitative data should not only concern decision-making processes, but also the value orientations of mothers (ideally also of their partners, if they exist). To avoid superficial results, an approach using in-depth questions should be maintained if possible.
- 4) Future research should consider changes and new trends in a society. This could be, for example, the working from home era which started to prevail in many occupations during the COVID-19 pandemic and its effect on the transport experience of suburban mothers, or the changing views on the family arrangements and dynamics.

This work is subject to limitations. When selecting articles for review, despite the author's efforts to proceed as systematically as possible, full-text screening could be biased on a certain degree of subjectivity. Another limitation pertains to the critical review itself. The fact that the three groups of papers were geographically anchored could be a result of the small number of studies analysed. Moreover, in the case of the second group of studies which were conducted in the New York metropolitan area, all three papers were authored by the same collective. Another limitation concerns the search of records exclusively through the WOS database. Evaluating studies from multiple databases would allow us to cover the issue more broadly. Similarly, this review focused only on studies written in English, which may also have narrowed the results obtained. However, such a selection allowed us to focus on the highest quality publications available, and thanks to the English language, understandable to a wide scientific audience. Looking at the studies analysed, there are some regional specifics related to the concept of a suburb. There are different types of suburbia which relate to the history of the planning and the way the particular suburbs were created. Despite the stereotypical idea of suburbs being built in former green fields, in the studies analysed, there were some contrasting examples to that idea – for example, former villages with new development typical of post-socialist countries (Hirt, 2008), or former mining industrial areas and ethnic-specific suburbs created during apartheid in South Africa (Parker and Rubin, 2022). This leads not only to the resulting differences in morphology and overall traffic functioning of an area, but also to the demographic composition of its inhabitants and related differences in their lifestyles, socioeconomic conditions, and the barriers they face.

Despite its limitations, however, this review provides valuable insights into the issue of transport-related exclusion of one of the most vulnerable groups living in one of the most difficult environments for travelling. There are still not enough studies dealing with this issue, and only a very small number of emerging questions regarding the transport disadvantage of suburban mothers have been an-

swered so far. To form a sufficient basis for solving social justice in the public space, more research should be done.

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DOPRAVNÉ VYLÚČENIE SUBURBÁNNYCH MATIEK: KRITICKÉ ZHODNOTENIE DOTERAJŠIEHO VÝSKUMU

Matky žijúce v suburbiu čelia viacnásobnému dopravnému znevýhodneniu. Spoločnosť od matiek očakáva, že budú plniť svoje úlohy vyplývajúce z rodových rolí. Ich mobilita je súčasne limitovaná morfologickou a funkčnou štruktúrou suburbánneho prostredia, ako aj obmedzenými dopravnými možnosťami. Navyše, dopravné znevýhodnenie jednotlivcov obývajúcich suburbánne oblasti nie je len nadviazaním na niekdajšiu situáciu v USA, ale je ovplyvnené aj súčasnými trendami v spoločnosti, ktoré neboli prítomné počas fordistickej éry. Dopravné znevýhodnenie suburbánnych matiek tiež odráža rozdielne charakteristiky krajín (napr. kultúrne), v ktorých sa odohráva. Cieľom príspevku bolo uskutočniť kritické zhodnotenie vedeckej literatúry týkajúcej sa dopravného znevýhodnenia suburbánnych matiek. Toto zhodnotenie bolo realizované v dvoch úrovniach: 1) všeobecný prehľad širších súvislostí v oblasti dopravných skúseností žien a matiek a 2) kritický prehľad štúdií konkrétne zameraných na suburbánne matky a ich dopravné správanie a/alebo vylúčenie. V druhej úrovni boli vylúčené teoretické články, články skúmajúce reverzný smer dochádzania (napr. z mesta do suburbánnych univerzitných kampusov) a historické štúdie popisujúce predvojnový suburbánny rozvoj. Hodnotené články boli vyberané systematicky, a to prostredníctvom nástroja Advanced Search Query Builder v databáze Web of Science (2023) s dátami platnými 20. júna 2023. V rámci prvej úrovne zhodnotenia sme identifikovali šesť na seba nadväzujúcich oblastí, ktoré súhrnne popisujú a vysvetľujú širšie súvislosti týkajúce sa dopravných skúseností žien a matiek. Ide o výber suburbia ako miesta bydliska, pracujúce suburbánne matky, časovo-priestorové aspekty dopravného správania, rodinné usporiadanie a jeho vplyv na dopravné skúsenosti, spôsob dopravy a regionálne špecifiká dopravných skúseností suburbánnych matiek.

Rodiny volia suburbium ako miesto bydliska v očakávaní kvalitnejšieho rodinného života. Je to však práve rodinný život, ktorý je často negatívne ovplyvnený nedostatočnou dostupnosťou služieb, maloobchodu, pracovných či iných príležitostí. V dôsledku väčších vzdialeností a komplikovanej dopravy sa časť suburbánnych matiek vzdáva svojej kariéry alebo znižuje svoje pracovné štandardy prácou na čiastočný úväzok, prípadne prácou blízko domu za súčasnej akceptácie nižšieho príjmu alebo menej kvalifikovanej pozície. Viaceré štúdie upozorňujú na skutočnosť, že práca manžela je v pároch vnímaná ako dôležitejšia. V prípadoch, keď si matky takéto obmedzenia nemôžu dovoliť, prípadné nechcú obetovať svoju kariéru, sú často nútené dochádzať na väčšie vzdialenosti a zároveň sa starať o deti,

v dôsledku čoho čelia náročným časovým rozvrhom. Z hľadiska časovo-priestorových vzorcov možno konštatovať, že matky majú komplexnejšie časovo-priestorové rozvrhy ako muži a bezdetné ženy, nižšiu časovo-priestorovú flexibilitu, viac fragmentované časovopriestorové vzorce (v zmysle sekvencie viacerých ciest a aktivít počas dňa) a menšie priestory aktivít koncentrované na miesto bydliska. Vo viacgeneračných domácnostiach (kde dochádza k pomoci od ostatných členov rodiny) sú časovo-priestorové a dopravné obmedzenia matiek zmiernené. Osamelé matky, naopak, čelia mimoriadnemu časovému tlaku. Spomedzi spôsobov dopravy matky často preferujú osobný automobil, pretože im umožňuje efektívne riešiť výzvy vyplývajúce z ich komplikovaných časovo-priestorových rozvrhov. Osobný automobil však nemá každá matka k dispozícii. Viaceré štúdie poukázali na fakt, že v prípade existencie len jedného automobilu v domácnosti je jeho prioritným užívateľom muž a žena získava určité výhody až po zaobstaraní druhého vozidla. Ženy sú častejšie než muži zamerané na šetrenie financií a bezpečnosť alebo sú dokonca presvedčené, že nie sú schopné jazdiť pre ich rodovú príslušnosť. Dopravné skúsenosti suburbánnych matiek sa líšia naprieč krajinami a regiónmi. To súvisí s odlišnou kultúrou, históriou, politickou situáciou, ideológiou či úrovňou vývoja spoločnosti. Rolu hrajú aj rozdiely vo veľkosti a veku suburbií, ich funkčnej a morfologickej štruktúre. Na druhej úrovni prehľadu boli vybrané len tie práce, ktoré sa sústredili konkrétne na suburbánne matky a ich dopravné správanie a/alebo vylúčenie. Analyzovaných bolo desať štúdií v tematických oblastiach: rodinne-orientované témy s osobitným zreteľom na rodičovstvo a výchovu detí, úloha rasy a rodu v dochádzaní do práce a suburbánne skúsenosti žien na rôznych úrovniach emancipácie.

Osem z desiatich skúmaných prác sa predmetnej téme venovalo len čiastočne. Pri pohľade na dve štúdie, ktoré sa primárne zamerali na tému dopravného vylúčenia/dopravných skúseností suburbánnych matiek, Blumen (2000) uskutočnila rozhovory s obmedzenou vzorkou (matky vyššej strednej triedy), zatial' čo Dowling (2000) skúmala výlučne matky cestujúce osobným automobilom. Napokon, v žiadnej z desiatich analyzovaných štúdií neboli zohľadnené hodnotové systémy jednotlivcov či prebiehajúce spoločenské zmeny (napr. home office, sekularizácia a s tým súvisiaca zmena pohľadu na úlohu rodiny, neúplné rodiny ako nový štandard atď.). Tieto otázky by mali byť študované v rôznych kultúrnych kontextoch. Návrhy pre budúci výskum sú nasledovné:

- 1. Je potrebné uskutočniť empirický výskum zaoberajúci sa dopravným správaním a/alebo vylúčením suburbánnych matiek bez obmedzenia sociálno ekonomického zázemia participantiek či ich spôsobu dopravy. Týmto spôsobom by bolo možné porovnať rôzne skupiny matiek (napr. užívateľky osobných automobilov vs. ostatné matky) a získať realistickejší pohľad na suburbánnu mobilitu.
- Výskum je potrebné uskutočniť vo viacerých regiónoch a krajinách, keďže je v súčasnosti obmedzený len na niekoľko krajín sveta. V niektorých prípadoch navyše nie je potrebné ohraničovať oblasť výskumu na základe štátnych hraníc. Výskum je možné uskutočniť aj v cezhraničných sídelných systémoch a tým odhaliť motivácie sťahovania sa do týchto lokalít a výzvy, ako aj prekážky v mobilite matiek.
- Autori môžu zvážiť použitie kombinácie kvantitatívnych a kvalitatívnych údajov v jedinej empirickej štúdii. Týmto spôsobom by bolo možné nielen vykonať validnú štatistickú analýzu, ale aj doplniť výsledky o explanáciu podloženú dátami. Zároveň by sa však kvalitatívne dáta nemali týkať len rozhodovacích procesov, ale aj hodnotových orientácií matiek.
- 4. Budúci výskum by mal zvážiť zmeny a nové trendy v spoločnosti. Ako príklady možno uviesť éru, kedy home office ktorý v mnohých povolaniach začal prevládať počas pandémie COVID-19, či meniace sa názory na usporiadanie a dynamiku rodiny.



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