Mitigating barriers against accessible cities and transportation, for child-rearing households

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A B S T R A C T
This paper discusses the types of cities and transportation environments required for increasing quality of life of child-rearing households in Japan. The author proposes a classification of barriers that child-rearing parents face in their daily lives. An international comparative study shows that the behavior of and public attitudes toward stroller users in Japan are very different from those in other countries. In addition to providing accessible environments in cities and transportation systems, improving the quantity and quality of childcare services and information, and alleviating the scheduling constraints that come along with rearing children, it is also essential to raise public awareness of child rearing and travelers with children, a development that could help increase the birth rate in Japan.

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1. Introduction

Japan is facing an aging society with fewer children. The total fertility rate (the average number of children born to a woman over her lifetime) declined from 2.14 in 1973 to 1.43 in 2013, which is one of the lowest among developed countries (in 2011, the rate in the United States was 1.89, France 2.01, Sweden 1.90, UK 1.91, Italy 1.42, and Germany 1.36) [1]. In July 2014, the Japan Policy Council made a proposal aiming to boost the total fertility rate to 1.8 in 2025 [2]. Although the Japanese government has been aware of this problem since the 1990s, it has only recently started to tackle the issue in earnest. Many people want to have more children, but various economic, social, physical, and psychological barriers stand in the way. The main reasons behind the decreasing birth rate is that people are marrying and having their first children at older ages and that couples are having fewer children overall, conditions that stem from a variety of backgrounds: economic depression, unstable employment, increasing numbers of double-income families, day-care center shortages, and tax system difficulties all contribute to the issue. Compared with other European countries, the ratio of working women in their thirties is low in Japan, resulting in an “M-shaped” curve in the relationship between age and the ratio of working women.

At the same time, Japan has enacted several laws related to accessible cities and transportation for all, especially for elderly and disabled people.

Since the Law on Buildings Accessible and Usable by the Elderly and Physically Handicapped (the Heartful Building Law) went into effect in 1994, buildings and facilities that elderly and disabled people regularly visit have had to meet national accessibility standards. Under the Law for Promoting Easily Accessible Public Transport Infrastructure for the Aged and the Disabled (Transportation Accessibility Improvement Law), which lawmakers established in 2000, public transport business operators such as railway and bus companies are required to improve their vehicles and stations to meet accessibility standards. In addition, the law mandates that local governments draw up master plans of accessibility improvement, typically for train stations and surrounding areas, in cooperation with relevant stakeholders. In 2006, the Heartful Building Law and Transportation Accessibility Improvement Law were integrated into the Law for Promoting Mobility and Accessibility for the Aged and the Disabled and the others (the New Accessibility Improvement Law). Under these legal provisions, roads and streets, railway stations, trains and buses, public facilities, and shopping centers have undergone rapid transformations to offer universal accessibility. For example, elevators at train stations, wide and flat sidewalks, step-less buses, and multi-purpose bathrooms at railway stations, public facilities, and shopping centers have made it much easier for people with limited mobility to venture outside and participate in out-of-home activities than before.

The built environment of cities and transportation has become accessible not only for wheelchair users and the elderly but also for people with young children, including stroller users—a segment that has been using trains in greater and greater numbers recently, especially in metropolitan areas like Tokyo and Osaka. However, conflicts sometimes arise between stroller users and other passengers at railway stations, on trains and buses, and in elevators, among other settings. In 2013, the Japanese government’s Ministry of Land, Infrastructure,
Transport and Tourism (MLIT) organized a committee and discussed desirable solutions that would allow people to use strollers on public transportation safely and comfortably [3]. The committee concluded that, in the short term, measures should focus on educating stroller users about safe usage and raising public awareness of stroller users. The long-term measures, meanwhile, could be to develop safer strollers and to provide priority space for stroller users on trains and buses [3].

This paper discusses accessible cities and transportation for households rearing young children in Japan. Section 2 reviews the existing literature on accessible cities and transportation for child-rearing households. Section 3 proposes a classification of barriers that parents with young children face in their daily lives. Section 4 introduces a comparative analysis of public attitude toward stroller users between Japan and other countries. Section 5 introduces recent activities that have aimed to raise public awareness of travelers with children in Japan. Section 6 concludes the paper and discusses future research approaches to realizing cities and transportation that are friendlier for child-rearing households.

2. Literature review on accessible cities and transportation for child-rearing households in Japan

Research into accessible cities and transportation for child-rearing households covers a wide variety of fields, including city planning, transportation planning, architecture, social welfare, and education. Recently, Japanese academic societies related to cities and transportation have paid considerable attention to this research topic. From 2012 to 2014, the Japanese Association for an Inclusive Society [4], City Planning Institute of Japan [5], and Japan Society of Traffic Engineers [6] organized special issues on child rearing in their journals. More and more researchers have begun to appreciate the importance of this research field. This section reviews existing literature, mainly in the field of transportation research in Japan.

A traveler with young children is defined as a "mobility-handicapped" person. Such travelers carry their children along with many childcare goods and supplies (milk bottle, diapers, pre-moist wipes, etc.) in their strollers, which make it difficult to climb stairs. Escalators are not recommended due to safety concerns, so stroller users rely on elevators. Some researchers have investigated the travel behavior of child-rearing women. Empirical studies in the Tokyo metropolitan area include Ohmori et al., [7] who conducted a web-based questionnaire of 1000 child-rearing women living in central Tokyo, suburban Tokyo, and the northern Kanto area. They found differences in travel behavior (frequency and travel mode) and attitudes toward barriers among the three areas. The authors also showed that mothers with children under three years of age, mothers with fewer years of child-rearing experience, and nuclear families not receiving help from others encountered more barriers. Ishigami et al. [8] analyzed the travel behavior of young women using data from a large-scale household travel survey (Tokyo Person Trip Survey 2008). Despite lacking direct information on the relationships of household members and on people accompanying children, the paper reports differences in travel behavior between women with and without children. Shinpuku et al. [9] revealed that while there are large numbers of childcare facilities such as nursing

Table 1

<table>
<thead>
<tr>
<th>Parties responsible for mitigating barriers.</th>
<th>National govt.</th>
<th>Local govt.</th>
<th>Private businesses</th>
<th>NPOs</th>
<th>Employers</th>
<th>Child-rearing households</th>
<th>Other households</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Transportation systems</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>2. Activity opportunities</td>
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<td>3. Childcare services</td>
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<tr>
<td>4. Household activity schedule</td>
<td>X</td>
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<td>x</td>
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<td>5. Childcare information</td>
<td>x</td>
<td>X</td>
<td>x</td>
<td></td>
<td>x</td>
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<tr>
<td>6. Public attitudes toward childcare</td>
<td>X</td>
<td>x</td>
<td>x</td>
<td></td>
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</tr>
</tbody>
</table>

X: primary; x: secondary.
areas outside Tokyo, Hatoko and Kozuka [10] used the Kei-han-shin rooms in Jiyugaoka and Daikanyama, popular areas for mothers in Policy measures for alleviating barriers for child-rearing parents.

Table 2
Policy measures for alleviating barriers for child-rearing parents.

(i) Barriers in transportation systems

Roads and streets
- Walking environments where parents and children can travel safely and comfortably (wide sidewalks, separation from carriageways for vehicles and bicycles, elimination of gaps between sidewalks and carriageways, stroller-friendly streets, reduced congestion on streets, etc.)
- Bicycle environments where parents and children can travel safely and comfortably (elect ric bicycles with child seats, cycling roads, cycling lanes, bicycle parks for bicycles with child seats, environments where children can bike safely, etc.)
- Driving environments where parents can drive with children safely and securely (safe and comfortable child seats, car interiors that make it easier to see and take care of children, safe parking lots for parents with children, etc.)
- Information on the design of roads and streets for parents with children
- Subsidies to construct roads and streets that are friendly for parents with children

Public transportation
- Train stations/bus stops that are friendly for parents with children (elevators, escalators, elimination of gaps, wide ticket gates, well-educated station staff/drivers, bus stops where parents with children can wait without experiencing stress, reduced congestion, etc.)
- Trains/buses that are friendly for parents with children (vehicles that make getting on and off safer, priority spaces for stroller users, reduced congestion, etc.)
- Bathrooms and nursing rooms in train stations (stalls that can accommodate parents with strollers, nursing facilities in men's rooms, etc.)
- Taxis that parents with children or children alone can take easily
- Service hours that are friendly for parents with children
- Fare systems that reduce the economic burden on parents
- Information on the rules and manners of how to use public transportation, bathrooms, and nursing rooms
- Subsidies to provide public transportation that is friendly for parents with children

(ii) Barriers in activity opportunities
- Childcare-related facilities in residential areas and compact urban structures
- Facilities that parents with children can access/travel to easily (fewer gaps at entrances, reduced resistance to up-and-down movement, etc.)
- Equipment (child seats in restaurants, priority parking spaces for stroller users, free stroller and shopping cart rentals, safe spatial designs, exclusive spaces for parents and children, etc.)
- Bathrooms and nursing rooms in public facilities and shopping centers (stalls that can accommodate parents with strollers, nursing facilities in men's rooms, etc.)
- Service hours that are friendly for parents with children
- Information on the rules and manners of how to use buildings, facilities, bathrooms, nursing rooms, diaper changing sheets, etc.
- Subsidies to provide buildings and facilities that are friendly for parents with children

(iii) Barriers in childcare services
- Increased quantity and quality of daycare centers
- Diversified nursing services (temporary care, holiday care, after-school care, baby-sitters, family support systems, home daycare, etc.)
- Nurseries close to home or along commute routes (childcare facilities at or around train stations, delivery services for taking children from train stations to nurseries, etc.)
- “Nurseries at business offices” (for parents who work at different companies; joint operation by multiple companies, etc.)
- Diversified shuttle services (shuttle buses/taxis, etc.)
- Economic support for parents to use childcare services
- Information on how to use childcare services
- Subsidy to provide childcare services

(iv) Barriers in activity scheduling
- Technology innovations for housing environments and home electronics to mitigate the burdens of being with children and engaging in housework/childcare activities
- Improved travel support equipment (baby slings and strollers, etc.)
- Environments in which parents can live with or close to grandparents
- Homemaker services
- Neighborhood communities (environments where it is easy for parents to ask friends to feed and escort children, etc.)
- Flexible work styles (maternity leave, part-time work, flexible work hours, etc., and better understanding of father's childcare among employers, etc.)
- Special childcare services for emergent situations involving parents and/or children (temporary nurseries and sickness nurseries) and shuttle services for children (pickup buses, “kosodate” taxis, etc.)
- ICT that provides an alternative to travel (e-shopping and online government services, etc.)
- Economic support such as child benefits, etc.

(v) Barriers in childcare information
- Comprehensive information and communication service on transportation systems, activity opportunities, and childcare services (“kosodate” maps, “kosodate” portal sites, etc.)
- Places and opportunities for parents to communicate and make friends
- Economic support for getting/using information devices
- Subsidies for local governments and private companies to provide information on childcare

(vi) Barriers in public attitudes toward childcare
- Legal recognition of travelers with children (stroller users) as mobility-impaired people
- Childcare policies and institutional designs suitable for an aging society with fewer children (improved family policies, labor policies, tax systems, social insurance systems, etc.)
- Education geared toward improving the attitude toward and understanding of child rearing and parents traveling with children (efforts aimed at fostering a barrier-free mindset, child-rearing barrier-free education, rules for improving the manners of traveling with children, etc.)
- Subsidies for local governments and private companies to promote education activities and improve the attitude toward and understanding of child rearing and parents traveling with children

In Jiyugaoka and Daikanyama, popular areas for mothers in Tokyo, information on locations was not well provided. Looking at areas outside Tokyo, Hatoko and Kozuka [10] used the Kei-han-shin Person Trip Survey 2000 to analyze trips with children under five years of age in Osaka and showed that this segment of the population used public transportation less than other groups did. Tatsumi et al.
Parents rearing young children face a variety of barriers in their daily lives. To create cities and transportation systems that allow parents with young children to choose the lifestyles that they want to pursue and improve their quality of life, the stakeholders involved need to remove or at least lower various types of barriers. In this section, I propose a...
classification of these barriers from an activity-based travel analysis approach.

In the activity-based travel analysis, travel is a demand derived from engaging in activities at different locations. In their daily lives, people living in cities engage in a diverse range of activities: mandatory or obligatory activities (sleeping, having meals, personal care, medical care, etc.), maintenance or subsistence activities (business work, housework, childcare, grocery shopping, other chores, etc.), and discretionary activities (hobby, leisure, communication, relaxing, etc.). I operate on the assumption that people allocate these activities in time and space within the spatiotemporal constraints of transportation systems and activity opportunities in their living areas, given individual and household characteristics (Fig. 1). The daily activity demand of a household depends on the "life stage" of the household. As households with young children have to engage in childcare and more housework activities, they have less time for engaging in discretionary activities than households in other life stages, such as couples without children, households with adult children, and retired elderly households, do. When parents participate in out-of-home activities with their children, they become "mobility-handicapped people" and face various barriers in cities. The main policy objective is to enhance mobility and accessibility for child-rearing households by removing and mitigating various barriers.

As shown in Fig. 1, there is a variety of barriers complicating out-of-home activity participation for child-rearing parents in terms of the transportation systems and activity opportunities in their sphere of daily life. Many personal and household characteristics also affect parents' attitudes and out-of-home activities. Although there might be several ways of classifying these barriers, I propose the following six categories [7]:

(i) Barriers in transportation systems
(ii) Barriers in activity opportunities
(iii) Barriers in childcare services
(iv) Barriers in household activity scheduling
(v) Barriers in childcare information
(vi) Barriers in public attitudes toward childcare

I believe that realizing "cities and transportation that are friendly for child-rearing households" will involve providing child-rearing households with alternatives for "diverse lifestyles." In this paper, I define "diverse lifestyles" for child-rearing households as being able to choose a variety of combinations of decision elements—about both "individual and household characteristics" such as household structure (including the number of children), residential location, job location and work style, car ownership, and short-term decisions about "daily activity-travel patterns"—and change them flexibly (Fig. 1). This effort hinges on both providing "an environment for parents with children to participate in out-of-home activities safely and comfortably" by alleviating mainly (i) barriers in transportation systems (roads/streets, railway, buses, train stations, bus stop, etc.) and (ii) barriers in activity opportunities (shopping buildings, public facilities, etc.) and offering "an environment for parents alone, without children, to participate in

Fig. 3. “If you are on the train, bus, or tram and see someone with a stroller, which of the following things do you do?”

Fig. 4. “How often do you fold up your stroller when you ride the train, bus, or tram?”
out-of-home activities” by mitigating mainly (iii) barriers in childcare services. In Japan, the Ministry of Land, Infrastructure, Transport and Tourism (at the national government level) and bureaus of city, roads, and transportation (at the local government level) have taken policy measures tackling barriers (i) and (ii), and Ministry of Health, Labour and Welfare (at the national level) and bureaus of welfare/childcare (at the local government level) have addressed barrier (iii). Child-rearing households encounter barriers (iv) in household activity scheduling and face severe time constraints and sudden schedule changes as a result of their children’s behavior (e.g., giving milk, taking children to the bathroom, putting children to sleep, etc.). Therefore, mitigating these barriers is also important. Along with the mitigation of barriers (i) to (iii), it is effective to alleviate barriers in childcare information (v) by offering general information on barrier-free infrastructures and childcare services. Finally, it is most important to deal with barriers in public understanding of and attitudes toward childcare (vi) to design effective countermeasures against barriers (i) to (v). To cope with many kinds of barriers, national and local governments, private businesses, NPOs, employers, child-rearing households, and other households need to cooperate and share roles appropriately (Table 1). Table 2 lists specific policy measures for alleviating these barriers. The above classification of barriers focuses solely on “parents” rearing children, but it is also important to provide an “environment in which children themselves can travel and participate in out-of-home activities safely and comfortably” to increase the quality of life for child-rearing “households.”

Furthermore, Table 3 classifies the daily travel and activities of child-rearing parents, focusing on the presence of children. Parents with infants and young children who cannot be alone have to leave their children at nurseries or ask others to watch them when they “travel without children (A)” or “participate in activities without children (B).” Policy measures such as providing diverse childcare services to realize “environments where parents alone, without children, can participate in out-of-home activities” are necessary for parents to do (A) and (B). On the other hand, when they “travel with children (C)” or “participate in activities with children (D),” “environments where parents with children can participate in out-of-home activities safely and comfortably” are essential. The most important element here may be to provide parents with “alternatives” to choose A or C or B or D; for example, it would be ideal to allow parents either to “go shopping with children (A)” or “go shopping alone asking someone to see children (C)” or give them the choice between “participating in an academic conference using onsite daycare service (B)” or “leaving children home and participating in the conference alone (and drinking at night) (D).” It is also important to provide parents with alternatives for the execution, timing, location, and travel mode of traveling with children (C) and doing activities with children (D); possible choices include the “choice among using extended childcare service, asking a friend to pick up a child, or asking a shuttle service, etc., when a parent has to work unexpected overtime, making it difficult to pick up a child by the normal nursery pick-up time,” the “choice between going shopping with children or e-shopping at home,” and the “option of working at home when a child has a cold and there is no room at daycare with medical doctors.” From the perspective of city planning and transportation planning, especially, it is important to provide options for different timing, activity destinations, and modes by adjusting the locations and opening.
hours for activity opportunities and providing multi-modal transportation alternatives. For example, it would help parents if they did not need to go to a specific destination with children by train, bus, or tram during peak hours but could instead satisfy similar activity demands at different times and destinations by different travel modes. Maintaining a desirable “balance between work and life” that allows mothers and fathers to choose a “work style that is friendly for child-rearing parents” would be one of the most important elements in establishing cities and transportation that accommodate well to child-rearing households.

4. Comparison of attitudes toward travelers with children between Japan and other countries

Raising public awareness and understanding of child rearing is very important. To examine awareness and understanding of child rearing...
around the world, I will introduce some interesting results of a web-based questionnaire conducted in December 2012 and January 2013 of people who were in their twenties through their forties and living in six metropolitan areas in six countries (Tokyo, Japan; Seoul, Korea; Greater London, the United Kingdom; Île-de-France, France; Berlin/Brandenburg, Germany; and Stockholm County, Sweden). Respondents were monitors of an online marketing research company, Rakuten Research, Inc. The number of respondents was 300 (50 individuals for 6 groups of men in their 20s, 30s, 40s and women in their 20s, 30s, 40s) for each country [25].

Fig. 2 shows the percentage of parents who were treated kindly by nearby passengers when traveling with a stroller on public transportation. In Japan, more than 50% of respondents were not treated kindly, but the percentages of respondents from other countries who were treated kindly (other passengers “helping the respondent getting on/off the vehicle,” “letting the respondent get on/off first,” “giving the respondent a seat,” “giving the respondent extra space,” or “making the respondent’s child smile”) were higher than those in Japan. On the other hand, Fig. 3 shows the percentages of respondents who were kind to stroller users. Although 30% to 40% of respondents in Japan answered that they “made extra space for stroller users” and “let stroller users get on/off first,” the percentages in Japan were lower than in other countries, and the percentage of respondents who indicated that they were not particularly kind was much higher in Japan than in other countries.

Fig. 4 shows how often stroller users folded up their strollers on the bus, train, or tram. Although rush-hour congestion levels on public transportation differ among the six metropolitan areas, more than 80% of respondents in Japan and Korea answered that they folded up their strollers every time or during rush hours, but more than 50% in Sweden and Germany answered that they never folded their strollers. Fig. 5 shows how often stroller users avoided riding the bus, train, or tram during rush hours. More than 80% in Japan and Korea answered that they always or often avoided doing so, but the percentages were very low in four other countries.

Given the differences in nationality and culture among Japan and other countries, the simple aggregation results above might reflect that people face more physical and psychological barriers when using strollers on public transportation in Japan than in other countries. This would suggest the need for not only improving the public transportation environment but also raising public awareness and understanding of stroller users.

5. Recent activities for raising public awareness of child rearing in Japan

It is important and useful to provide information on how to go out with young children, inform people about barriers in public transport, and educate stroller users and others. There are several activities aimed at instructing stroller users about the safe use of the stroller when going out and using public transportation. For example, a Tokyo organization that focuses on child-rearing support conducted a campaign about the safe use of strollers at train stations [26] by designing a poster and putting it at train stations. Another example is an activity organized by the research committee on child-growth/rearing, a part of the Japanese Association for an Inclusive Society. It published a book that gave child-rearing parents information on going out with strollers via various travel modes such as walking, bicycle, bus, train, car, taxi, etc. [27]. The committee organized seminars about going out with children (in 2009), going out by bicycle with two children (in 2010), and traveling with children by public transportation (in 2011 and 2012) [28]. Some local governments, such as Arakawa City, work to raise public awareness of barrier-free and accessible design, including approaches for wheelchair users and stroller users [29].

The MLIT committee on stroller use on public transportation campaigned in May 2014 to raise public awareness. A total of 41 railway operators and 160 bus operators, as well as shipping facilities, airports, shopping centers, and childcare NPOs all over Japan, joined the campaign [30], during which posters explaining the barriers that stroller users face when using public transportation were displayed in railway stations, on trains and buses, at shopping centers, etc. (Fig. 6). The committee has also encouraged broader use of the new stroller sign (Fig. 7) nationwide. Some public transportation operators have already put the stroller sign on train cars (Fig. 8).

In March 2014, a research project called “Cities and Transportation for Increasing the QOL of Child-Rearing Households” at Japan Transport Policy Research organized a symposium on accessible cities for child-rearing parents [31] with substantial support from the Kanto District Transport Bureau. About 40 participants, including child-rearing parents, joined the following three courses (Fig. 9):

- Instruction on how to use a stroller safely;
- Instruction on how to get on/off bus with a stroller; and
- Instruction on how to carry a baby in a sling.

After the courses, there were presentations about how public transportation companies in Japan deal with stroller users and what the MLIT committee had been discussing. Child-rearing parents learned safer and more comfortable ways to go out and travel with young children, while other participants learned about the barriers that parents with young children face when going out. A questionnaire for participants at the end of the symposium showed that many participants better understood how to go out with children safely and comfortably. They also recognized the importance of cities and transportation for child-rearing households and the need for these kinds of events in raising public awareness of child rearing.

6. Conclusion

This paper discussed accessible cities and transportation for child-rearing households in Japan. Child-rearing parents face a variety of barriers in their daily lives. I argued the need for creating two environments where parents can travel and participate in out-of-home activities “with children” and “without children” by mitigating the barriers under role assignments and encouraging the cooperation of relevant stakeholders. Especially in Japan, compared with other countries, the public attitude toward child rearing and traveling with children has yet to fully mature. To realize accessible cities and transportation for child rearing, efforts to raise public awareness of child rearing could be most important in Japan.

Lastly, I propose several future research goals that could be useful in establishing cities and transportation that are friendly for child-rearing households. The first one is to get a better understanding of the activity-travel behavior of child-rearing households and attitudes toward barriers in childcare, focusing on different household characteristics in different cities. The usefulness of policy measures depends on the different specific characteristics of city size, population, geography, meteorology, transportation system, land-use system, socio-economic characteristics of households, etc. As mentioned in Section 2, travel demand is derived from activity demand, determined by lifecycle stage. The activity demand of child-rearing households also differs depending on household structure, children’s attributes (sex, age, and the number of children), the work style of the husband and wife, the local community, etc. In order to provide appropriate environments for participating in out-of-home activities in different city locations, it is crucial to understand the travel behavior of child-rearing households and attitudes toward barriers. It is also necessary to discuss which kinds of economic support—subsidies for bicycles that can accommodate children and reduced fares for public transportation users with children, for example—are best for each city. There is also a need for deeper investigations into the relationships between urban structures/built...
environments and the travel behavior of child-rearing households. For example, we have to determine whether compact cities are helpful for child-rearing households because parents can shop and transport children more easily. Analyses of this sort would require methodologies for evaluating the quality of life of child-rearing households quantitatively.

While the built environments of cities and transportation systems continue to improve, new travel support items have also emerged. For example, large-sized strollers imported from European countries have been popular in Japan recently. These types of strollers can be problematic, however, when users are on the Japanese transportation system; large-sized strollers cannot be folded in the same way as strollers made in Japan, for instance. Japanese consumers demand strollers that are lightweight, easily foldable, and affordable—characteristics that are different from stroller features in many European countries. In Japan’s aging society, meanwhile, more and more elderly people are using travel assistant technologies like walkers, walking sticks, powered wheelchairs, and personal mobility devices. We have to address how city and transportation system should accommodate these new types of travel support items in public spaces, shopping centers, and railway stations.

Lastly, research on developing effective methods for raising public awareness of child rearing and travelers with children is a key. There are gaps in attitudes toward child rearers among different generations, and the past twenty to thirty years have seen the built environments of cities, transportation systems, and attitudes toward child rearing undergo dramatic changes [32]. Thirty years ago, for example, carrying a baby in a sling was the standard way for parents to go out with children, and it was very difficult for stroller users to use public transportation [33]. People who were raising children two or three decades ago thus might think that parents using strollers nowadays are behaving rudely in public spaces. In order to enhance the accessibility of transportation systems and activity opportunities more effectively, it will be vital to raise public awareness of child rearing and parents with children. There are many successful practices that can change people’s attitudes and behavior in the field of mobility management and traffic safety. We have to learn more from these good practices.

References