

Sustainable Mobility in an Ageing Society: Theoretical Perspectives on Economic Transformation and Policy Design for Transport System Renewal

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Abstract

Population ageing is hastening structural changes in national economies and is becoming a pivotal factor in the course of economic transformation. This paper formulates a theory-driven analysis of the intersection between ageing-related mobility requirements and the dynamics of economic restructuring, technological advancement, and changes in productive capacity. Utilizing transport economics, political economy, welfare theory, and ecological modernization, the analysis frames sustainable mobility for older adults as both a social necessity and a catalyst for extensive economic transformation. The paper examines the impact of fiscal instruments, pricing frameworks, regulatory frameworks, and strategic public investment on mobility behaviour, sectoral innovation, and the allocation of social and environmental costs. The study evaluates the efficacy of accessible public transport, demand-responsive mobility systems, and assistive technologies in mitigating spatial exclusion while facilitating productivity enhancements, increased labour market participation among older adults, and structural diversification within the transport and technology sectors, through the synthesis of comparative empirical evidence from various economic contexts. The results show that a consistent economic policy across urban development, transport planning, public finance, and innovation strategy is needed to build mobility systems that help people adapt to changing demographics and grow with low emissions. The paper concludes by proposing an integrated conceptual framework that aligns distributive justice, long-term efficiency, and decarbonization objectives with national strategies for economic transformation. This contributes to theoretical discussions on inclusive mobility governance and the evolving economic organization of ageing societies.

Keywords: Ageing Society, Economic Transformation, Inclusive Transport Policy, Public Transport Accessibility, Sustainable Mobility, Transport Economics

1. Introduction

One of the most important structural changes that is happening in today's economies and societies is that the population is getting older. Besides its demographic impact, ageing is increasingly acknowledged as a catalyst for economic reorganization, altering demand patterns, labor participation, service delivery, and public spending. In this context, mobility systems are very important because they affect how active older people can be in terms of work and social life, how they can get to services and markets, and how they can deal with changes in their lives. Because of this, transportation policy is very important at the crossroads of changing the economy, making society more sustainable, and making business decisions.

Mobility is a key factor in determining quality of life in later years, as it facilitates access to healthcare, retail, social networks, and opportunities for engagement in community and economic activities. A significant body

of research indicates that when mobility options are limited, older adults encounter increased risks of social exclusion, diminished autonomy, and declining well-being. These results have effects that go beyond the well-being of individuals; they affect the demand for health and care services, how people spend their money, and the long-term viability of welfare systems. Consequently, mobility limitations in older adults can be perceived not merely as social obstacles, but also as catalysts of economic inefficiency.

Along with population ageing, there are also bigger changes happening in the economy and technology, such as digitalization, decarbonization, and changes in how service industries are set up. These processes have an effect on transportation systems and are also a part of them. Digital mobility platforms, demand-responsive transport, and new service models aimed at older users are all changing the mobility sector. These changes are opening up new business strategies and opportunities

for innovation, but they also raise concerns about accessibility, equity, and governance.

In light of changing demographics, European and national policy frameworks are increasingly recognizing the strategic significance of inclusive and sustainable mobility. The EU Urban Mobility Framework and national strategies for sustainable and inclusive mobility are examples of projects that focus on accessibility, social inclusion, and environmental sustainability as their main goals. Nonetheless, the translation of these principles into transportation systems that adequately address the mobility needs associated with ageing presents a formidable challenge, especially considering fiscal limitations, spatial disparities, and diverse user capabilities.

In this context, this paper formulates a theory-driven analysis of sustainable mobility in ageing societies that directly addresses discussions regarding economic transformation and business strategy. The paper analyzes how mobility systems can facilitate active ageing while advancing overarching goals of economic adaptation, innovation, and sustainability, by integrating perspectives from transport economics, accessibility theory, social exclusion research, and wellbeing studies. The analysis centers on three interconnected inquiries: the influence of mobility and accessibility on wellbeing and participation in later life; the persistence of exclusion within current transport systems despite policy pledges to inclusivity; and the alignment of policy responses and innovative mobility solutions with long-term economic and strategic objectives.

The rest of the paper is set up like this. Section II builds the idea of how mobility, accessibility, wellbeing, and social exclusion are all connected in later life. Section III looks at the main problems that make it hard for older people to use public transportation. Section IV looks at policy responses and new ways to get around, focusing on their effects on governance and strategy. Section V talks about the results in relation to economic change and mobility governance. Section VI ends by talking about what these results mean for inclusive growth and long-term development in societies that are getting older.

2. Conceptual Framework: Mobility, Accessibility, and Well-Being in Later Life

The conceptual framework of this paper is based on interdisciplinary transport theory that connects

mobility to quality of life, accessibility, social exclusion, and wellbeing in later life. Instead of viewing mobility as an end in itself, the literature characterizes it as an instrumental capability that allows older adults to fulfill basic needs, uphold social roles, and assert autonomy (Metz, 2000; Banister and Bowling, 2004). Mobility is thus perceived as a socially embedded phenomenon influenced by institutional frameworks, spatial configurations, and individual competencies.

The section is made up of a series of analytical building blocks, each of which is linked to a different but related group of paragraphs. The first set of paragraphs looks at how mobility can improve quality of life and subjective well-being by allowing people to be independent, participate, and be included in society as they get older. The second set of paragraphs talks about accessibility theory and capability-oriented views. It explains how spatial conditions, functional capacities, and system design all work together to affect mobility opportunities. The third group of paragraphs talks about mobility disadvantage in terms of transport-related social exclusion. It focuses on structural inequalities and life course transitions that make it harder for older adults to get to opportunities. The fourth group talks about how behavior changes over time, with a focus on habits and changes in mobility in later life and how they affect adaptation or exclusion. The last group of paragraphs talks about how wellbeing and accessibility issues fit in with sustainability goals. It puts the mobility needs of older people within the context of current transportation policy and decarbonization goals. These components collectively establish a cohesive theoretical framework for examining inclusive mobility in ageing societies.

II A. Mobility as a factor influencing quality of life and wellbeing

This subsection delineates the theoretical connection among mobility, quality of life, and subjective well-being in later life. Foundational research in transport studies has established mobility as a fundamental factor influencing the quality of life in older adults, highlighting its significance in fostering independence, self-esteem, and social engagement (Metz, 2000; Musselwhite and Haddad, 2010). Mobility is not merely a physical phenomenon; it is essential for preserving autonomy and fostering meaningful societal engagement.

Based on this view, Metz thought of mobility not just as how people travel, but also as the ability to do things that are important to them. In this context, perceived mobility options and confidence in utilizing available transportation are as significant as actual travel for quality of life outcomes (Metz, 2000). Banister and Bowling conceptualized transport as a mediating variable between ageing and quality of life, illustrating how diminished mobility can hasten social withdrawal and diminish life satisfaction (Banister and Bowling, 2004).

Subsequent research explicitly connected mobility to more general wellbeing outcomes, building on these insights. Stanley and colleagues formulated a conceptual model positing that mobility enhances social inclusion, which subsequently fosters well-being across various life domains (Stanley et al., 2011). Nordbakke and Schwanen enhanced this argument by illustrating that unfulfilled travel needs, rather than merely low mobility levels, are significantly correlated with diminished wellbeing in later life (Nordbakke and Schwanen, 2014). This change in focus has big effects on both theory and policy because it puts access to important and meaningful activities ahead of maximizing mobility.

II-B Accessibility Theory and Capability-Oriented Frameworks

This subsection presents accessibility theory as a primary analytical framework for comprehending mobility limitations in ageing societies. Accessibility transcends a limited emphasis on transportation supply by incorporating land use patterns, transportation systems, individual competencies, and temporal limitations (Páez et al., 2012). This approach is especially pertinent for older adults, whose mobility is influenced by both environmental factors and age-related functional alterations.

Páez and associates differentiate between positive and normative frameworks of accessibility, the latter encompassing explicit value judgments concerning equity and minimum acceptable standards (Páez et al., 2012). Normative accessibility perspectives are particularly significant in the context of ageing, as they facilitate the assessment of whether transportation systems adequately address the requirements of populations experiencing diminished physical or cognitive capacity.

From a relational standpoint, accessibility in later life arises from the interplay between individual capabilities and the design of transportation systems and public spaces. Musselwhite and Haddad contend that accessibility should be comprehended in relation to how environments facilitate or impede the functional independence of older adults (Musselwhite and Haddad, 2010). Empirical evidence corroborates this perspective, as Ravensbergen and colleagues demonstrate that traditional accessibility metrics frequently underestimate the obstacles encountered by older adults by neglecting factors such as walking distances, transfer complexity, safety perceptions, and information usability (Ravensbergen et al., 2022).

These insights correspond with capability-oriented perspectives, wherein mobility is esteemed to the extent that it facilitates individuals in attaining valued activities and social roles. In this context, deteriorating health or inadequate digital skills do not necessarily result in diminished well-being, provided that compensatory mobility solutions, such as accessible public transportation or adaptable services, are accessible (Luiu et al., 2017; Marešová et al., 2023).

II-C Transport-Related Social Exclusion and Ageing

This subsection defines mobility disadvantage in later life as a form of social exclusion related to transportation. Church and colleagues characterized transport exclusion as a complex phenomenon resulting from the interplay of transportation systems, spatial configuration, and social disparities (Church et al., 2000). This framework is especially pertinent for older adults, whose mobility restrictions frequently coincide with financial constraints, health deterioration, and residential placement.

Lucas further developed the idea by showing how transportation can both cause and result in social exclusion, and by stressing the need for fair distribution and fair procedures in transportation policy (Lucas, 2012). From this viewpoint, insufficient transportation provision not only limits access to opportunities but also perpetuates broader trends of social marginalization.

In later life, transport-related exclusion is often initiated by life course transitions, including retirement, deteriorating health, or the cessation of driving. Siren and Haustein demonstrate that relinquishing car ownership can significantly affect daily mobility, social engagement, and personal identity, especially in

environments marked by pronounced car dependence (Siren and Haustein, 2015). Shergold and Parkhurst further illustrate that these effects are particularly significant in rural regions, where alternatives to private vehicle usage are constrained (Shergold and Parkhurst, 2012).

Significantly, exclusion is not exclusively dictated by the objective availability of services. Qualitative research suggests that fear, perceived insecurity, and diminished confidence may cause older adults to refrain from utilizing public transportation. Dilian and colleagues demonstrate that emotional and psychological factors, such as fear of falling or harassment, can compel older adults to cease utilizing public transportation, despite the continued technical availability of services (Dilian et al., 2025).

II-D. Changes in habits, behavior, and mobility in old age

This subsection analyzes later life mobility through the framework of behavioral theory and habit formation. Schwanen, Banister, and Anable contend that travel behavior is predominantly influenced by habits ingrained in daily routines and social practices, rather than by discrete rational decisions (Schwanen et al., 2012). These habits can help keep things stable, but they can also make it harder to change when things do.

In later life, events like health problems, the death of a loved one, or losing a license can change established patterns of mobility, making it more likely that people will be left out. At the same time, these kinds of changes can lead to changes in behavior if there are good options available. During these times of change, it is very important to have easy-to-use public transportation, clear information, and helpful institutional arrangements.

To understand how mobility changes in later life, you need to think about timing, adaptability, and support from policies. Older adults may suffer sudden and lasting loss of mobility if they don't get help in time. On the other hand, travel training, easy-to-find information, and slowly switching modes can all help make mobility pathways that are more durable and long-lasting (Musselwhite and Haddad, 2010; Luiu et al., 2017).

II-E. Combining health, accessibility, and sustainability

This last part puts mobility and well-being in the context of bigger policies on transportation and sustainability. Inclusive public transport systems can

meet the mobility needs of older adults, cut down on the use of private cars, and help with decarbonization goals at the same time (European Commission, 2021; Ministero delle Infrastrutture e dei Trasporti, 2022).

Empirical evidence indicates that inclusiveness and sustainability objectives can be mutually reinforcing. Nilsson and colleagues demonstrate that older adults' satisfaction with public transport is affected not only by service quality but also by digitalization and environmental concerns. This suggests that older users may endorse sustainable transport transitions when systems are viewed as accessible and reliable (Nilsson et al., 2025).

Collectively, these theoretical perspectives endorse a comprehensive conceptual framework that perceives mobility as a socially embedded capability that facilitates the interplay between accessibility, wellbeing, and social inclusion in later life. This framework serves as the analytical basis for investigating obstacles to public transport utilization and for assessing policy initiatives designed to develop sustainable and inclusive mobility systems for ageing populations.

3. Obstacles to Public Transport Utilization Among Seniors

This part goes into great detail about the main reasons why older people don't use public transportation, using the ideas from the last part as a starting point. Instead of seeing these barriers as separate problems, the analysis sees them as connected parts of transport disadvantage that work together to affect mobility outcomes later in life. Physical and sensory limitations, perceptions of safety, spatial disparities, and challenges associated with digitalization interact with individual competencies and life-course transitions, frequently culminating in cumulative exclusion.

The first and most important set of barriers has to do with how easy it is to get to places physically and with your senses. As people get older, they often have trouble moving around, balancing, seeing or hearing, and have long-term health problems. All of these things can make it harder to use public transportation on your own. It can be very hard to reach stops, get on and off vehicles, keep your balance while traveling, or find your way around complicated interchange areas. This can make you less confident and more dependent on help. Research on the travel experiences of visually impaired individuals demonstrates that insufficient tactile

guidance, inadequate lighting, ambiguous signage, and inconsistent audio information can convert ordinary journeys into stressful or hazardous situations, thereby deterring independent travel (Hine & Mitchell, 2001).

Even though there has been progress in regulation, such as the passing of the European Accessibility Act, there are still big gaps between formal accessibility standards and how users actually experience them. Even if vehicles and stations meet the minimum technical standards, they can still be hard to use because of things like steep grades, platform gaps, a lack of seating, or time limits when boarding and getting off. These kinds of mismatches show how limited compliance-driven approaches are and how important it is to design with users in mind and keep an eye on accessibility from the point of view of older users (European Parliament and Council, 2019).

A second important part of transport disadvantage has to do with how people feel about safety and fear. In addition to objective circumstances, subjective evaluations of risk significantly influence public transport utilization in later life. Older people may think that public transportation is unsafe even when the rates of accidents or crimes are low because they are worried about falling, crime, harassment, or antisocial behavior. These feelings are often made worse by crowded vehicles, sudden driving styles, not enough staff, bad lighting at stops, and complicated station layouts.

Qualitative evidence indicates that fear can serve as a significant catalyst for self-exclusion from public transportation. Dilian and colleagues demonstrate that older adults may gradually diminish or completely discontinue the use of public transportation after experiencing adverse incidents or near-misses, such as falls or instances of harassment (Dilian et al., 2025). This withdrawal often leads to greater reliance on family members, diminished engagement in social activities, and increased susceptibility to isolation, thereby reinforcing the correlation between mobility loss and deteriorating well-being.

Older adults are less likely to use public transportation because of spatial and service-related inequalities. Services are available, frequent, and reliable in very different ways in cities, suburbs, and rural areas. In rural or peripheral areas, public transportation may not be practical for meeting daily needs because service coverage is limited and schedules are not very

frequent. Even in cities, cutting back on services, changing the way the network works, or focusing services around peak-hour demand can hurt older adults more than younger adults, whose travel patterns are spread out over the course of the day (Curl et al., 2014; Shergold & Parkhurst, 2012).

These spatial disparities influence automobile dependency and the cessation of driving. For many older adults, especially those who live in places where cars are the main mode of transportation, losing the ability to drive is a big change in their mobility that has a big effect on their independence and sense of self. When there are not enough good public transportation options or people think they are not good enough, stopping driving can quickly lead to a decline in mobility and social withdrawal (Siren & Haustein, 2015). This underscores the significance of perceiving transport disadvantage as a systemic concern associated with spatial planning and long-term investment trends.

Digitalization is becoming an increasingly important and confusing barrier in modern public transportation systems. The widespread use of digital ticketing, app-based journey planning, and real-time information has changed how services are delivered, usually making them more efficient and flexible. But these changes can also make it harder for older people who don't know much about technology, can't get it, or aren't sure how to use it. When digital interfaces take the place of traditional channels instead of adding to them, older users may have trouble buying tickets, getting information, or dealing with service interruptions.

Empirical studies indicate that digitalization can improve satisfaction among older users when systems are intuitive, dependable, and accompanied by clear non-digital alternatives (Nilsson et al., 2025). On the other hand, poorly designed digital systems can make stress worse and make people less likely to use them, especially if they already have physical or mental limitations. The digital divide is not a separate issue; it is connected to other barriers that make existing inequalities worse.

These barriers show that older adults don't usually have trouble with public transportation because of just one thing. Instead, it comes from the combined effects of physical limits, personal perceptions, spatial inequalities, and changes in technology, all of which are part of larger institutional and policy contexts. To get past these barriers, we need to use integrated and

anticipatory strategies that go beyond just fixing technical problems. This is because mobility needs become more complicated as we get older.

4. Policy Responses and Innovative Mobility Solutions

This section looks at policy responses and new ways to help older people who have trouble getting around. This section builds on the conceptual framework and the study of obstacles to using public transportation. It looks at how transportation policy, service design, and new technologies can make life better for older people by making it easier for them to get around and improving their health. Instead of talking about separate actions, the discussion stresses the need for coordinated and context-sensitive approaches that include public transportation, flexible services, and helpful technologies in larger frameworks for mobility governance.

The section is based on three different but related parts of policy and practice. It first looks at demand responsive transport as a way for the public sector to fill in gaps in spatial and functional accessibility. Then it talks about private and semi-formal mobility services that offer both transportation and social support, pointing out both their strengths and weaknesses. Lastly, it looks at how digital and active mobility solutions can help people be more independent and healthy, while also thinking critically about issues of fairness and inclusion.

IV-A. Transportation that responds to demand and public services that are flexible

Demand responsive transport is one of the most common policy responses to unmet mobility needs among older adults, especially in areas with low population density or not enough services. These kinds of services can work well with traditional fixed-route public transportation by letting users choose their own routes and schedules. They can also make it easier for people with limited mobility to get from door to door or stop to stop. From a policy standpoint, demand-responsive transport is frequently rationalized as a method to enhance both equity and efficiency concurrently, by aligning supply with actual demand while broadening service coverage.

Evidence from real life shows that well-designed demand-responsive systems can give older users more freedom and make them less lonely. Burlando's study of the SilverBus project shows that demand-responsive

services aimed at seniors can make it easier for them to get to medical appointments, go shopping, and participate in social activities, all while keeping costs down through shared rides and digital coordination. But these kinds of services only work well if they are easy to use, affordable, and work well with regular public transportation. When demand-responsive transport functions in isolation or depends too much on digital interfaces, it risks perpetuating exclusion instead of mitigating it.

From a governance point of view, demand-responsive transport needs stable public funding, clear rules, and coordination between the transportation and social service sectors. If these things don't line up, services might stay pilot projects instead of becoming permanent parts of systems that make mobility accessible to everyone.

IV-B. Private driving, companionship, and hybrid mobility services

In addition to government programs, a number of private and semi-formal mobility services have started to meet the specific needs of older adults. These include private chauffeur services, ride assistance, and transportation services that offer mobility, social interaction, and practical help. People often like these kinds of services because they are reliable, customizable, and make them feel better.

Studies on private chauffeuring and companionship services underscore their potential benefits for wellbeing, especially among older adults experiencing diminished confidence or intricate needs. Latiff and Mohd demonstrate that these services can enhance autonomy and social engagement by alleviating the anxiety linked to solo travel and offering companionship during journeys. But depending on market-based solutions brings up important issues about cost, availability, and fairness. These services are frequently accessible solely to affluent demographics and may intensify socioeconomic disparities if not incorporated into comprehensive policy frameworks.

From a policy point of view, hybrid models that mix public funding with private provision may be a fairer way to go. To make sure that the services are good, the users are safe, and the models fit with public goals related to inclusion and sustainability, they need to be carefully regulated.

IV-C. Digital Mobility Apps and Programs for Active Ageing

Digital technologies and active mobility initiatives have been increasingly advocated as instruments for fostering independence and well-being in later life. Digital mobility apps, like journey planning tools and walking apps, can help people get more exercise, give them information, and make them feel more confident about getting around in public transportation. From a public health standpoint, these tools are frequently associated with active ageing strategies that prioritize prevention, autonomy, and social involvement.

There is still mixed evidence on how well these kinds of apps work. Reviews of walking and mobility apps suggest possible advantages for physical activity and well-being, yet they also highlight constraints concerning usability, prolonged engagement, and digital literacy. Llopis and colleagues demonstrate that walking applications may facilitate active ageing for certain older adults; however, their effectiveness is contingent upon design characteristics, motivational techniques, and the degree to which they are integrated within supportive social and environmental frameworks.

Policy frameworks are starting to see that digital innovation needs to be in line with goals for accessibility and inclusion. Communication and public health campaigns can help people adopt, but they need to be carefully planned so they don't make the digital divide worse. To make sure that technological innovation really helps make mobility more sustainable and accessible for older people, it's important to combine digital tools with non-digital ones, personalized support, and design principles that include everyone.

5. Frameworks for Governance and Strategic Alignment

This part looks at the governance aspects of sustainable mobility in societies with a lot of older people. It focuses on how institutional coordination, policy integration, and strategic alignment affect how older people move around. Here, governance is not just the ability to run things; it is also the formal and informal ways that transport systems are planned, funded, regulated, and evaluated in relation to larger social and economic goals. In the context of an ageing population, governance is a key factor in deciding whether mobility systems work as tools for inclusion and economic adaptation or as tools that keep people out and make things less efficient.

A major problem with governance is that policies are too spread out. Transport planning, land-use regulation, social policy, public health, and digital governance all have an effect on how easily older people can get around. Nonetheless, these areas are frequently managed by distinct institutional silos, resulting in inadequate coordination of goals, funding sources, and performance standards. Studies on transport-related social exclusion indicate that this fragmentation leads to enduring accessibility deficiencies, as transport services are seldom coordinated with the spatial allocation of healthcare, social services, and essential goods (Church et al., 2000; Lucas, 2012). In ageing societies, this lack of integration becomes especially problematic because limitations on mobility lead directly to more reliance on care and higher public spending.

Planning that focuses on accessibility is an important way for governments to deal with these problems. Instead of focusing on network efficiency or peak-hour performance, accessibility approaches focus on minimum service standards, fairness, and making sure that all groups of people can get to important activities (Páez et al., 2012; Ravensbergen et al., 2022). From a governance standpoint, this signifies a transition from project-oriented transportation investment to outcome-focused planning, where success is assessed based on social participation, well-being, and inclusion. For this kind of change to happen, politicians need to be committed, appraisal methods need to be changed, and institutions need to be able to make accessibility goals part of all areas of work.

This trend is becoming more common in European and national policy frameworks. The EU Urban Mobility Framework makes it clear that social cohesion, accessibility, and inclusiveness are important parts of a sustainable mobility policy. It also connects transportation investment to changes in population and climate goals (European Commission, 2021). Likewise, national strategies for sustainable and inclusive mobility stress the importance of aligning transport planning with objectives of social and territorial cohesion (Ministero delle Infrastrutture e dei Trasporti, 2022). But for these frameworks to work, they need to be turned into binding rules, stable funding sources, and measurable performance indicators at the local and regional levels.

Strategic alignment is also very important when it comes to providing services and coming up with new

ideas. Governance structures that strike a balance between flexibility and fairness are needed for demand-responsive transport, digital mobility platforms, and hybrid public-private services. Evidence indicates that the introduction of such services as isolated pilots or their reliance on market dynamics may exacerbate spatial and socio-economic inequalities (Burlando, 2025; Latiff & Mohd, 2023). So, good governance means adding new services to public transportation systems while making sure they are affordable, work with each other, and are always available, especially for people who don't have a lot of money or digital skills.

Digitalization presents distinct challenges for governance. Digital tools can make things work better and make the user experience better, but they can also cause problems with exclusion, data governance, and accountability. Studies on the experiences of older adults with digitalized public transport underscore the necessity of preserving non-digital access channels and offering institutional support for digital inclusion (Nilsson et al., 2025; Dilian et al., 2025). Digital governance must therefore align innovation objectives with accessibility requirements and user protection from a strategic standpoint, rather than treating digitalization as a purely technical upgrade.

Governance frameworks must also consider the temporal aspects of mobility. Mobility limitations related to ageing often develop gradually during life-course transitions; however, policy responses are generally reactive and compensatory. Behavioral research demonstrates that timely interventions during critical transitions, such as retirement or cessation of driving, can profoundly affect long-term mobility trajectories (Schwanen et al., 2012; Luiu et al., 2017). Anticipatory governance strategies that facilitate gradual adaptation, such as travel training or integrated service design, are crucial for averting sudden mobility loss and its concomitant social costs.

Lastly, participatory governance is an important part of strategic alignment. Older adults are often regarded as passive recipients of transport policy instead of informed stakeholders. Qualitative research, however, shows that older users have a lot of firsthand experience with the problems, dangers, and ways to deal with them in transportation systems (Dilian et al., 2025; Musselwhite & Haddad, 2010). Integrating this knowledge into participatory planning and evaluation processes can improve policy effectiveness, legitimacy,

and alignment with actual needs, while also fostering innovation that is socially rooted rather than technology-centric.

In conclusion, governance frameworks for sustainable mobility in ageing societies must balance several goals, including efficiency, fairness, innovation, and sustainability. To make this work, we need integrated institutional arrangements, planning based on accessibility, strategic oversight of innovation, and participatory approaches that see older adults as active players in mobility systems. From an economic transformation point of view, these kinds of governance frameworks are necessary for mobility systems to help growth that includes everyone, ease long-term welfare pressures, and change with the times in a way that is socially and economically sustainable.

6. Discussion

This section synthesizes the theoretical framework and empirical findings from preceding sections, rigorously analyzing their ramifications for mobility governance, economic transformation, and strategic policy formulation in ageing societies. The discussion does not repeat individual findings; instead, it looks at the bigger picture that comes from the interaction between mobility systems, changes in demographics, and changes in economic structures.

The initial significant insight pertains to the conceptualization of mobility in later life as a socially embedded capability rather than merely a behavioral outcome. The analysis substantiates that accessibility, perceived usability, and confidence are more significant for wellbeing and participation than overall travel levels. This supports the importance of accessibility-focused and capability-based frameworks, which go against traditional ways of planning transportation that focus on speed, efficiency, and peak-hour demand. From an economic standpoint, ongoing unmet mobility needs signify a misallocation of resources, as they hinder older adults' engagement in markets, services, and social activities, consequently diminishing the effective utilization of human and social capital.

The conversation also makes it clear that social exclusion related to transportation is a structural problem. Barriers to public transport utilization among older adults are not arbitrary or anomalous; rather, they are intricately associated with long-term spatial planning decisions, service prioritization, and

institutional norms that favor work-related travel over discretionary and caregiving trips. Transitions in life, like retirement, health problems, or stopping driving, show these structural biases, which often lead to sudden loss of mobility. This indicates that exclusion is ingrained in the structure of transportation systems and mirrors overarching economic and social priorities. To address this, transport policy needs to be changed so that it focuses on distributive justice, minimum standards for accessibility, and sensitivity to people's life courses.

In this context, innovation and digitalization are both good and bad things. Demand-responsive transport, digital platforms, and new mobility services show a lot of promise for making things more flexible and responsive, especially in areas with low population density or that aren't well served. Nonetheless, the evidence indicates that innovation can produce novel forms of exclusion when technological solutions are implemented without sufficient regard for diverse capabilities. From a strategic point of view, this shows how important it is to make sure that innovation policy fits with principles of inclusive design, hybrid service models, and other forms of support that aren't digital. If not properly managed, technological progress could make existing inequalities worse instead of better.

The analysis also shows that there are important connections between mobility goals related to ageing and bigger changes in the economy. Inclusive mobility systems can help people stay active as they get older, live independently for longer, and lower the long-term need for intensive health and care services, which will help welfare systems last longer. Investing in public transportation that is easy to use, flexible services, and assistive mobility technologies can also encourage new ideas, create jobs, and open up new service markets at the crossroads of transportation, health, and care. These dynamics make mobility policy a strategic tool in economies that are getting older, with effects that go beyond just the transportation sector to include business strategy and regional development.

Governance becomes a pivotal theme in harmonizing these objectives. Disjointed policymaking in the areas of transportation, social policy, health, and economic development makes mobility interventions less effective and less likely to bring about real change. The results show that we need integrated and forward-thinking governance frameworks that can coordinate infrastructure investment, service delivery, pricing,

regulation, and innovation strategy. Such frameworks should prioritize uninterrupted access throughout the life course, facilitating gradual adaptation instead of depending on compensatory measures post-mobility loss.

Lastly, the conversation stresses how important it is to see older people as active economic and social agents instead of just people who need help getting around. Older users have different needs, preferences, and ways of dealing with problems, and their experiences can help with planning transportation and designing services. Involving older adults in planning, evaluation, and co-design processes can make policies work better and make sure that they are in line with the needs of the real world.

The discussion supports the idea that making transportation more sustainable in ageing societies is one of the biggest problems that needs to be solved in order to change the economy. It necessitates a re-evaluation of transportation systems as essential elements of the transforming economic structure of ageing societies, where objectives of accessibility, well-being, innovation, and sustainability must be tackled in a coordinated and mutually reinforcing manner.

7. Conclusions

This paper has analyzed sustainable mobility in ageing societies through a framework that is distinctly connected to discussions on economic transformation and business strategy. The analysis has shown that mobility in later life is not just a transportation policy issue, but also a strategic part of restructuring economies that are getting older (Metz, 2000; Banister and Bowling, 2004; Musselwhite and Haddad, 2010). This is because it brings together ideas from transport economics, accessibility theory, social exclusion research, behavioral studies, and wellbeing scholarship.

The paper has demonstrated, from a theoretical perspective, that mobility ought to be regarded as a socially embedded capability rather than merely a straightforward indicator of travel demand. Accessibility-oriented and capability-based approaches indicate that economic and social outcomes are less contingent on overall mobility levels and more on the ability of transport systems to facilitate older adults' access to services, market participation, and adaptation to life course transitions (Páez et al., 2012; Nordbakke and Schwanen, 2014). In this sense, social exclusion

related to transportation is not only a social risk but also an economic inefficiency that limits participation and raises long-term public spending (Church et al., 2000; Lucas, 2012).

These insights are especially important now that the population is getting older, which is changing how people spend their money, work, and use services, as well as how the government spends its money. As societies age, economic performance increasingly relies on the capacity of older adults to maintain mobility, autonomy, and active participation as consumers, volunteers, caregivers, and, in certain instances, employees. Research shows that losing the ability to move around and not being able to travel when you want to are linked to worse health and less social participation, which has wider effects on welfare systems and the need for care (Stanley et al., 2011; Siren and Haustein, 2015; Nordbakke and Schwanen, 2014).

The analysis also shows how the role of the transport and mobility sector is changing as the economy changes. Investing in public transportation that is easy to use, services that respond to demand, and mobility solutions that are open to everyone can encourage new ideas, support new service models, and help new markets that are at the crossroads of transportation, health, and care (Burlando, 2025; Latiff and Mohd, 2023). The literature also warns that without good governance, these kinds of changes could make inequalities worse or create new types of exclusion (Ravensbergen et al., 2022; Dilian et al., 2025).

The results indicate that goals pertaining to ageing, economic competitiveness, and environmental sustainability are not intrinsically at odds. Policies that prioritize accessibility, safety, and inclusivity for older adults can concurrently diminish automobile reliance, augment public transportation utilization, and facilitate decarbonization initiatives, in accordance with European and national policy frameworks (European Commission, 2021; Ministero delle Infrastrutture e dei Trasporti, 2022; Nilsson et al., 2025).

From a strategic governance standpoint, the paper emphasizes the necessity for proactive and holistic methodologies in mobility planning. Instead of waiting until mobility loss happens and then putting in place compensatory measures, policymakers and transportation providers should support gradual adaptation throughout a person's life, work on

changing behavior, and make sure that access stays the same during important transitions (Schwanen et al., 2012; Luiu et al., 2017). Participatory methods that include older adults as knowledgeable stakeholders can make policies even more effective and legitimate.

In conclusion, sustainable mobility in ageing societies should be acknowledged as a fundamental aspect of economic transformation and strategic planning. Policymakers and organizations can better deal with changes in demographics and promote growth, innovation, and environmental sustainability by making transportation systems more accessible, healthy, and fair. Future research should further investigate how different governance arrangements, appraisal frameworks, and institutional coordination mechanisms shape the capacity of mobility systems to support economic transformation and social inclusion in ageing societies.

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