DISABLED PEOPLE AND SUSTAINABLE CITIES - A BENEFICIAL RELATIONSHIP

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Abstract
People with disabilities comprise a growing part of the population and require specific services adjusted to their needs to achieve a higher quality of life. Access, equality and inclusion to employment, health system, education, transportation, new technologies, and social life are significant issues for disabled people and contribute to sustainability. The 2030 Agenda for Sustainable Development, a critical United Nations program, contains seventeen Sustainable Development Goals explicitly referencing disabled people. Cities that provide a favourable environment to disabled people tend to be more sustainable for the benefit of all, which is examined in the current study.

The online focus group technique was applied to collect the required information. Fifteen experts (n=15) from various relevant to the examined subject fields participated in the current study. A detailed analysis of the focus group discussion was applied.

The main findings show that the provision of accessible services and inclusion of disabled people in daily life offer social and economic benefits and positively contribute to environmental protection. To meet these targets, cities aligned with governments should provide a friendly framework and infrastructure to disabled people. The services offered by public and private organisations to disabled people must be based on the collection of analytical data about their level of disability, demographics, and needs. The use of advanced technologies such as 'smart devices' and 'smart packaging' facilitates the indoor and outdoor activities of disabled people. Cities providing high-quality services to those people can become more attractive tourism destinations. Although the services offered to disabled people require some costs, the social and economic benefits from their inclusion in daily life are outstanding.

The small sample of participants and focus on Greek reality limit the generalisation of the study's findings. Policy-makers, disabled people, their associations, and academicians can acquire significant insights from the current study.

Keywords: *Disabled people; sustainable cities; environment protection; social benefits; accessibility; assistive technologies; accessible tourism.*

Introduction

Disability is an essential issue in society and relevant academic multidisciplinary literature. This is "*a physical, mental, cognitive, or developmental condition that impairs, interferes with, or limits a person's ability to engage in certain tasks or actions or participate in typical daily activities and interactions*" (Merriam-Webster Dictionary, nd). According to the World Health Organization (WHO, 2021) report, over 1.3 billion people live with some form of disability, constituting the largest minority group in the world. This corresponds to about 17% of the world's population, with up to 190 million (3.8%) people aged 15 years and above facing significant movement difficulties and requiring health care assistance. About 93 million are children, and 720 million are adults with significant functional disabilities. In addition, 360 million people worldwide have moderate to profound hearing loss, 285 million people are visually impaired (39 million of whom are blind), and 75 million people need a wheelchair (of which only 5-15% have access to one) (Assistive Technology, 2016). A large proportion (about 80%) of people with disabilities (PwDs) are living in developing countries (WHO, 2011). Over 20% of the world's population will be over 65 years of age by 2050. All these figures will further increase mainly due to the ageing population and diseases, such as the growing number of chronic conditions like musculoskeletal and mental health disorders, cancer, and cardiovascular diseases, while a wide range of social and environmental factors limit disabled people's daily activities creating more problems to them (Ancell and Graham, 2016; WHO, 2011; WHO, 2018). However, it is difficult to count the PwDs numbers due to the difficulty of defining disability (Grovnik, 2009).

PwDs are excluded from health, transportation, education and employment systems, and a strong relationship between disability, dissatisfaction, and poverty is identified (Groce et al., 2011). Therefore, this group comprises many 'vulnerable people' (Van Berkel et al., 2017) who suffer from high unemployment (Markel and Barclay, 2009), leading to poverty. A discourse has been developed about social inclusion and integration of PwDs, while the interaction of health conditions with contextual, environmental and personal factors intensifies the disability (Levitas, 1996; Randle and Dolnicar, 2019). Social exclusion is a multidimensional issue due to problems and failures in the systems and structures of family, community and society (Smatrakalev, 2001). Therefore, policymakers and professionals should work on eliminating these prohibitive factors to improve PwDs' inclusion and participation in daily life.

Employment of PwDs is crucial to survival and participation in daily life. Public enterprises must employ PwDs to reduce unemployment (Birau et al., 2019). The promotion of vocational rehabilitation and full employment of disabled people could be a part of enterprises' Corporate Social Responsibility (CSR), and this increases society's prosperity and will benefit the company in return (Miethlich, 2019). Also, episodic disabilities can be efficiently handled by organisations' management, based on the collection of the required information concerning those people's problems in the work environment and the implementation of the proper workplace cultures that respond to these people's requirements, to improve those people inclusion and the sustainability of employment (Gignac et al., 2021). The main problems of PwDs employment (in Romania) are not the disability itself but the poor infrastructure, the low level of transportation system to move from/to the workplace and social stigma and discrimination, while the adoption of a more sustainable approach based on inclusive growth is required to minimise the unemployment of those people (Birau et al., 2019). The employment of PwDs provides valuable resources in the workforce, as the working ages of the population in European countries are minimised (Anghelescu et al., 2016); in addition, the technological improvements and the development of soft skills contribute to the increased employability in particular of youth with disabilities (UNESCO, nd). In addition,

age, education level and economic status influence the probability of PwDs employment (Wolniak and Skotnicka-Zasadzien, 2018). Therefore, the employment of PwDs should be facilitated as it significantly contributes to their well-being and satisfaction.

The PwDs' easy access to the health system and use of its services is vital, and barriers prohibiting these should be overcome. Training and awareness of healthcare employees about PwDs needs, the proper communication between employees and those people, the participation of the last in the decision-making, the adequate provision of health-related information to them (both in terms of availability and format), shorter waiting times and longer consultation times, offer friendly clinical environments, improved consistency of care services, and more excellent multidisciplinary quality services (Doherty et al., 2020).

Another critical issue is the provision to PwDs of opportunity to travel and actively participate in tourism. The tourism experience of PwDs minimises stress, improves the quality of life, enhances life satisfaction and increases their confidence, self-reliance and independence (Moura et al., 2018). The identification and address of the essential needs and barriers that limit PwDs from being involved in tourism activities and work to overcome these are crucial issues for tourism enterprises (Shaw and Coles, 2004), as this group consists of a promising market segment regarding growth and finance of the tourism industry (Poli, 2020; Zhang et al., 2019). Thus, the extended knowledge regarding tourism and disability, viewing disabled people as a complex and heterogeneous group with various needs and barriers that require different handling, is recommended (Singh et al., 2023). Those countries with sufficient infrastructure adjusted to disabled people's requirements will benefit from these potential travellers.

The shopping experience of PwDs is also essential. Towards this, new forms of packaging, such as ‘smart packaging’ and ‘intelligent packaging’, were developed to facilitate shopping and positively contribute to these people's wellbeing (Poli et al., 2023a; Poli et al., 2023b). In addition, the application of advanced forms of technology, such as ‘smart solutions’ and ‘smart devices’ provides valuable services to PwDs, improving their quality of daily life and leading to sustainable development (Poli, 2021; Poli and Malagas, 2022; Poli et al., 2022). Also, through new technology, inaccessible places can become friendly, and adaptations and the provision of specialised equipment to disabled people can be achieved. On the other hand, the extensive use of science and technology contributes to some problems, such as environmental exploitation and degradation and the construction of infrastructures that do not consider disabled people's needs (Imrie and Thomas, 2008). However, digital technologies offer valuable services to PwDs' daily indoor and outdoor activities (Poli et al., 2023a). Thus, digital accessibility culture, which includes a barrier-free logic with digital inclusion and equity leadership, standardisation of digital access, and the implementation of universal accessibility and share commitment, is an essential issue for disabled people at a city level (Kolotouchkina et al., 2022).

Education should include diversity and disability issues to keep all citizens well-informed and aware. Disability studies offer valuable knowledge to all involved and should be promoted to various educational levels. These studies emphasise the person and their needs more than the disability and have an interdisciplinary nature, including social, humanitarian, medical, rehabilitation and educational sciences (Berger and Wilbers, 2021). In addition, the participation of PwDs in the higher education system is essential. The provided education should follow the needs and interests of all participants, providing an inclusive education offering the proper conditions that make the training feasible and attractive to PwDs, leading to the sustainable development of society (Fedulova et al., 2019).

A suitable and supportive legislative framework centred on the real needs of PwDs is required (Malagas et al., 2023). The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) (nd) is the primary regulatory framework that supports PwDs rights

on a global basis. Based on this, PwDs, from being viewed as 'objects' of charity, required medical treatment and social protections, are now considered as 'subjects' with rights who are capable of enjoying these and making decisions for their lives, having their free and informed consent and be active members of society.

Sustainability is one of the most popular terms in economy and society, and according to the Brundtland Report (1987), sustainable development is focused on satisfying the "*needs of the present without compromising the ability of future generations to meet their own needs*" (United Nations, 1987, p. 15). The creation of sustainability has been a top priority for businesses (and society), focusing on economic development, environmental protection and social goals (the Triple Bottom Line of sustainability) (Hartmann and Moeller, 2014). Disability management is a crucial issue for sustainability and should promoted by all stakeholders.

In 2015 the United Nations (UN) Member States adopted the 2030 Agenda for Sustainable Development, containing 17 Sustainable Development Goals (SDGs). The required Development can be achieved through the protection of 'vulnerable' and the poorest people, and committed that by 2030, must end poverty and hunger everywhere, combat inequalities within and between countries, build peaceful and inclusive societies, protect human rights, promote gender equality and ensure the sustainable protection of the planet and its natural resources. The Agenda contains 169 targets for action and has a universal implementation, including PwDs, where the term disability is mentioned in Goal 4 (quality education), Goal 8 (decent work and economic growth), Goal 10 (reduced inequalities), Goal 11 (sustainable cities and communities); and Goal 17 (partnerships for SDGs achievement (United Nations General Assembly, 2015). Therefore, emphasis has been placed on the 'vulnerable persons' and minorities, which include refugees and migrants and people who may experience disadvantage and discrimination as a result of their social, economic, political, cultural, religious, physical, mental, age or gender-related status (Dobson et al., 2024). These people with different needs require particular assistance to achieve access and participation in main activities and contribute to socio-economic and environmental targets.

Disabled people should enjoy similar services to non-disabled ones in terms of accessibility, equality and participation in society. Implementing a more holistic approach to include PwDs in all possible aspects of daily life is valuable in identifying real problems (Poli et al. 2023 a). Towards these targets, the development of the proper governmental policies, where the adoption of a more anthropocentric approach to efficiently handle disabled people's issues is critical, while neoliberal approaches emphasising individualisation and economic issues face a risk of the missing problems of social sustainability (Salkeld, 2016).

Disabled people are usually considered a homogeneous group, which hides diverse needs and individualised issues that do not need collective actions to be successfully managed (Salkeld, 2016). Comprehensive, comparable, high-quality and disaggregated data, including age, financial status, and level of disability, are required to understand well the reasons for PwDs exclusion, to address the gaps and amend existing policies and regulations, and make the proper interventions to improve their wellbeing achieving the SDGs (Abualghaib et al., 2021). The population of disabled people is growing, and their needs are diversified. These should be included in sustainability debates to avoid further exclusion and risk when a significant part of the population is already excluded from the required activities (Salkeld, 2016).

The study of the daily life of PwDs and their problems in a city-level context is vital. Mobility and movement around rural and urban areas are essential for PwDs. However, socio-cultural and environmental barriers limit those people's participation in society, such as street furniture that limits the movement of wheelchair users and vision-impaired people and urban parks that do not provide Braille signage or tactile walkways to facilitate the movement of

persons with impaired sight (Imrie and Thomas, 2008). Urban planners should emphasise inclusive design and build inclusive 'smart cities' based on the diversity and uniqueness of each individual and develop the proper communication channels (Kolotouchkina et al., 2022; Rebernik et al. 2020; Salha et al., 2020). The relevant literature suggests some valuable tools (Disability Inclusion Evaluation Tool (DIETool) and Disability Inclusion Performance Index (DIPI)) which can be applied to assess accessibility and disability inclusion needs set within the political, legislative and standardisation contexts (Rebernik et al., 2020). Radiofrequency technologies and the Internet of Things provide analysis of the indoor and outdoor movement and monitor urban space conditions, improving the lives of All by offering citizen-centric ubiquitous services and leading to more 'smart' and sustainable cities (Gilart-Iglesias et al., 2105).

Therefore, improved accessibility, equality, inclusion and participation of PwDs in daily activities are essential. All stakeholders, such as intergovernmental, governmental, and city-level organisations, should cooperate and focus on these issues to achieve inclusive, sustainable development.

Methodology

The focus group method was implemented in the current study to collect the required information. This is a non-standard technique of information gathering, based on apparently informal discussion and interaction among experts on the examined subject, where the role of the moderator, who is mainly the study's researcher and leads the debate, is vital (Acocella, 2012; Morgan, 1997). This technique collects the required information quickly and cheaply (Bertrand et al., 1992) and is relatively easy to organise (Stokes and Bergin, 2006). In particular, an online focus group was applied using Zoom services. The main advantages of this technique are as follows: a) it is directed to experts from various geographic regions (larger sample with modest cost), b) it easily maintains the anonymity of participants (important for sensitive topics) (Tates et al., 2009), c) it is less expensive, d) it is more flexible in the process of scheduling, and e) it takes place complimentary with the face-to-face focus group combining advantages of both techniques (David and Shamdasani, 2017).

In the specific research, fifteen (15) participants (n=15) from various related to the study's objective fields discussed the examined issues, and valuable information was collected. All the respondents have extensive experience and knowledge of the subject under examination. The discussion lasted four (4) hours. The first author of the study was the focus group moderator.

The following table 1 presents the study's participants and their professions.

Table 1: The study's participants and their professions.

Participants Number	Participants Professions
1	Visually impaired person
2	Person with hemiplegia
3	Person with quadriplegia
4	Kinetic disabled person
5	Caregiver to a person with quadriplegia
6	Caregiver to a person with a kinetic problem
7	Architect in urban planning and person with quadriplegia
8	Academician in Transport Studies

9	Academician in Environmental Studies
10	Academician in Social Sciences
11	Researcher in Disability Studies
12	Urban planner in a large city
13	Information technology (IT) manager in a large city
14	Managing Director in the packaging industry
15	Graphic designer

The primary outcomes of the discussion with the study's participants are presented below.

Results from the focus group discussion

All participants agreed that providing the proper indoor and outdoor conditions to PwDs is essential for them. In particular, accessibility, equality, inclusion and participation in employment, health, education, and transportation services assist those people in being active in daily life and contribute to sustainable development. However, various problems should be resolved to improve the current situation. Towards this, the role of the government, city level, and private organisations is vital. Thus, governments should efficiently apply all the legislative frameworks imposed by international organisations (UNCRPD is the basis) to every case of disabled people. Governmental, city-level and private organisations should cooperate to provide high-quality services to PwDs, including their employment, to become a model for the rest. Cities must provide accessible and friendly infrastructure without obstacles to PwDs, such as public spaces, transportation and other services. In all issues, environmental protection should be included. Notably, most disabled people are aware of ecology and sustainability, such as recycling waste, separating packaging, and making purchases with an ecological footprint. Everyone sees positively the solution of 'smart packaging' that helps PwDs to efficiently sort the products and give information about their consumption (save money and minimise waste) and facilitates their shopping experience. Also, 'smart technologies' are essential for PwDs' indoor and outdoor activities, such as easier use of home appliances, visiting public spaces, using transportation means, etc. Providing a sufficient level of these services significantly contributes to sustainable growth. The above needs detailed knowledge of the real needs of PwDs, and detailed data for those people are vital. Also, the participants mentioned that all the above concerns those people with less severe disabilities and should not ignore those with heavy disabilities staying home all of their lives.

All participants with disabilities (No 1, 2, 3 and 4) and caregivers (No 5 and 6) identified problems accessing the outdoor activities. Obstacles to using the sidewalk routes, on the ground or in height, potholes, parked cars everywhere, inaccessible buildings, and the lack of possibility to travel using mass transportation are among the most significant problems they have in terms of accessibility in a city level that does not encourage disabled people to move outside their homes. Also, these participants identified the problem with the lack of waste bins, especially those dedicated to recycling, which are far from their homes. At the same time, they suggested city services offer them individual recycling bins. Also, they mentioned that they need more training to use technology and 'smart solutions' efficiently.

Academicians (participants No 8, 9, 10) mentioned the need to establish disability studies at a higher University level, with a well-designed curriculum that includes applicable issues for PwDs, such as the use of the relevant technology, legislations, accessibility, sustainability and others. In addition, they mentioned that more research and funded projects should focus on disability issues. The Researcher in Disability studies (No 11) pointed out

that caregivers are helpful and can study at the vocational level to provide high-quality services to PwDs. He added that the representatives of disabled people organisations should have a more active role in planning policies and decision-making processes.

Participants from the city level (No 12 and 13) mentioned that the cities' infrastructures are not friendly to PwDs and that more progress is required. Dedicated to the needs of PwDs mini busses, proper signage in park spaces, nice sidewalks, more use of technology, and city-level employee awareness and training are all essential to improving the offered services. Urban planner (participant No 12) pointed out that cities providing a friendly infrastructure to PwDs may become attractive tourism destinations for those people, with significant benefits.

Packaging experts (participants No 14 and 15) stressed the importance of 'smart packaging', which offers significant services to PwDs, facilitating their shopping, consuming and ecological experiences, and more work should be done to serve better the needs of specific groups of disabled people such as visual impaired and functional disabled, and focusing more on the ecological part.

Conclusions

PwDs comprise a significant and increasing part of the population, and their needs should be closely monitored and satisfied. Disabled people have specific needs that depend on the kind and level of disability and need more individualised services. Accessibility, equality and participation in employment, health, education, and transportation services are the main requirements from PwDs to end isolation, poverty and hunger for all of those people (SDGs 1 and 2). Greater people accessibility, equality and inclusion into social and economic life with environmental orientation lead to higher sustainability. Therefore, the participation of many PwDs in social life should be encouraged and supported.

The existence of active citizenship and citizen knowledge and the close cooperation of all stakeholders, such as disabled people organisations and governmental and city-level officials, are important issues to achieve social justice as an integral part of environmental sustainability (Imrie and Thomas, 2008). The sufficient implementation of the regulatory framework set by international and national bodies should be applied. Public, city and private organisations should employ more PwDs as a model for the rest. PwD, in some cases, are isolated and cannot use significant parts of the environment due to several social and environmental obstacles that should be eliminated. Sidewalks, parks, transportation means, public organisations, hospitals, and educational institutions must be more accessible for PwDs. The role of city officials and trained city-hall employees to provide friendly services to disabled people is vital. The top priority is the detailed PwDs population census and identifying their needs to shape proper policies and provide sufficient services. Technology offers valuable indoor and outdoor services to PwDs. 'Smart appliances', 'smart packaging', and 'smart cities' significantly assist PwD in participating more in economic and social life with an environmental orientation. However, many of these people do not have the knowledge and financial ability to buy and use these 'smart devices'. Towards this, the provision of some the relevant training will be helpful. Cities that provide accessible and friendly infrastructures to various PwDs groups can attract tourists with disabilities, with significant benefits. The active role of PwDs' daily life has their caregivers (some of them use) and representatives of disabled people organisations and should participate more in shaping policies and making decisions that impact disabled people's daily lives. Similarly, it is essential to create a disability studies department at the higher education level. All the above contribute to improving PwDs' everyday life and sustainability, where governments and the city have a crucial role. Some of the solutions to PwDs require some costs, but the expected benefits for all are more significant. In addition, the above-mentioned issues concern mainly people with

no very heavy disabilities, while particular emphasis on people with severe, hidden and invisible disabilities should be given (Gignac et al., 2021).

It is noteworthy that all the study's participants were based in Greece. They express assessments about the Greek reality, and PwDs who live in big cities and not those in provincial towns and villages, and people with severe disabilities, and those should not be ignored.

Policy-makers who allocate resources and design services and academicians can benefit from gaining essential insights from the current study.

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