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Enhancing Employment Access for People with Disabilities through Transportation: Insights from Workers with Disabilities, Employers, and Transportation Providers

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Abstract: Transportation is integral to the employment accessibility and sustainability of people with disabilities. This study aims to identify barriers, facilitators, and solutions to commuting for people with disabilities, drawing from their perspectives as well as those of employers and transportation providers. Through semi-structured individual interviews, insights were gathered from sixteen individuals with disabilities, seven employers, two job integration agents, and four transporters. Qualitative analysis of the interview transcripts revealed factors influencing commuting, including personal attributes and environmental factors. This study underscores the significant impact of environmental factors, particularly the role of social networks and transport infrastructure in either supporting or hindering public transportation use for people with disabilities who commute to work. For example, employers' limited awareness of their employees' commuting challenges contrasts with their recognition of their potential role in supporting it. Training and disability awareness initiatives emerge as pivotal solutions to empower individuals within the social network, including transport personnel, fellow passengers, and employers, to facilitate public transportation use by people with disabilities for work commutes.

Keywords: transport; employment; disability; work; job; commuting



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1. Introduction

Since 2007, the right to gain a living through freely chosen employment has been recognized in the United Nations Convention on the Rights of Persons with Disabilities [1]. Yet, the employment rate among individuals with disabilities aged 25 to 64 stands at only 62%, compared to 78% among those without disabilities [2]. Indeed, numerous barriers persist, hindering access to and retention of quality employment for persons with disabilities (PWDs) [3,4]. These barriers can be personal or related to the physical and social environment [5–7]. To make their businesses attractive and ensure the retention of employees with disabilities, employers must implement facilitators and solutions to overcome these barriers. Surveys about PWDs'

employment report that only 45.3% of them are satisfied with their job [4] and that they are twice as likely as individuals without disabilities to experience low-quality employment [3]. Moreover, facilitating the employment of PWDs is increasingly crucial as it promotes economic and social autonomy and enhances quality of life [8–12].

Transportation plays a pivotal role in the employability of PWDs, as confirmed by a recent scoping review conducted by our team [13]. For instance, studies have shown that approximately 40% of participants with disabilities turned down job opportunities due to transportation issues [14,15]. Our review identified several factors influencing the commute to work of PWDs. These facilitators and barriers were associated with transportation (service offer, accessibility, paratransit, cost), employment (employers, job requirements and conditions, workplace accessibility), social network, and personal factors (personal capacities, attitudes, and behaviors).

Addressing transportation barriers to PWDs' employment requires concerted efforts from the stakeholders, such as transport providers and employers, to promote inclusivity. However, despite the identification of numerous barriers in the review, some barriers remained without specific solutions, particularly concerning the inflexibility of paratransit services and the attitudes of employers and drivers [13]. Furthermore, while the social environment seems to play a significant role in the transportation to work of PWDs, only a few facilitators have been identified, such as a supportive network [16,17] or a social norm encouraging the use of public transport [16].

The Human Development Model–Disability Creation Process [18] conceptualizes disability as the result of the interaction between personal and environmental factors, including the social environment. Thus, if we transpose this to the use of transportation to commute to work, the ability to perform this activity depends both on personal and environmental factors. Given the potential significance of the social environment in the commuting experiences of PWDs, there is a need to investigate how employers and transporters can, together, enhance transportation support for employees with disabilities.

To develop effective solutions, it is essential to engage all stakeholders involved in addressing transportation issues for PWDs. However, our scoping review revealed a lack of employer involvement in existing studies on the subject, as well as a notable absence of transportation providers. Additionally, while many facilitators and barriers are shared across different types of disabilities, some are unique to specific disabilities, underscoring the importance of examining transportation and employment issues through a diverse lens. As such, this study aims to identify facilitators and barriers to PWDs' transportation to work from the perspectives of PWDs, employers, and transportation providers.

2. Materials and Methods

2.1. Study Design

To gain a deep understanding of our research question by exploring individuals' perspectives, we conducted a qualitative descriptive study [19]. We situated ourselves within a constructivist and interpretivist paradigm, aiming to better understand the reality of the participating individuals as they perceive it [20]. To report the findings of this study, we adhered to the Standards for Reporting Qualitative Research outlined by O'Brien et al. [21].

2.2. Researcher Characteristics and Reflexivity

Our research team comprises researchers with expertise from various fields, including occupational therapy, speech-language therapy, sociology, and psychology. Representatives from an employment organization for PWDs, an advocacy organization for PWDs' rights, and a transportation entity are also integral members of the team. We adopted a social conception of disability, viewing it as the result of interactions between personal and environmental factors. The researcher who analyzed the data (AT) is a trained speech-language pathologist with a PhD focused on training paratransit drivers to use inclusive communication with individuals with communication disabilities. She has a significant

interest in environmental interventions and was particularly attuned to the social factors influencing participants' experiences.

2.3. Context

This study was conducted in the city of Quebec and the greater Montreal region due to their well-developed transportation network and the ease of recruiting participants through our partners. Data collection occurred during the fall of 2021 and winter of 2022, shortly after the onset of the pandemic, which introduced new opportunities for teleworking that were previously unavailable. Consequently, the collected data reflect this evolving work reality for PWDs. It is worth noting that our analysis focuses on the factors affecting PWDs' commute to work, recognizing that teleworking is not universally applicable and may not always adequately address the needs of PWDs.

2.4. Participants

To explore the perspectives of stakeholders involved in the employment issue for PWDs through transportation, we recruited PWDs, employers, and transporters. In total, 16 PWDs, 7 employers, 2 job integration agents (individuals who assist PWDs in integrating at new jobs), and 4 transporters participated in this study. PWDs were recruited through social media posts, newsletters from organizations serving PWDs, referrals from these organizations, and partner rehabilitation centers. Inclusion criteria required individuals to have a disability; be fluent in French or English; be currently employed, seeking employment, or recently employed; and reside in the Greater Montreal area or the Quebec City area.

Employers and transporters were recruited through posters and direct contact with organizations. Inclusion criteria stipulated that participants must understand French or English and have at least 1 year of experience in their job. We employed purposeful sampling to ensure diversity of experience [22], aiming to recruit participants with various disability types, ages, genders, and racial backgrounds. While we did not specifically seek to diversify the types of employers and modes of transportation, we successfully achieved diversity in our sample.

To maintain confidentiality, participants were assigned pseudonyms. Tables 1–3 present the sociodemographic characteristics of the participants. The majority of the participants were Caucasian, but four PWDs and three employers were people of color, with one employer being Black.

Table 1. Participants with disabilities' sociodemographic characteristics.

Participants	Gender (Pronoun)	Age	Principal Disabilities	Job Status	Commute to Work
Max	Agender (they)	25–34	Motor	Video games testing	Public transport, wheelchair
Stéphane	M (he)	35–44	Visual	Disability organization	Public transport, paratransit, walking, ferry
Francesco	M (he)	25–34	Deafness, signs to communicate	Bank	Public transport
Mylène	F (she)	25–34	Motor	Hospital	Paratransit
Jordan	M (he)	35–44	Motor	Looking for a job	Public transport, walking
Richard	F (they)	65–74	Motor and speech	Disability organization	Paratransit, four-wheeler
Lucie	F (she)	45–54	Visual, motor, mental	Research	Public transport Paratransit, walking
Ariane	F (she)	25–34	Autism	Blue-collar	Public transport Walking
Lian	F (she)	45–54	Visual	Public services	Carpooling
Steve	M (he)	35–44	Cognitive, visual, motor, communication	Adapted workplace	Paratransit
Frederic	M (he)	35–44	Deafness, visual	College	Carpooling
Amélie	F (she)	25–34	Intellectual	Foundation	Driving
Lara	F (she)	35–44	Autism	Library	Public transport, walking, cycling
Maxime	M (he)	25–34	Autism	Looking for a job	Public transport, walking
Natacha	F (she)	35–44	Intellectual, attention-deficit/hyperactivity disorder	Grocery store	Public transport
Camille	F (she)	25–34	Autism	Library	Public transport, driving

Table 2. Employers and service providers' sociodemographic characteristics.

Participants	Gender (Pronoun)	Age	Living with a Disability	Job and Work Environment	Job Experience (Years)
Catherine	F (she)	35–44	No	Equity, diversity, and inclusion advisor for a public service	10 months
Louise	F (she)	55–64	Yes	Accessibility advisor at a university	Less than a year
Julie	F (she)	35–44	No	Strategic advisor in a bank	10
Sonia	F (she)	45–54	Yes	HR advisor for a city	21
Clara	F/agender (she, they)	25–34	No	Job integration agent in a non-profit organization for the employability of PWDs	1.5
Yolanda	F (she)	35–44	No	Diversity and inclusion advisor for a public service	1
Ellen	F (she)	45–54	No	Regional communication manager for a public service	11
Dominique	F (she)	25–34	No	Job integration agent in a non-profit organization for the employability of PWDs	3
David	M (she)	45–54	Yes	HR advisor at a bank	8

Table 3. Transportation provider representatives' sociodemographic characteristics.

Participants	Gender (Pronoun)	Age	Job	Experience in the Job (Years)
René	M	45–54	Paratransit division manager	9.5
Claire	F	35–44	Project manager	2.5
Lise	F	55–64	Project manager	12
Joanne	F	MD	Paratransit director	12

MD: missing data. The participant did not want to disclose her age.

2.5. Data Collection

The first author (AT) conducted individual semi-directed interviews via Zoom One (Zoom Video Communications, San José, United States) during the fall of 2021 and winter of 2022. To facilitate this, the research team developed interview guides tailored to each type of participant—PWDs, employers, or transporters—and these guides were reviewed by two individuals from an employment organization for PWDs (see interview guides in the Supplementary Materials).

The guide for PWDs covered five topics: occupation and disability, education, employment and transportation experiences, reflections on COVID-19, and identity reflections. For employers, questions focused on their job and work organization, experiences with employees living with a disability, perceptions of public transport's role in PWDs' employment, their own role in PWD employees' travel, and the pandemic's effects on PWD inclusion in their organization. The guide for transporters was structured into three sections: participant's job, experience with PWD travel, and impressions of public transport's role in PWDs' employment.

All interviews were audio and video recorded for transcription purposes. The average duration of the interviews was 68 min. In the case of Frederic, the interview was conducted through the

Zoom chat for communication accessibility. Additionally, some participants sent emails to AT after the interview, providing additional information or details, which were also included in the analysis process.

2.6. Data Processing and Analysis

All the interview transcripts and participant emails were imported into N'Vivo 12, a qualitative analysis software. Data analysis followed the coding procedures suggested by Miles et al. [23] and was conducted by the first author (AT). Inductive coding was employed, with relevant extracts being coded, defined, and classified into categories to form a code book. After coding eight interviews, categories were aggregated into three overarching themes (transportation, employment, and personal factors) to prevent code duplication. AT reviewed the codes and codebook created thus far before proceeding to code the remaining interviews. Following this, the codes and codebook underwent a thorough review. After a long pause, AT revised the codes to specify whether each one represented a facilitator, a barrier, both, or another type of data. After this work, they were presented and reviewed with PA. Subsequently, the findings were translated into written form (Section 3 of this manuscript), occasionally prompting clarification or modification, such as code grouping. In the final stage of peer-checking, all co-authors meticulously examined the results section, leading to further refinement of the codes. For instance, after this review, we integrated the Human Development Model–Disability Creation Process conceptual framework [18] to clarify the taxonomy of different targeted elements associated with disability in transport and employment contexts.

2.7. Trustworthiness

To ensure the trustworthiness of this study, we implemented several processes to adhere to the four rigor criteria suggested by Guba and Lincoln [24]: credibility, dependability, confirmability, and transferability.

To establish credibility, we focused on developing a trusting relationship with the participants during interviews [19]. This involved reminding participants, before recording began, about the confidentiality of their identity and their right to withdraw from this study at any time. Throughout the interviews, AT expressed compassion and empathy, fostering an environment conducive to open dialogue and maintaining prolonged engagement with participants [19,25]. For example, AT probed for additional insights beyond the planned questions and assured participants of her availability for further discussion if needed. Additionally, credibility was reinforced through the iterative process of data analysis, which included considering divergent perspectives and presenting data that deviated from the majority [25].

To ensure credibility, confirmability, dependability, and transferability, AT maintained an audit trail consisting of various documents throughout all stages of the research and kept a reflective journal [19,25]. This included using an Excel document for purposeful sampling during recruitment and completing a summary sheet immediately after each interview, capturing key details and personal reflections. During data analysis, AT continued to document her reflections and analysis procedures in a reflective journal, providing explanations for any changes in coding.

Confirmability of this study was further ensured through peer-debriefing conducted with the last author (PSA) and the research team to verify the accuracy of the analysis [19]. Additionally, participant sociodemographic characteristics were presented (see Tables 1–3) and direct quotations were included to illustrate findings.

Finally, the transferability of this study was enhanced by using purposeful sampling and providing transparent descriptions and details of the study context, location, and procedures. This facilitates judgment of the applicability of the results and replication of this study in other contexts [19,25].

3. Results

During our analysis process, we identified transportation facilitators and barriers to PWDs' employment associated with personal and environmental factors. Table 4 presents the identified facilitators and barriers classified according to the Human Development Model–Disability Creation Process. Additional citations from participants, further illustrating our results, are available in the Supplementary Materials.

Table 4. Facilitators and barriers to PWDs commuting to work classified using the Human Development Model–Disability Creation Process.

	HDM-DCP Factors	Facilitators	Barriers	Solutions
1	Personal factors			
1.1	Identity factors			
	Age	Better capacities when younger	Decrease in capacities with age Facing prejudice because of younger age	
	Gender		Being a woman	
	Race	Being white	Not being white	
	Education level	Higher education level		
	Values	Ecological values that promote the use of public transportation		
	Employment status		Working full-time	
	Personal experiences		Germophobia Past traumatic experience with public transport Negative paratransit perceptions Fear of using public transport at night	
1.2	Organic factors			
	Type of disability	Depends on the needs of each type of disability	Depends on the needs of each type of disability	
1.3	Capabilities			
	Capabilities	Navigating public transport independently Feeling confident and competent in using public transport Using personal safety strategies when navigating public transport Organization skills Motivation Extraverted personality	Fatigue Mental load when planning paratransit travels	Training PWDs to use public transport

Table 4. Cont.

2 Environmental factors			
2.1	Social Factors		
2.1.1	Social network		
Family and friends	Teaching how to use public transport Asking help from friends and family Imitating peers Offering a lift to work to the PWDs		
Drivers or transport personnel	Confidence in the drivers Kindness, attentiveness, proactivity, and helpfulness of the drivers	Drivers' lack of knowledge or skills when driving their vehicles	Training drivers
Public transport passenger	Proposing or offering help Following other passengers to find the way	Behaviors leading to a sense of fear, insecurity, and physical danger The gaze toward PWDs and inappropriate interactions Density of persons in public transport	Raising awareness about attitudes to adopt toward PWDs Traveling outside rush hours Adapting work schedule
Employers	Positive beliefs or experiences about PWDs' transportation and hiring Implementing facilitating work conditions (e.g. reserved parking, flexible schedule, telework) Openness, receptiveness, flexibility, and tolerance of the employer toward PWDs' challenges when commuting to work	Maintaining work conditions hindering PWDs' hiring (e.g., requirements of a driver's license) Lack of knowledge about PWDs' challenges to commute to work Lack of tolerance toward lateness Lack of understanding of the consequence of PWDs commuting to work Negative beliefs or experiences about PWDs' transportation and hiring	Using personal strategies when negotiating with employers Survey employees to better understand transportation needs Raising employers' awareness about PWDs' transportation needs and disabilities in general
Work colleagues	Traveling with a colleague to work when the route is new		

Table 4. Cont.

2.1.2 Transport infrastructure				
Transportation cost	Public transport as an affordable option		Public transportation costs being too high Taxi costs being too high	Reducing public transport costs Employers contributing to cover transportation costs Reduced transport tickets for PWDs or individuals with low-income
Transportation reliability			Services stops Bus delays Bus not showing up Route modifications Metro breakdowns Winter conditions Duration of paratransit journey	Reorganize route to reduce commuting duration Using technologies to inform users of time of arrival and time at destination
Traveling flexibility	Access to public transport near home Regular frequency of transport services Access to multiple modes of transportation Being able to use regular public transport		Unavailability of public transport services, particularly in a rural area Too long commute duration Infrequent transport services Public transport schedules that do not align with PWDs' work schedules Too many transfers between transportation Coordinating different means of transportation	Collaboration between transporter and employer to facilitate the commuting of PWDs Moving closer to accessible transport services or work sites
	Paratransit		Paratransit eligibility criteria Restricted service hours of paratransit Limited service area of paratransit Obligation to provide a destination address to the paratransit Need to reserve paratransit in advance Paratransit not meeting the needs of PWD parents who work	Same-day transportation for PWD workers using paratransit Legalizing autonomous vehicles
	Taxis		Not enough available accessible taxis	

Table 4. Cont.

	Being able to drive		
	Carpooling		
Public transport physical accessibility	Visual display of stop names Verbal announcements of stops	Stairs in metro Absence of elevator in metro Non-functioning access ramps Inaccessible vehicles (e.g., lack of space, mobility aid size constraint) Limited number of reserved spaces or seats for PWDs	Increasing the number of accessible bus lines by targeting employment hubs Improving linkages between different accessible transportation systems Developing and making information about the accessibility of transportation networks available Reserving transport or seats for PWDs Creating a silent wagon
2.2	Physical factors (E2)		
Route to transportation or workplace accessibility		Lack of coordination in pedestrian traffic lights Lack of lighting or streetlights Absence of seats at transportation stops Constructions Walking distance Inaccessible stops Lack of pedestrian crosswalks Presence or condition of sidewalks	Coordinating transporters and the city to make an accessible public transport journey
Winter		Affects transport reliability, journey to transport and to work, and access to vehicles	
Employment location accessibility		Inaccessible entrance Interior of the building is inaccessible	

3.1. Personal Factors

During the analysis, we identified transportation facilitators and barriers to PWDs commuting to work associated with personal factors.

3.1.1. Identity Factors

Some PWDs indicated that identity factors could either facilitate or hinder their use of public transport more generally. Many PWDs anticipated or experienced how aging made the process of using public transportation harder, specifically because their capacities changed. Conversely, one PWD explained how they faced a lot of unwanted gazes and prejudice because they were a young person with disabilities. Another PWD explained how their behavior changed with aging:

When I was younger, I was a bit more of a cowboy; when I was younger, traveling two hours in the morning and two hours in the evening didn't bother me as much as it does now. And I don't feel the accumulated fatigue at the end of a workday now as I did fifteen years ago. I... I'm not that old yet, but I still feel the impact. The weight of age too, compared to when you have a disability in general, you age a bit faster, let's say.

Gender was also identified as affecting the use of public transportation by women with disabilities. The possibility of being harassed or other issues is a concern for some PWDs:

Especially my gender [female]. Just this past Wednesday, I almost got assaulted by a guy at the metro station. I know that as a woman, that's the risk. And um... it's really uh... it's really a reality, actually. Really. [...] Yes, I anticipate that. I know I'm a girl! So, when I take public transportation, I know I might get assaulted. It's always in the back of my mind. And especially, I check the time. Is it dark outside? Will there be a lot of people? There's always this thought that, in a woman's life, there will be some kind of assault. Unfortunately. (PWD)

Race is another identity factor mentioned by participants, acknowledged as a privilege and facilitator by white participants or as a barrier by non-white participants, particularly in the workplace where they report encountering racism:

And my last name, not so much the race, I'm Quebecer but [of another origin], so I have a very long last name. And often when we send that with the CV, they look at the last name and since it's less known, well yes, we can be... subject to racism or discrimination. Sometimes they might prefer to choose a name that is more quebecer. (PWD)

One participant explained how their strong ecological values support their willingness to use public transport to go to work. Other identity factors identified by PWD participants included education level and values:

Undoubtedly, my level of education has had... an impact. I apologize, but in the world of people with disabilities, they tell me, 'Wow, you were able to work?' That's our world... my level of education, it's very clear. And also in terms of education, when it's time to make a clear request to someone. To say, the driver doesn't want to hear the story of your life; he wants to know what you want. (PWD)

Furthermore, employment status (full-time or part-time) is another element identified by a participant as influencing her transportation to work experiences because she thinks that using paratransit every day can cause irritations that would not necessarily be present if she were not using it every day to go to work.

Still, for some participants, using public transport to go to work or during work can be stressful, especially when it involves new journeys. Some personal experiences and fears were shared as hindering the use of public transport to go to work, such as germophobia, past traumatic experiences associated with the use of public transport, a negative perception of paratransit, and the fear of using public transport at night:

I was like stuck in [a town] after my shift at work, yeah, there's Google Maps but it might make me feel a little insecure having to take the bus, you know, in a neighborhood I don't know well and not knowing in advance... (PWD)

3.1.2. Organic Systems

Some participants explained how the type of disability influences transport and employment due to the varying needs of each PWD and the unique experiences they may encounter:

The disabilities are so different... The needs are so different depending on the disability. (Job integration agent)

The whole aspect of living with a limitation, the complexity. Understanding a whole principle and a... a way of doing things. Understanding how it works. It's complex for a person living with a limitation. So, uh... It doesn't prevent you from taking the bus and all that. It's not the kind of thing that determines whether you take the bus or not. But I think that, uh... Having difficulty understanding how it works... (PWD)

3.1.3. Capabilities

The ability to use public transport independently was reported as a facilitator for the use of public transport for commuting to work:

So often our more independent clients take the bus, so they often have more autonomy in their movements, are physically fitter, and are also more capable of dealing with difficult situations. (Job integration agent)

Feeling confident and competent in using public transport appears to support its utilization to get to and from work. Also, gaining confidence in using regular transit can offer other options for PWDs who rely solely on paratransit for their commute:

But it still made me realize that if this person could develop confidence and assurance in taking the regular transit system, it would likely relieve some pressure for them in their work. They could say, "Well, if I have a last-minute meeting, or if I need to stay an extra twenty or thirty minutes, with paratransit, it's clear that it won't work because I would have to plan it the day before." All the unexpected events during the day. So depending on the nature of the job, I think it's important to have other... transportation is key. (Transport provider)

Hence, receiving training or assistance to learn how to use public transportation or navigate a new journey was identified by PWDs, employers, and transporters as an element that could facilitate using public transport to travel to work:

I think there's a lack of support, yes, for learning how to use public transportation. That, I would say, is an aspect that should be developed. [...] But having a... a companion who accompanies them, for example. A special educator, a social worker. I'm not sure what kind of professional it would be, but I find that this support is missing. And the training in that. To understand how it works. (PWD)

One of the services we've implemented, and I think this is... We've introduced what's called the Integrated Mobility Accompaniment Service, which serves several purposes, including assistance with using public transportation. So, this is very recent, it opened in July. And the objective of this service is, among other things, to provide tools for people with disabilities to use public transportation. (Transportation provider)

PWD participants described personal strategies that helped reduce stress and reassure them in their use of public transportation and arriving on time at work. These strategies included knowing the way to work, leaving early from home, planning ahead for new commutes or recurring trips to work, and using technologies, such as cell phones, Google Maps, or the transporter app, to plan trips, estimate commute time, and assist in navigation in case of unexpected events or when a new route needs to be learned:

For me, Google Maps is my best friend. It's really helpful for me. That's how I see if a job can fit. I see how long it might take me, I see which bus I can take in case, you know, the metro breaks down (PWD)

Fatigue emerged as a commonly cited barrier to the use of public transport for commuting to work among PWDs. The exertion of using public transport can lead to fatigue upon arrival to work, potentially affecting the remainder of their day. Furthermore, the participants noted the mental strain associated with coordinating journeys with paratransit as another significant barrier. Conversely, strong organization skills, motivation, and an extraverted personality were described as facilitators to the use of public transport.

3.2. Environmental Factors

Many participants in the interviews shared how environmental factors influenced transportation to work for PWDs.

3.2.1. Social Factors

Social Networks

Participants described many facilitators related to the social network of PWDs. The social network encompasses interpersonal relations within a society [18].

- *At Home*

Family and friends can play an important role in PWDs' use of public transport to commute to work. One participant shared how her mother taught her how to use public transport and how she seeks help from friends or contacts to plan trips when she is unfamiliar with the route. Another PWD participant explained how the fact that her friends used public transport encouraged her to do the same: "So, several of my friends were taking public transportation, and I imitated them." More importantly, many participants emphasized that parents or significant others provided transportation for PWDs to get to work:

There's no public transportation in [rural city]. So, you know, it's really relying on mom, dad, friends, or walking. When they don't have a car, that's really it. [...] So if mom is sick in the morning, well, I can't even call a taxi to help me out for a day. [...] But that's really problematic, you know; we've had to end jobs because... For example, the mother changes jobs. Let's say they were leaving from [a city], well then she would go... Instead of going towards [larger city], she would go the other way, so she couldn't leave him in [city where the PWD works] anymore, so it's over. We change jobs and we can't, I mean, it's not feasible to ask the mother to drive half an hour in the other direction. (Job integration agent)

- *In the Public Transport*

People encountered during the transportation journey can either act as facilitators or barriers to the use of public transport by PWDs. Firstly, the attitudes and abilities of bus, paratransit, and taxi drivers were described as influential factors in the quality of service received. Transporters consistently emphasized the significance of drivers' attitudes and abilities on the overall customer experience for PWDs. The trust that develops between drivers and users appears to be the key to the sense of security felt by PWDs, as expressed by a transporter: "But I think the quality of service is the trust between the driver and the customers. Yes, that's what works well". This confidence seems more easily reached when a user encounters the same driver more than once, as in the case of smaller paratransit services:

And I'm quite well known to the boat staff as well. I mean, even if I wasn't known, they're very... accommodating, you know, to assist people with reduced mobility or anything like that. I've observed it for others too; they're very welcoming, if I may say so. I wouldn't need that to be able to take the boat, but you know, it adds to the trip, if I may say so. [...] Like, for example, at one point, there were construction works on the boarding gangways. And they had set up, precisely, I was heading to the usual entrance, because the temporary

entrance wasn't easily accessible. I went there, there was an employee who would guide me to the boat and then come get me on the other side to help me get off. You know, it was very... very, very well adapted. (PWD)

Kindness and attentiveness are additional driver attitudes contributing to the confidence of PWDs in the driver. PWDs appreciate proactive drivers who, for instance, kneel the bus without being asked. Some PWDs employ strategies such as asking for help from drivers or transportation service personnel to support their use of public transport, seeking assistance with directions or being informed about their stop. However, a PWD participant highlighted the downside of dependency on staff for travel, expressing frustration at times when they may not be helpful, such as forgetting to inform them about the stop:

But one obstacle is like when I was talking about the dependence on the staff; having, as was the case a few years ago, an invisible disability. Well, it's like... I realized that when the drivers, so to speak, would forget me when I asked to get off at [name of the stop], or whatever it is. Well, I didn't look disabled! They just thought I was a little lady who might be insecure and afraid of missing her stop. But when I started telling them, "I am visually impaired," oh boy! Bam! They didn't forget me anymore. And when I had the cane and the four-wheel walker, well they didn't forget me at all. You... you don't look sick. You don't look disabled. That can also be an obstacle when taking transportation.

On the contrary, participants reported certain driver behaviors that impede their use of public transportation. These behaviors include a lack of knowledge or skill to deploy the ramp, failure to kneel the bus when necessary, starting the bus too quickly without allowing sufficient time for PWDs to be seated or secured, and not necessarily stopping at a designated stop if the doors were already opened at the end of a bus line:

I have to ask the driver to lower the bus floor. But some don't care. They don't care. I've asked. But either because they don't hear me, or because they don't like me, so they don't want to lower the floor. But since we've made a lot of complaints, I've made a lot of complaints about bus drivers. The mentality is starting to change. So the bus is getting better. (PWD)

A transporter explained that many of these abilities or behaviors are expected from drivers but may not be consistently practiced due to a lack of frequent necessity in their work. She also highlighted how drivers face contradictory demands, balancing service reliability with the time needed to adopt inclusive behaviors, which may influence their actions. Almost all transporters agreed that training drivers is essential to ensure inclusive behaviors toward PWDs:

I argue that there is a strong emphasis on service reliability, adhering to schedules. And that's received by drivers as conflicting directives because they're told, "Respect the schedule, people want the service to be fast," "But take the time to deploy the ramp... Take the time to start slowly when an elderly person enters the bus... Respond to people with intellectual disabilities... Respond to the deaf person by looking at them and articulating..." [...] But it remains that there needs to be consistency. When you want to have buy-in, well, you have to ensure that your messages are clear and not contradictory.

Secondly, other passengers in public transport sometimes act as facilitators of transportation while, at other times, they act as barriers. Other passengers become facilitators when they willingly offer their help to PWDs. For instance, one PWD mentioned that she often asks another passenger to inform her when it is time to get off the bus. Additionally, passenger flow was identified as a facilitator by two participants. For example, one participant with disabilities explained:

If I also see the flow of people moving around, then I'm going to follow, let's say, so often at Berri-UQAM, when there's a breakdown, people will head elsewhere. So you can see the... the direction people are taking. So that's how I understand that something is going on. [...] Because it's often said by voice, I don't hear it.

However, participants more frequently described other passengers as barriers to the use of public transport by PWDs. The behaviors of some passengers were described as a threat to the security of PWDs. Many participants with disabilities expressed a sense of fear regarding physical danger when other passengers ran around them, pushed, or tried to help without asking:

I have a lack of balance. [...] So, I always make sure not to... I always walk behind others. I let people go ahead of me in the metro stations. And I walk behind them. So, that's it, but I still feel insecure about the situation. [...] They'll bump into me with their backpacks...

There are a lot of people who don't seem to understand that it takes a minute or two for the bus ramp to deploy [...] There's a guy getting off the bus... just a random guy, not a [guy from the transport provider], just guys who decide "I'll help him", He gets off without saying anything and starts grabbing my chair to put me on the bus. "Don't touch me. I don't know who you are! [...] First, I'm not just a chair!

Moreover, harassment and theft from other passengers were also reported as security concerns for some participants. One PWD reported several occasions where he was a victim of theft or harassment. One transporter acknowledged this reality for PWDs, stating:

Harassment, bullying, that's something people with limitations... That, I think, is not funny. Because you never know... I think it's a phenomenon, indeed it must happen, I feel, quite regularly. So these people, they get on the bus, they never know what their experience will be like. We're talking in jargon, customer experience, you know! You can never know what you're going to experience on the bus, depending on who's inside. (Transport provider)

The failure of other passengers to voluntarily offer their seats or vacate the wheelchair space upon the entry of a person with mobility limitations into the bus or metro is a significant concern for PWDs. Moreover, participants frequently cited discomfort with the stares and potential interactions from other passengers, often finding unsolicited comments, offers of assistance, and infantilizing behaviors particularly bothersome. For one participant, the unpredictable behavior of fellow passengers emerged as a major source of insecurity when utilizing public transportation:

You know, sometimes you're... you're thinking about what's next, sitting on the boat or waiting for your bus, and then someone comes up to you and asks, "Were you born like that?" "How old is your dog?" You know, just like that. No hello, nothing; "Were you born like that?" What, huh? "Are you talking to me? You, were you born like this?" (PWD)

The only solution that emerged from the interview regarding other passengers' behaviors being barriers to the use of public transport for PWDs was to raise public awareness towards attitudes to adopt when encountering PWDs. One transporter explained how they will address these challenges in their policies:

So, it's certain that in our plan, we have an action that focuses on "traveling together." There are many sensitivities involved. And in the perspective where we want to increase the use of public transportation by people with disabilities, with reduced mobility, well, then, the rest of the people need to accept that yes, sometimes it slows down the service, yes, you need to give up your seat, no, you don't harass people. (Transport provider)

The density of people on public transport was also described as problematic on several counts, especially during rush hours. Some autistic participants pointed out that sensory inputs (e.g., scents, physical proximity) were inconvenient elements of their public transport journeys. Rush-hour travel could be stressful for people using mobility aids, making it difficult for them to board vehicles and access designated disabled areas:

Moving around in a big crowd is a nightmare. That's why I avoid rush hours. (PWD)

In the morning, the light in the subway, with the smell of morning people, the perfumes... it was really uncomfortable for me. [...] Yeah, so the smell, and the proximity. When people touch me, it also bothers me. Because for me, when someone touches me and then removes their hand, I still feel their hand. It's like they touched me for hours. (PWD)

To overcome challenges associated with traveling during rush hours, many participants either traveled to work outside these hours when possible or suggested such strategies. For example, employers explained how they adjusted their employees' work schedules to enable them to travel outside peak hours. A job integration agent mentioned negotiating schedules with their clients with disabilities and their bosses to avoid crowded buses.

- *At Work*

Participants identified employers as impacting the commute of PWDs to work. Employers can implement facilitating conditions, such as allowing service animals in the workplace, reserving parking for PWDs, offering flexible or reduced hours, permitting teleworking, adapting or accommodating job tasks, or even contributing to or providing transportation. On the other hand, employers may hinder the employment of PWDs due to transportation reasons, such as requiring a driver's license for a job or being inflexible about the work schedule. However, in general, it appears that the interviewed employers without disabilities have little, or no knowledge of the transportation challenges faced by PWDs. Consequently, they play a limited, if not absent, role in the commuting experiences of their employees with disabilities. When asked about their knowledge of transportation barriers for PWD employees, employers without disabilities admitted not knowing from experience; for example, one employer said "No, not first hand no. I can just imagine it, but I don't know first hand". Still, employers believed they could play a role in supporting PWDs' commutes to work. To overcome this lack of knowledge, an employer suggested surveying their employees to better understand their transportation needs.

The analysis of the interviews highlights that the employer's understanding of the challenges related to the commuting of their employee with a disability influences the employment experience. PWDs reported that it is a facilitator when the employer is open, receptive, and flexible when the PWD is unable to go to work because of transportation issues (e.g., paratransit cancellations due to weather) or is tolerant towards delays or early departures due to transportation. Participants shared personal stories where the employer had no problem with unplanned telework, reorganized the workday knowing that their employee would not be on-site, supported their employees in their development of using different types of transportation, or accepted that the employee left the job 10 minutes before the end of the shift in winter so that they can catch their bus on time:

It was really complicated on the bus. That one there... Because it was in an industrial area, so the buses only come every hour. So if you miss your bus, you have to wait an hour for the next one. And that happened often. Very often I missed it, so I had to wait an hour. Luckily, my employer was pretty understanding, it didn't bother them that I arrived later because they knew what the transportation was like there. (PWD)

My employer, with very, very great openness, allowed me to go take my driving lessons during my working hours. Because I have to do that at a rehabilitation center and it's open from nine to four. (PWD)

However, many participants emphasized that being late to work due to transportation issues eventually caused problems with their employers and, in some cases, led to termination:

So, they called me into the office and they said, "[name], we can't tolerate these delays like this, it's not done, it's not professional." And then I told them, "Well yes, but you know, I don't really have control over the adapted transportation, we're paired up, there are delays, and in the winter it's even worse, and it was winter." So then they said, "Well, you need to sort that out." So I said, "Okay, I'll contact the paratransit and ask them to give me an earlier schedule, to leave earlier in the morning to make sure I arrive, even if I

arrive too early.” [...] So then I contacted the paratransit and they said no. They said, “In your area, there’s no other regular schedule, we can’t help you, and that’s how it is.” So I said, “Okay, can you put that in writing for me, so I can give it to my employer to show him that I have no control over this?” And they said “yes, yes,” and they gave me a letter. And I gave the letter to the employer and uh... , not two weeks later, the next day, I lost my job. (Employer with a disability)

Some participants also described that it was challenging for the employer to fully understand how the transportation experience can cause fatigue and stress, ultimately affecting the performance of PWDs during their workday. This could eventually lead to dissatisfaction from the employer:

But, you know, it’s true that for those who arrive overloaded, with fatigue and all that, the employer is less understanding because the cause and effect link is less clear. [...] But if the person who arrives, who is tired, who is exhausted because on their transport there’s someone shouting, or because on their bus, there are young people talking loudly, the link is less clear. And, you know, often it’s not immediately visible. It takes accumulation and then at some point, it bursts. There’s less understanding about that because precisely it’s not punctual, and it really has a bigger impact on work. (Job integration agent)

Additionally, participants reported that the beliefs of employers regarding a potential employee’s ability to commute, attitudes towards PWDs, and their past experiences with hiring another PWD can either promote or hinder the employment of PWDs:

And I didn’t mention in my letter that I was a person with a disability. They called me to go for an interview. The boss, my department head, everything lined up perfectly because he had already been a department head in a CLSC and had already hired a person who had a visual impairment. So he wasn’t afraid of me, if I can say, I can say that. (PWD)

Many employer participants stressed the need for employers to shift their perspective on what it means to make accommodations and how they can support PWDs’ employment. In this regard, raising awareness among employers could be a solution to facilitate the employment of PWDs. Participants suggested, in particular, raising awareness about transportation needs but also about disabilities in general:

One of the biggest accommodations that are given to employees right now is religious accommodation. [...] We already give employees accommodation. All the time. So allowing for accommodation for those who have a physical disability in my mind is nothing beyond what employers are already doing. And the cost is so so small. [...] That if you listen and accommodate anybody, whether they’re able bodied or living with a disability, you’re going to make a loyal employee out of them. You’ve listened to them, you’ve accommodated for them. And you’ve created a culture where they feel seen and heard. Of course, they’re going to stay. And they’re going to get you their best work, that’s what they want to do. (Employer)

Participants also shared personal strategies they used to manage the potential issues with their transportation to work with their employer. Many PWDs explained that they notify their employer when they realize they will be late to work due to a public transportation issue. Some PWDs discussed with their employer about (potential) issues surrounding their transportation to work. The topics addressed the need to adapt schedules to be able to use public transportation, challenges caused by wheelchair size, transporter requirements, considering the accessibility and distance of the future work building, and negotiating travel tasks when working:

Because there was a gentleman at one point that we were transporting. And he had two types of wheelchairs. One for work, and one for transportation. Because when we transported him, there were certain limitations in terms of measurement, size. [...] So, the problem he had when he arrived at his workplace was that the space was very small. So the wheelchair he could use was smaller. But then, he couldn’t transport himself with that wheelchair. So he was a bit stuck. He said, “How am I going to get to work with the

right wheelchair?" So, we had to talk to him and say, "Also talk to your employer. There's something your employer needs to change in the building infrastructure because I also have rules. And at some point, I can't transport you in what you want." So he had to talk to his employer to say, "Listen. . . The entrance door needs to be changed, my office door needs to be changed. The location of my office," so that he could use the right wheelchair for transportation and the right wheelchair at work. So, these are constraints, obstacles that I also face in my operations, but on the other hand, it could also be on the employer. (Transport provider)

Many of the participants reported a positive outcome of the discussion with the employer, but some also reported that their requests were not positively welcomed and that their needs were not necessarily met. Most of the participants discussed these topics when they were already hired, but two of our participants discussed issues of transportation during their job interviews. At the same moment, they also discussed solutions that could be put in place to overcome these limitations. In one instance, this discussion led to a non-hiring situation for the PWD because it seemed "too complicated" for the employer:

I had several potential employers who didn't want to hire me because it's too much organization. Also, they needed people available on demand to visit buildings or construction sites. They could have accepted and informed me of the locations 24 h in advance, and I would say yes or no and exchange with colleagues. (PWD)

It depended on the employer themselves. [...] This employer wanted to invest zero and wanted to make zero effort. [...] I was required to face rush hour at Jean-Talon metro. And if everyone started at nine o'clock, then I had to be there at nine o'clock. And basically, I thought about it, I said, "Look, I could start an hour earlier, an hour later, it wouldn't make any difference. I don't answer the phone." But "No, no, everyone starts at nine o'clock." [...] And with another employer, um, I worked simultaneously for both. [...] Well, I explained the situation, "Yes!" I started at ten o'clock. To avoid rush hour. [...] The thing is, if the employer understood that if I was physically less exhausted during my commute, I would arrive at work in better condition. (PWD)

And I had to walk from there to home. I had a bus that went there, but the bus came every two hours. And very often I missed it because I was the last one to leave the assembly line. Because I was in a place where it really had to work until the last minute. [...] So sometimes I arrived and missed it, it passed right under my nose. And I said to the boss, is there any way to. . . finish earlier? She said not really, not really on the assembly line, she said "The machines, they need a certain way to shut them down, and you really need. . .," they really wanted you to have a car or other transportation than the bus. (PWD)

I completely said it in the job interview, I said "There are challenges. I'm in paratransit, I might call you two, three times a year because paratransit, it snowed and it couldn't pick me up. I'll be really sorry, but I promise I'll find ways to make up my time or work remotely," you know, I tried to sell that I could work and make up for it. So now, I said it outright in the interview. Because I know it's going to happen! (PWD)

Still, a few PWD participants said they either did not feel the need to discuss their transportation to work with their employer or potential employer or feared that if they discussed it, they could be discriminated against. One participant explained that she could discuss it with the employer if she felt they were open.

Finally, a participant identified colleagues as being potential facilitators for using public transportation to go to work. She suggested that traveling with a colleague using public transportation could be a reassuring element when a PWD has to take a new route.

Transport Infrastructure

Many reported barriers to PWDs' employment and transportation were associated with the transport infrastructure, including the organization and services related to the travel of individuals or goods [18].

- *Traveling Flexibility*

Participants identified the need for traveling flexibility to facilitate commuting to work. Indeed, having access to transportation is crucial for PWDs to secure employment. One participant with disabilities even shared that access to transportation was an issue when he wanted to fully take part in social work activities. In that sense, one job integration agent and one transporter suggested that employers could collaborate with transportation providers to facilitate the commuting of their employees with disabilities, and vice versa:

Transport in general, not just adapted transport, is a necessary condition for employment integration. (Employer with a disability)

An important element that PWDs and employment counselors consider when seeking employment is the proximity from home to the potential workplace because the duration of the commute can lead to a lot of fatigue during and after work. Therefore, commuting to a job that is close to home is perceived as ideal by PWDs and they might not apply to certain jobs that are considered too far away from home:

It's more the job of employment counsellors, at the time of job search, they will look for sure at where the person lives, and then they try to find something that is reasonable in terms of transportation. (Job integration agent)

And if it takes me 1 h of commuting by public transportation, well, I'll think twice about it. If it's a job that really matters to me, maybe, but if it's just a small job like that, I might think twice. (PWD)

Transport... it's the most exhausting thing, even in the context of my work, it's the use of transportation. (PWD)

The possibility of commuting by public transportation to the workplace is another factor considered by PWDs when making employment choices. Consequently, the availability of transportation services can either facilitate or hinder access to some jobs. Participants reported several elements that affected the flexibility of PWDs' commutes to work: a regular frequency of services facilitates commuting to work while infrequent services can hinder them. Additionally, some bus schedules may not align with the work hours of PWDs, hindering their ability to travel:

I always first look at what the distance is between their offices and the nearest accessible subway. That's the first element that could be a barrier. (PWD)

When the bus comes frequently; they're not afraid to miss it because they know there will be another one later. (Job integration agent)

The lack of transportation services seems to particularly impact PWDs living or working in more rural areas. To overcome transportation barriers, some PWDs mentioned that they moved closer to accessible transportation or to their work:

The opposite happened with my last job, which I got because it was my dream job, but then I chose my place of residence so that it would be close to my job. (PWD)

They know their son may never be able to drive. I know it's in their eventual plans to move. Because, you know, he's capable of working but he may never be able to have his own car. So it's a choice; do we stay in [a small city] or do we move to [a larger city] so he can take the bus and work. We know he'll never be able to get his driver's license. So anyway, it's like dilemmas sometimes that families face... Do we become the chauffeur for life, or do we move? (Job integration agent)

Having access to multiple modes of transportation is a facilitator for PWDs' employment. Participants described the possibility to use public transportation, paratransit, taxis, or to drive their own car or carpool as facilitators to go to work. Using regular public transportation was useful to go to work, especially in urban areas and because it is a flexible option. However, a few participants explained that the number of transfers between transportation, including changing buses, influences the jobs they apply for. Moreover,

one participant stressed that it can be challenging to coordinate many different means of transportation to be certain to arrive at work on time:

I would say that getting around in [big city] is much easier using public transportation, buses, and the metro. (PWD)

In fact, not driving anymore was less tiring for me. Taking public transportation, even though I found it a bit difficult to figure out the routes and all, was much less complicated than driving, much less complicated. (PWD)

But it's all a bit intertwined, as I use several modes of transportation to get around, so when one doesn't work, I can fall back on another. But it does bring constraints in terms of travel time and schedules, or the time I need to leave in the morning and the time I come back in the evening." (PWD)

Paratransit was also described as a helpful transportation mode because it is essential for some participants to go to work. Sometimes it is their only option and, therefore, it allows PWDs access to employment. Participants described paratransit as filling accessibility gaps in the regular network, addressing their needs, providing reassuring and secure services, or serving as an enviable plan B. The interviews reveal that paratransit can be appreciated by its clients and that the door-to-door service is particularly appreciated. Still, the eligibility criteria for paratransit make it so that some PWDs who would like to have access, and for whom it could improve their commute to work, do not qualify:

We mostly need to take paratransit to go, like, to hospitals that are super far from the accessible metro, just to fill in the accessibility gaps. (PWD)

My vision had decreased—yes, it was starting to feel unsafe. That's why we requested paratransit. We tried to accommodate me for the adapted transport and it's much safer. (PWD)

However, paratransit services were more extensively described as being inflexible by participants. They described the restricted business hours, the limited service area, and the obligation to provide an address as barriers hindering where and when PWDs can go to work, thereby influencing the possible jobs PWDs can apply to:

When I was still a student in criminology, during my criminology certificate, an opportunity opened up for me that I had to refuse because of paratransit [...] There was an opportunity for an intervenor at Ste-Justine who creates medical-legal kits in cases of sexual abuse. [...] But it's on call, you can receive a call at three in the morning, 'Come on, we have a victim.' Of course, I restricted myself from something that I probably would have loved to do in my life because I can't just call the transport and say, 'Okay, come pick me up! (PWD)

Additionally, the need to reserve paratransit services in advance was highlighted as an important barrier to the spontaneity of work travels for PWDs. This requirement adds a significant mental load as PWDs must always plan their travel to ensure they can get to work when needed. Paratransit is not adapted to the exigencies of some workplaces, preventing PWDs from leaving later or earlier or attending last-minute meetings elsewhere, for example. Many participants, including transporters, suggested that providing same-day transportation for workers with disabilities could be a solution worth exploring to enhance public transportation for employed individuals with disabilities. It could offer them greater flexibility:

You don't necessarily work from nine to four, or from... you know, from nine to five or from eight to four. Sometimes maybe your day will end a little earlier. Or maybe it would be worth staying a little later, but you can't manage that either, you don't have that option at work with paratransit. You have to... you have to respect what you've committed to. (Employer with a disability)

Paratransit was also described as not meeting the needs of parents with disabilities who work. Two specific issues were reported: the requirement to transport children in safety seats and the paratransit's lack of waiting at locations, such as drop-offs at daycares, forcing the workers to wait for another paratransit to reach their workplace.

Taxi is another transportation mode that was described as a fast means of transportation that can be used for commuting to work. Particularly, they can be an excellent plan B for PWDs when there is an issue with public transportation or when the PWD is in a hurry or running late. However, using taxis to go to work is not a viable long-term option because of its cost and accessing an accessible taxi when a PWD needs one can be challenging at times:

I was able to walk, take the metro, the bus, and well... when I was running late, then I would take taxis. (PWD)

But even if we say "Ok, let's forget about paratransit, let's take a taxi", well accessible taxis are available within fifteen minutes like any other car, it's not easy to find either. There aren't so many of them, often they are taken by paratransit. You have to book them in advance. (Transport provider)

The analysis of the interview revealed driving is a personal factor that can influence traveling flexibility. Indeed, the ability to drive a personal vehicle can facilitate employment for PWDs. Being able to drive can broaden job choices for PWDs because it helps to overcome traveling durations that would be too long or impossible by public transportation. It is also more reliable and flexible than public transportation:

I have less... I don't know how to say it, but I have fewer chances than, let's say, a neurotypical person, to get a job, you know? And not having my driver's license doesn't help. (PWD)

To provide access to the possibility of driving, one participant with a visual disability suggested legalizing autonomous vehicles.

Carpooling was mentioned by participants as another facilitator of PWDs' commutes to work. Thus, the social network can contribute by offering more traveling flexibility to the PWD. However, even if carpooling can be helpful, it is not necessarily ideal because conditions must meet the PWD's needs and PWDs are completely dependent on the driver to get to work, thereby hindering flexibility in their travels to work:

I even know we had a client whose employer would pick him up. Well, it just happened that he was on his way, so he would pick him up. But you know, the same thing applies; if the employer takes vacation that week, the young person has to take vacation the same week because he has no transportation. So, all of that takes away a certain autonomy and freedom from them. (Job integration agent)

Because I remember, my boss, when I worked in Montréal-Nord, she offered me lifts sometimes. And it's really faster, with a car. It was twenty minutes by car. But that person was so loud and talkative, and... she constantly talked, constantly. And her voice tone was high-pitched, so it was like... [...] So I often said, "Ah, no thanks," or... sometimes I took it and came back home, as if I had worked forty hours. (PWD)

- *Transportation Reliability*

Transportation reliability is essential to facilitate the use of public transportation to go to work for PWDs. First, possible lateness or even absence from work, sometimes occurring when using public transportation or paratransit, is a stressful and insecurity-inducing element frequently mentioned by the participants. They reported obstacles such as service stops, bus delays, buses not showing up, route modifications, metro breakdowns, and the impact of winter conditions on public transportation and paratransit services.

The duration of the paratransit journey was often described as causing annoyance, discomfort, and anxiety to the PWD because of all the waiting time and unpredictability of the commute duration. This is inherent to certain paratransit requirements, such as the need to be ready for a certain period in advance of the vehicle arrival and the routes combining the journeys of other users:

I was really forced to take paratransit. Summer and winter. And that... It caused all the problems that came with it. That is to say... much more limited in time, uh, much more, a lot of waiting, a lot of wasted time. Delays sometimes. Or frankly, really being much too early. (Employer with a disability)

It's not normal that from my home to my workplace, it's just five minutes by transportation, but that I'm going all the way to the other side of the city to pick up someone because they're also going to the hospital. At some point, it's living costs for me, significant costs, because you're asking me to be ready at seven in the morning. That, that shows me that maybe I could have slept for 45 min more, or done my dishes. (PWD)

Some PWD participants suggested reorganizing routes to reduce the duration to improve the paratransit experience. To transform this experience more positively and reassure the users, some transporters explain how they gradually implemented technologies to advise the user of the vehicle's arrival or to share the probable arrival time at the destination.

- **Transportation Cost**

Transportation cost was described mostly as a barrier to the use of public transportation to go to work by PWDs and by one transporter. Moreover, the expenses required to use a taxi made it a non-viable option for commuting to work in the long term, even though it would be practical on many occasions:

Pricing is indeed a major issue. I say, we put a lot of money into making our services accessible, but if people don't have the money to get on board, we're working for nothing. That's very, very delicate. (Transport provider)

Participants suggested that the public transportation cost could be reduced, that employers could contribute to cover the transportation cost, or that PWDs (or individuals with low income) could have access to a reduced transport ticket. Still, a job integration officer describes public transportation as an affordable option to go to work:

It was when I participated in a government program and they paid for my [public transport fees]. [...] That greatly facilitated transportation because I had more options; if I wanted to go to the South Shore, I could go to the South Shore because they paid for the [public transport fees]. (PWD)

- **Physical Inaccessibility of Public Transport**

In the interviews, many participants described how public transportation was sometimes physically inaccessible to them. Various barriers were reported, such as those related to boarding the bus or metro (e.g., stairs in the metro, the absence of an elevator in the metro, non-functioning access ramps to board the bus) or the inaccessibility of vehicles (e.g., lack of space in taxis, mobility size constraints in paratransit). One transporter also explained how the limited number of reserved seats or spaces for PWDs might hinder their transportation to work if they are full and they cannot enter the bus they had targeted to go to their job. As a facilitator, participants reported that the visual display of stop names and the verbal announcement of stops, along with bus numbers, are reassuring and facilitate the use of public transportation. Conversely, if announcements are only made verbally, it could be a hindrance for PWDs, especially for deaf individuals. It was proposed that they should also be provided in written form to give access to people who did not hear or understand the verbal announcement. Additionally, participants shared that it can be challenging to select their bus at a stop served by multiple bus lines.

A few solutions were mentioned to improve the accessibility of transportation or overcome its challenges. More generally speaking, a transporter suggested that to support the use of public transport to work, the number of accessible bus lines could be increased by targeting employment hubs. Another transporter suggested that better linkage between different accessible transportation systems could facilitate the mobility of PWDs. These same transporters also suggested that by developing and making information on the accessibility of different transportation networks available, it could support the use of public

transportation by PWDs. As an accessibility improvement, some participants (employers and PWDs) proposed to reserve transport or a seat for PWDs so that they can have a bigger personal space. Some employers even suggested a silent wagon to create a calmer environment or to reserve some hours for PWDs traveling.

3.2.2. Physical Factors

Natural and artificial elements of the environment were identified as barriers or facilitators to PWDs' transportation and employment. An accessible or inaccessible route to transportation or the workplace is a physical factor that can influence PWDs' transportation to work. Participants reported several elements along the way that can hinder smooth travel or even make it unsafe. Reported obstacles were a lack of coordination in pedestrian traffic lights, lack of lighting or streetlights, absence of seats at transportation stops, construction on the way, walking distance, inaccessible stops, lack of pedestrian crosswalks, and the presence or condition of sidewalks. Transporters explained how to ensure accessibility, the city and transportation services must be coordinated together. For example, a transporter may want to make an accessible stop, but the sidewalks around it are the responsibility of the city so they must coordinate to make everything accessible together. An observation from our data is that the person responsible for the realization of the accessibility in a transportation service is not necessarily a specialist in accessibility and learned on the job what to do.

Winter was often mentioned by participants as a barrier to commuting to work. More precisely, winter conditions can influence the journey of PWDs to the transportation itself, the vehicles, or the public transportation, making commuting to work unpredictable and harder.

When the windows are fogged up in winter, I had no idea where I was. (PWD)

In winter, either I go with a cane and fall a couple of times each time, or I push with my walker which is not really made for snow. So, it's super difficult to push in the snow. In winter often, I have a lot of absences. I have to cut my schedule and I lose a lot of money. (PWD)

Certainly, the paratransit sometimes cancels for me if they judge that there is too much snow. So yes, it has happened to me to have to call my employers to say "Sorry, the transport decided that I wasn't leaving today!" (PWD)

Finally, the physical accessibility of employment locations (e.g., buildings, offices) is a factor that can influence the jobs that PWDs apply for. Participants described how both the ability to enter the building and accessibility inside influence their possibility to access or maintain a job.

4. Discussion

This study identified facilitators, barriers, and solutions to commuting to work for PWDs associated with personal and environmental factors, as suggested by PWDs, employers, and transport providers. One key finding is that despite the influence of personal factors, it is primarily environmental factors that seem to hinder access to transportation and employment for PWDs. Issues related to transportation infrastructure and the physical accessibility of vehicles appear to significantly impact the mobility and flexibility of PWDs when traveling to work. In the interviews, PWDs and job integration agents described how navigating the public transportation system affected their relationship with employment and employers, adding mental strain and causing PWDs to arrive at work feeling fatigued and stressed.

The various barriers and facilitators related to transportation infrastructures highlighted in this study are consistent with those described in past research on employment and transportation for PWDs, including issues related to the physical accessibility of vehicles [26–31], transportation flexibility [29,32–39] and its cost [14,26,40]. Access to public transportation impacts not only the employment of PWDs but also that of adults without disabilities, particularly those living in metropolitan areas and in low-income neighborhoods [41,42]. This underscores the urgency of making transportation services more accessible, as it would benefit the entire population in accessing job opportunities more easily.

Another key finding from our study is the significant role of social networks in supporting the commute to work for PWDs, a topic extensively discussed by PWDs, employers, job integration officers, and transportation providers. This influence of social networks appears to be more specific to the reality of PWDs compared to the non-disabled population. Our study confirmed the role played by families and friends in supporting the commute to work for PWDs by providing transport to work [16,17] or establishing norms for using public transport [16]. Our study adds that families can support PWDs by teaching their children or teenagers with disabilities how to use public transport. However, while transportation provided by relatives may seem very helpful, our data raise questions about the generalizability of this solution, particularly when the relative is no longer available to provide transportation to work. Additionally, as 26% of PWDs live alone [43], this solution may not be suitable for everyone. Therefore, it seems important to explore other solutions to overcome the challenges encountered during the commute to work for PWDs.

In terms of social networks, as highlighted in recent literature reviews [13,44], transportation staff, particularly drivers, have been identified as potential supporters or hindrances to the use of transportation for PWDs in commuting to work. In our study, transport providers emphasized their responsibility to adequately train drivers, to ensure inclusive behaviors toward PWDs. This echoes previous research recommending disability training for drivers [45–47]. Indeed, stakeholders (clinicians, transport provider representatives, researchers), consulted using a nominal group technique, identified driver training as the number one priority to enhance accessible transportation [46]. It was also prioritized by youth with disabilities and their parents. Additionally, drivers themselves expressed a desire for training to better serve PWDs [45]. Disability training for drivers seems a promising solution as previous research demonstrated that such training can improve communication between paratransit drivers and individuals with communication disabilities [48] and decrease ageist attitudes [49].

Additionally, our study sheds light on the influence of fellow passengers on transportation accessibility for PWDs, an aspect not previously acknowledged as a factor affecting their commute to work [13]. The behavior of other passengers has, however, been addressed in other studies focusing on the social dimension and discriminatory acts within public transportation [50,51]. Conducting disability awareness campaigns seems essential to transforming passenger interactions with PWDs in public transportation. A transport provider participant in this study also emphasized that this aspect was part of their transportation services' inclusivity policies.

This study contributes to filling a gap in the literature regarding transportation to work for PWDs by examining the roles and perspectives of employers on this issue [13].

It was found that employers without disabilities possess limited awareness of the challenges faced by employees with disabilities during their commute to work. However, they recognized the potential role they could play in addressing these challenges and expressed willingness to address them. Some employers even suggested solutions such as conducting surveys to understand their employees' transportation needs or reconsidering their perspectives on accommodations.

The role of employers was also recognized by transport providers, who explained that alignment between the transporter and the employer is essential to ensure the transportation of PWDs to work using public transport. PWDs in this study emphasized the importance of employer involvement in their transportation issues for commuting to work. They shared facilitators and barriers that were also reported in previous research, such as the impact of employers' beliefs [52–55], working conditions [29,31,36,54,56,57], and physical accessibility of the workplace.

Employers' beliefs and knowledge about disabilities have indeed a major impact on hiring and retaining PWDs [58,59]. Many employers' beliefs act as barriers, such as expectations that PWDs are unproductive, costly, or lack appropriate qualifications. Conversely, positive attitudes toward hiring PWDs, such as expecting a competitive advantage, wanting to help others, or valuing diversity in the workplace, can support PWDs' employment.

Therefore, raising awareness and involving employers in transportation issues appears to be critical to facilitating the employment of PWDs.

Finally, the personal factors outlined in this study predominantly pertain to the experiences of utilizing public transportation. Identity factors were mentioned exclusively by PWDs while transportation providers also discussed the influence of organic systems and capabilities on PWDs commuting to work. Both groups highlighted the importance of assistance or training in using regular transportation as a key facilitator. This solution has been frequently cited in previous research as support for work-related travel for PWDs [28,35,60–63], including young people, as well as individuals with autism [39,64,65], blindness [14,17,66], physical disabilities [16,67], and neurological [16] or intellectual disabilities [68,69]. Moreover, a pilot mobility training program conducted by a metropolitan transport provider enabled 60% of the 24 trained PWDs to incorporate regular public transportation into their travel routines [70]. Still, participants in this study reported that using regular transportation often induces anxiety, particularly during challenging experiences on buses and metros, a feeling that may be exacerbated for women.

Strengths, Limitations, and Future Research

To our knowledge, this study is the first to explore the topic of commuting to work for PWDs from the perspective of key stakeholders, including PWDs themselves, employers, and transportation providers. The inclusion of job integration agents in our sample is also a strength, as they provided many relevant situations, acting as a bridge between the employee with a disability and the employer. This diverse sample allowed us to pinpoint several obstacles, facilitators, and potential solutions for PWDs commuting to work. It revealed that many transportation providers were familiar with the challenges faced by PWDs who work and use public transportation services.

Another strength of our study is the identification of identity factors that could potentially influence PWDs commuting to work, confirming that intersectionality must be considered in this issue. However, further research is needed to better understand how these identity factors interact in these situations. For example, in this study, cultural background seems to have minimal impact on the issue revolving around the intersection of employment and transportation. However, other studies demonstrated that acts of racism are effectively present in public transport [71], indicating a need for more investigation into how it affects PWDs when traveling to work.

One limitation of our study pertains to the employer and job integration agent participants. The majority of these participants had less than two years of experience in their roles and limited experience with hiring PWDs in general. To clarify the perspective of employers on PWDs commuting to work, it would have been relevant to interview individuals with more experience on the subject. Future research could focus on employers working in supported employment enterprises or establish inclusion criteria that require a certain level of experience with employees with disabilities. Additionally, it is important to note that three of the employers interviewed had disabilities themselves and, thus, also shared their own challenges related to commuting to work.

Finally, the methodology of this study could have been improved with member checking by presenting verbatim transcripts and results to the participants. This would have enhanced the credibility of the results and possibly enriched them further [19]. Additionally, since most of the qualitative analysis was conducted by AT alone, peer-checking and debriefing sessions could have been held more regularly to enhance the credibility and confirmability of this study [19,25].

5. Conclusions

This study reaffirms the critical role of public transportation in facilitating access to and retention of employment for PWDs. It underscores how environmental factors, particularly transportation infrastructure and social networks, exert significant influence on the commuting experiences of PWDs. Furthermore, our findings reveal that the interviewed employers are not aware of the transportation challenges faced by their employees with disabilities but that they appear willing to take steps to provide support. This study identifies various ways in which employers could enhance the workplace experience for PWDs, such as adjusting job requirements or offering flexible scheduling. Additionally, the interviewed transportation providers demonstrate an understanding of the commuting challenges faced by PWDs, although they sometimes encounter other issues like funding or coordination with municipalities. Overall, this study emphasizes the need for systemic solutions that involve all stakeholders to overcome obstacles and facilitate commuting to work for PWDs.

Supplementary Materials: The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/disabilities4020025/s1>, File S1: Interview guide for people with disabilities; Table S1: Additional participants' quote.

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