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Abstract. Public transportation is a vector of social inclusion. However, people with intellectual and developmental disabilities face a variety of barriers to independent travel in their communities. The results of this survey of support staff show that assistive technology systems can be a solution to improve the teaching of navigation skills in this population provided that it is truly adapted to the profile of the individuals: cognitive characteristics, needs, and initial skill level. Finally, effective use in daily life also requires the involvement of professionals in the design of such tools

Keywords: Intellectual Disability, Independent travel, public transportation, technological solution, mobility.

1 Introduction

Independent travel is a fundamental requirement to gain access to resources in the local community. As a result, teaching travel skills to persons with intellectual disabilities (ID) is a major goal of education in order to promote their independence and social inclusion [1, 2].

ID refers to significant limitations in both **intellectual functioning** (IQ <70) and **adaptive behavior**, which covers many everyday social and practical skills. This disability originates **before the age of 22** according to the Diagnostic and Statistical Manual of Mental Disorders (DSM)-5th edition [3] and the American association on intellectual and developmental disabilities (AAIDD) [4]. According to AAIDD, intellectual functioning refers to abilities such as reasoning, planning, abstract thinking, understanding complex ideas, and problem-solving. Adaptive behavior refers to the set of conceptual skills (language, reading, writing, concepts of numbers, etc.), social skills (interpersonal skills, social responsibility, gullibility, etc.), and practical skills (personal care, use of money, occupational skills, health care, travel/transportation, etc.). All of these conceptual, social, and practical skills allow the individual to function on a daily basis in his

or her usual life context. Individuals with ID face difficulties in the ability to meet expectations of autonomy and responsibility given their age and the cultural context in which they lead their lives. The causes of ID are multi-factorial and this population presents a very high heterogeneity [5]. Indeed, the levels of severity of ID are based on the description of the person's daily functioning by considering the conceptual, social, and practical domain and the level of support they need. There are then 4 levels of ID severity: mild, moderate, severe, or profound [3].

Field surveys conducted with this population show a strong restriction of independent travel, which is mainly performed in the vicinity of the home and the institutions attended [6-8]. Difficulties in planning the trips are mentioned by the individuals themselves and human assistance is often needed (families, professionals, etc.). Another complex problem concerns the management of unforeseen events or disruptions in transportation such as route changes, delays, or even the presence of crowds during rush hour transport and human errors (wrong directions, bus or metro line; failing to get off at the right stop, etc.). In these situations, people with ID do not always know how to react, may feel anxiety, and have difficulty asking for help [6, 7, 9].

Community mobility includes different dimensions such as the representation of the space in which one moves, the use of transportation, appropriate interactions with other users of public space, and the management of unforeseen events that may occur during travel [10]. These different facets of mobility make the process of helping adolescents and young adults with ID to become autonomous difficult and time-consuming [9]. A solution could then come from technologies designed for navigation. This involves teaching the affected individuals specific skills such as crossing the road safely, planning a few routes within local environments, and following the appropriate procedures for using public transport: defining the destination, determining the departure time, knowing where to get off the bus or the metro once the destination has been reached, and following the safety rules in the event of an accident or emergency. In general, studies related to the design, use and assess the effectiveness of navigation assistant shows that people with ID can learn all the behaviors required to move around safely and easily following individual training, detailing each behavior to be adopted, at the person's pace. Such training takes place over several months or even years depending on the skill level and initial experience of the person being supported [2, 11-15].

However, this approach is not without its limitations: it allows people to be taught a few fixed routes, and it is difficult to teach them how to react to unexpected events. Moreover, work on the design and use of assistive technology solutions for travel assistance for people with ID remains scarce and often involves participants with different cognitive disorders (dementia, epilepsy, stroke, etc.). This heterogeneity makes it difficult to generalize the results obtained. Finally, the acceptability and acceptance of such tools are very little evaluated by the people concerned (people with ID, professionals, and families). Through the scientific literature, many factors are now better identified as having an impact on the acceptability and acceptance of these devices by these populations. These include the perceived "need" for assistance or help, recognition of the quality of the product or usability, availability, and the cost of the technological product [16]. In addition, individual characteristics such as users' health sta-

tus/level of impairment severity, and users' familiarity with assistive technology products are also other criteria to be considered in the prospective judgment toward these tools [17]. Finally, it is essential to consider the implications for individuals around the person with ID, especially support staff [18-23]. Indeed, the proper functioning of the equipment, ensuring that the person knows how to use it and that he or she carries it with him or her when traveling outside of his or her living space are additional points of vigilance for the professional entourage. In addition, the training of professionals in the use of the technological product (to access the location of the person being supported) and in alternative solutions in case of malfunctioning are necessary so that the proposed tool is not perceived as an additional burden that would prevent its effective use [20, 24]; or even contribute to its abandonment after purchase [17]. Similarly, it is essential that the person being cared for and the support staff or family entourage easily integrate the technological assistant into their daily routines and are satisfied with it. For these reasons, [17] suggests taking into account the point of view of the person being supported and his or her professional caregivers and/or family environment jointly, when making decisions about the use of technological aids. Regarding the use of navigation aid technologies (GPS) for vulnerable populations (elderly people with or without dementia, people with sensory or cognitive impairments following a stroke), very few studies specifically concern people with intellectual disabilities.

Although old, the question of independent travel for people with ID is still topical because of the importance of this dimension as a necessary condition for the social participation of the people concerned. In addition, the characteristics of the constantly changing environments hinder these people in their autonomous daily movements. Several reasons explain these difficulties: the increasing extension of territories, the complexity of transport systems, the digitalization of services related to mobility which in many cases replaces human assistance, and the flexibility needed to adapt to these changes end up excluding a large number of persons with ID [25]. As shown in various field surveys, these individuals often rely on assistance from family and friends and severely restrict their travel compared to others without disabilities [8].

Faced with these difficulties, in addition to the help provided by the family, mobility assistance systems can help promote the daily autonomy and social inclusion of people with ID. In this descriptive study, we explore different dimensions of mobility (elaboration of spatial representations, use of transport, problem-solving during travel, use of assistive technology systems during travel) and question carers about the contribution of technological aid in the teaching of travel skills. Moreover, it is essential to rely on the professionals who accompany these people, not to replace the people concerned, some field surveys give voice to them [6, 7, 26], but to examine our object of study from another angle and obtain a diversity of viewpoints. Thus, this study relies on the perception of professionals in the medico-social sector, who teach these people to move around on a daily basis, about the resources and difficulties encountered by people with ID during their travels, the skills deemed necessary to learn to move around and the modus operandi used to structure the learning. It also seems beneficial to us to interview a large number of professionals in order to overcome the difficulties encountered in generalizing the results of work involving a small number of participants in the literature. Thus, we interviewed professionals in order to answer the following questions:

What is the level of complexity of the spatial representations (landmarks, routes, cognitive map of the environment) developed by ID individuals and what use do they make of them to get around on a daily basis? What is the degree of efficiency in the use of transport by these people? What resources and strategies do they mobilize in case of unforeseen events? What are the tools most used by these people during their travels? How is the learning of autonomous travel structured by professionals? What important principles should a technological aid dedicated to navigation and adapted to people with ID respect (presentation, content, proposed aids, functionalities, etc.)?

2 Method

2.1 Participants

115 French professionals (84 women and 31 men) working in medico-social establishments located in the Nord and Pas-de-Calais departments (Hauts de France region) voluntarily responded to the survey (occasional sample). The sample included 47.83% of specialized educators or monitors and 26.96% of paramedical professionals (psychometricians, occupational therapists, etc.). The length of professional practice in specialized institutions ranged from 1 to 37 years, with an average length of 11 years (M = 10.9; SD = 8.25). In addition, these professionals had an average of 10 years of experience (M = 9.58; SD = 7.99) in supporting the autonomy of people with ID. Most of them worked in urban areas (72.17%). 32 professionals (27.82%) worked in an institution located in a rural or semi-rural area or in an industrial zone. They accompanied people with ID aged between 10 and 60 years in medico-social establishments and services. 53 professionals (46.09%) stated that they worked in the adult sector (20-60 years), 50 professionals (43.48%) worked in the child/adolescent sector (10-20 years); 10 professionals (8.69%) worked in both the adult and child/adolescent sectors (mixed sector) and 2 participants did not answer this question. As for the level of severity of the disorders, 68 professionals mentioned that they work with a population with mild to profound ID, 17 professionals indicated that they work with a population with mild ID, and 30 professionals did not specify the severity of the ID of the public they work with. As regards associated disorders, we note mainly the presence of psychological disorders, behavioral disorders, communication and language disorders, and autism spectrum disorders (70% of disorders cited). On the other hand, sensory deficiencies, and motor disorders, concerned 5% of the disorders cited. Finally, 25% of associated disorders were not specified.

2.2 Material

The questionnaire, constructed by us, included 35 questions, 21 of which were closed questions (multiple choice, dichotomous, enumeration) and 14 open questions. The tool was based on the major dimensions of people's navigation studied in recent scientific literature and those used in orientation and mobility programs for people with ID [27, 11]. The questionnaire was proposed in two versions: a paper version completed by 77 professionals and an online digital version completed by 38 and carried out with the

Lime Survey software. The paper version was submitted and distributed by e-mail to associations supporting people with ID.

3 Results

The open-ended questions were manually analyzed for content, and then the responses obtained were recoded into objective, mutually exclusive, comprehensive categories. In this paper, we present the results in relation to travel patterns, obstacles and the use of a technological aid by people with ID.

3.1 General information about travel patterns

According to professionals, the majority of trips start at home (82.72% of trips identified by professionals). The main destinations are going to school, work, leisure activities, medical appointments, a supermarket, and to social contacts.

On a scale of 1 (no influence) to 10 (very important influence), all professionals (n=115) placed the effect of DI motivation on learning to travel independently at an average of 7.75 (SD = 1.39). In other words, this factor contributes significantly to learning and achieving independent travel.

Regarding signage, 85.22% of respondents consider that the signs, maps, etc., available in the environment are not adapted to people with ID because of their complexity. Furthermore, family fears and reticence have a significant influence on learning to travel independently. In fact, on a scale of 1 (no effect) to 10 (significant effect), all the respondents placed the average effect at 7.24 (SD= 1.62).

3.2 Skills related to independent travel

Creating spatial representations about the environment, planning one's movements. 94.78% of the professionals considered that people with ID use various strategies to move around in the environment in general. In response to the open-ended question asking them to specify the different strategies used by people with ID, the professionals formulated 213 proposals that were recorded. In particular, they mentioned strategies relating to finding landmarks (39.34% of the proposals related to the selection and memorization of landmarks), strategies for learning and memorizing the stages of the journey, in other words, the formation of routines (27.23% of the proposals formulated) and strategies for requesting human assistance, i.e., asking for help from professionals, parents, third parties or even traveling in a peer group (24.41%). Technological assistance (6.10% of the proposals made by professionals) and the use of reading (2.81% of the proposals cited) are two strategies that are little used by people with ID during their travel. According to the professionals, two tools are particularly used by these people during their travels: the support developed by the professionals (cited 98 times) and the cell phone to contact a person in case of need (cited 98 times).

Among the individual factors that cause the most problems (question, "In your opinion, which of the following factors are the most problematic for people with ID to travel

alone in their neighborhood or city?"), all the professionals interviewed identified the factor "knowing how to plan a trip" (15.76% of the selected proposals) as the one that causes the most difficulties for people with ID when they have to travel alone. The second most difficult factor (12.57% of the proposals) concerns the factor "understanding the instructions given by outsiders" followed by the factor "memorizing the steps of the journey" (11.82%). These first three factors are completed by the factor "knowing how to read" (this factor represents 11.63% of the proposals), "paying attention to elements and information in the environment" (10.7% of the occurrences), and "knowing how to select fixed landmarks in the environment" (9.94% of the occurrences). Then come to the fact of not knowing one's left and right were mentioned 50 times (9.38%), and the factor "knowing how to resist distractions present in the environment", which is less identified as posing the most difficulties to ID people (8.25% of occurrences for each of these factors). These results are shown in Table 1.

Table 1. Distribution of the perceived barriers to independent travel

Factors that cause the most problems in achieving autonomous travel	Number of occurrences	Percentages
Knowing how to plan a trip	84	15.76
Understanding the information given by outsiders	67	12.57
Memorize the steps of the journey	63	11.82
Know how to read	62	11.63
Paying attention to environmental information	57	10.7
Knowing how to select fixed landmarks in the environment	53	9.94
Know your left and right	50	9.38
Knowing how to use landmarks to get around	44	8.25
Knowing how to resist distractions in the environment	44	8.25
Other factors	9	1.7
Total	533	100

Using public transportation.83% of professionals support people with ID who use public transport. The most commonly used means of transportation is the bus (52%), followed by the train (25%), the tramway (14%), and the subway (9%). Table 2 presents the responses regarding the use of transportation. The results do not reveal any major difficulties in the use of transport by these people. Generally speaking, the purchase of a ticket is "sometimes" (54.74% of professionals selected this answer) or even "often" (28.42% of professionals selected this answer) carried out by the people themselves and they validate it "always" (49.48% of professionals selected this proposition) or "often" (34.74%) when they get on. The majority of people with IDs know "sometimes"

(36.84%) or "often" (31.59%) that their ticket has a validity period. 42% of respondents believe that people with ID sometimes take transport schedules into account when organizing their trips. The identification of the direction of transport is "often" (44.21%) or "sometimes" (43.17%) correct according to the professionals. Regarding getting off the means of transportation, people with ID are "often" able to point out the desired stop (48.43%) and "often" getting off the means of transportation to the right stop (68.42%). 58.95% of the professionals stated that the people accompanied "often" have a socially adapted attitude and behavior. 79% of the professionals mentioned difficulties (loss of reference points, planning difficulties, the complexity of the journey) during connections (changes of lines, directions, and combinations of different means of transport to continue the journey to the destination).

Table 2. Professional responses (n=88) related to DI individuals' skills in using transportation (responses expressed as percentages).

People with intellectual disabilities	always	often	occasionally	never	Does not apply to
Purchase their own ticket	6.82	27.27	56.82	7.95	1.14
Validate or stamp their ticket	51.13	32.95	13.64	1.14	1.14
Know how to consider the schedules	20.45	31.82	40.91	6.82	0
Locate the direction of transport	6.82	44.32	44.32	2.27	2.27
Know how to signal the stop where they want to get off the means of transportation	23.86	46.59	26.14	1.14	2.27
Getting off the means of transportation at the right stop	18.18	69.32	12.5	0	0
Know the safety rules	22.72	39.80	32.95	2.27	2.27
Have a socially appropriate attitude and behavior	7.95	59.09	31.82	1.14	0

Resolve unforeseen events that arise during travel.75.65% of the professionals consider that people with ID do not react appropriately if a problem occurs during a trip (detour, error on the part of the person, failure of public transport, etc.). According to the 114 professionals who answered the open question "in your opinion, what do these people do when they are confronted with a problem during their trips?", several strategies are observed in this type of situation: both "adapted" strategies (50.42% of the proposals formulated out of a total of 240 proposals put forward by the professionals) and non-adapted strategies (48.75% of the proposals formulated).

Adapted strategies correspond to behaviors that enable to persons with ID to resolve the unexpected by mobilizing their own cognitive and emotional resources and the social or material environment. In the event of an unexpected event, ID users predominantly turn to their social environment, whether it is their close circle (professional referral, family, friends), whom they ask for help by telephone, or third parties present at the scene (transport network professional, other users). This solicitation of the social environment is the first strategy used (39.17% of the proposals) compared to other strategies such as turning around, going back to a familiar place (home, establishment, etc.) which represents 5% of the proposals mentioned or reorienting oneself, taking the next means of transport (5% of the proposals). Finally, reading signs in the environment received 1.25% of the proposals mentioned by the professionals.

Non-adapted strategies refer to reactions and behaviors that do not make it possible to resolve the unexpected, endanger the person, or lead to the renunciation of the journey. According to professionals, people with ID suffer from anxiety and let themselves be overwhelmed by emotions when they encounter a problem during the trip (23.75% of the suggestions made). Professionals also report other behaviors such as not reacting, and waiting on the spot without taking any initiative (10.42% of suggestions). 6.25% of the proposals refer to the fact of being disoriented, or "lost" in these cases. Finally, some of the professionals' responses, which were in the minority, concerned giving up the trip (3.33%), showing behavioral problems (2.5%), walking the route (2.08%), or following a person they met on the route (0.42%). All of these results are shown in Table 3.

Table 3. Strategies used by people with ID during an unexpected event, according to professionals

Strategies in case of unforeseen events	Number of proposals	Percentages
Adaptive strategies	**121**	**50.42**
Solicit the people around you by phone (referring professionals, family, and friends...)	49	20.42
Ask for help from others in the vicinity (transportation professionals or other users)	45	18.75
Turn around, and go back to a familiar place (home, institution, etc.)	12	5
Redirect yourself, take the next bus	12	5
Read the signs	3	1.25
Non-adaptive strategies	**117**	**48.75**
Panic, anxiety, stress, being overwhelmed by anxiety (screaming, crying, getting upset)	57	23.75
Do not react, wait on the spot without asking for help	25	10.42
Being disoriented, lost	15	6.25
Staying at home, giving up travel	8	3.33
Behavioral disorders (including stereotypies, mutism, etc.)	6	2.5
Walk the route regardless of the distance	5	2.08

Following someone thinking they are going to the same place	1	0.42
Other strategies		
Getting off the means of transport	2	0.83
Total	240	100

3.3 The use of a technological aid dedicated to navigation in people with ID and professionals

We asked professionals about the tools used by people with ID when they travel. According to the answers obtained, two tools are particularly used by people with ID during their travels: the material developed by the professionals accompanying the people (cited 98 times) and the cell phone to contact a person in case of need (cited 98 times). Eight professionals gave an "other" answer to this question, mentioning the following tools: "Identifying journeys beforehand, accompanied concrete practice, locomotion lesson", "Observations/habits", and "Word of mouth".

Table 4 shows the tools used by professionals for learning to move independently with people with ID and the number of responses obtained for each tool. Among the proposed tools, the most used by professionals are tools specifically developed for the person (cited 97 times), the cell phone (cited 79 times), photographs of the environment (cited 61 times), and maps (cited 44 times). Navigation applications for smartphones such as Google Maps or Mappy (18.26%) as well as public transport network websites (17.39%) can also be used by professionals. On the other hand, navigation websites (8.69%) and smartphone applications for public transport networks (6.95%) are lesser used by carers. Three other answers were proposed by the professionals. It concerns the repetition of the journey, the chaining.

Table 4. Frequency of use of tools by professionals when learning to move with people with ID.

Tools preferred by professionals for travel	Number of occurrences	Percentages
Tools you have developed for the person (plans, maps, route cards, etc.)	97	84.35
Cell phone	79	68.70
Photographs of the environment	61	53.03
Maps (city, subway, bus, etc.)	44	38.26
Navigation applications for smartphones (Google Maps, Mappy, etc.)	21	18.26
Website of the public transport network	20	17.39
Navigation website (Mappy, Google Maps, etc.)	10	8.69
Smartphone application of the public transport network	8	6.95
Other (repeating the route, chaining)	3	2.61

To the question, "In your opinion, if a smartphone travel assistance application for people with intellectual disabilities were developed, what important principles should it respect (presentation, content, proposed aids, functionalities, way of transmitting information, etc.)?", the content analysis made it possible to distinguish several categories of answers. The professionals' responses advocate a simplified presentation of information, using auditory and visual aids. They also favored European standards for making information Easy to Read and understand1. Concerning the functionalities that such an application could offer, the answers suggested that the system should allow to establish itineraries and guide the person, ask for help in case of need, be geolocated, control the application by voice, manage unexpected events, give an indication of the duration of the journey (time of the journey, calculation of the departure time according to the desired arrival time, etc.) and integrate the data of public transport. Finally, the proposed application must be accessible and ergonomic, it must adapt to the user's preferences.

4 Discussion

This study carried out among professionals accompanying people with ID has enriched our knowledge of the characteristics of the mobility of these people. They very often make short, routine trips, limited to familiar environments. Although their motivation to learn to move around on their own contributes significantly to achieving this objective, the people accompanied nevertheless encounter difficulties in their daily movements. Such difficulties may be exacerbated by, among other things, inadequate signage, and reluctance on the part of their family and support staff. These reluctances are due to difficulties perceived by their relatives in planning and solving problems arising during travel. These results are in line with previous studies [28, 6, 7].

In addition, this descriptive study takes up some skills that are essential for learning to move about on one's own and sheds particularly rich light on the support practices of professionals and also their opinions and knowledge about the movements of people with ID:

- Creating spatial representations: the results show that people with ID select elements of the environment such as landmarks and memorize the stages of the journeys they must make. This result confirms those obtained in other previous works, adopting a comparative approach and showing learning of the environment from landmarks, and memorization of routes that requires many trials and includes several errors [29-31]. Throughout the literature, landmarks and routes form a first level of representation of the environment that continues to become more complex and subsequently promotes other more elaborate behaviors such as shortcuts or detours that require recourse to a more accomplished level of spatial representation namely knowledge of the configuration [32-33]. In people with ID, the privileged use of landmarks and routes as tools for representing and navigating the environment is justified in more than one respect: very few of these people have a satisfactory command of reading, and those who can read

[1] https://www.inclusion-europe.eu/easy-to-read-standards-guidelines

make little use of reading to orient themselves or follow directions [34-35]. This finding holds true during routine travel and during unexpected events as shown in this study.

- Using transport: Professionals consider that the various sub-skills that make up the ability to use public transport (planning departure times, buying tickets, understanding the concept of direction in transport, etc.) are mostly acquired despite the varying levels of mastery among ID people. This variability is partly explained by the fact that using transport requires making specific decisions (e.g. deciding on the appropriate means of transport, getting on the bus, looking for a seat, finding out where to get off, signaling the stop, and getting off, etc.), but also mobilizing other resources not directly related to travel as such, such as reading, time management, use of money, lateralization, etc. However, mastery of these skills in general is very variable among people with ID. Finally, the results related to changes (connections) in transportation underline a point of increased vigilance for professionals and persons accompanied who may encounter significant difficulties with these changes.

- Resolving unforeseen events during travel: a large majority of the professionals interviewed recognize the negative influence of emotions (fear of getting lost, of making mistakes, of other travelers) on travel in the environment in general. In addition, a majority of professionals believe that people with ID have poor adaptation in unexpected situations. In the same proportions, they report strategies adapted to the situation, but also difficulties for the persons accompanied to regulate their emotions in these particular situations in order to solve the problem. These observations in relation to new, conflicting, complex situations during travel are pointed out in some works [26, 34-35]. Addressing this topic during learning is recognized by the majority of professionals as having a high to very high priority. To do so, they mainly advocate mobilizing one's social environment (asking the referring professional for help by phone, calling the family, or asking a third party). In addition to this strategy, they mobilize their cognitive resources to solve the problem (find another way, etc.) and finally regulate their emotions by asking the people involved to calm down.

The results of this survey show a restrictive use of navigation aid systems by people with ID and the professionals who accompany them. In fact, during training, professionals make little use of this type of tool and prefer to carry out journeys directly in the field with the person with an ID or to draw up itineraries based on photographs of the environment, the stages of the journey, a simplified map of the town, the journey, etc. Similarly, people with ID make very little use of technological tools to plan their journeys but also during the execution of the journey. They reserve the use of their smartphone, on which an application dedicated to navigation can be implemented, to call a relative in case of need or unexpected event. Human assistance is preferred in these emergency situations. Nevertheless, the professionals interviewed recognized the importance of a technological assistance system dedicated solely to navigation and adapted to the cognitive profile of the users. Although this survey does not focus on the acceptability and acceptance of technological solutions for independent travel, interviewees outlined the characteristics and functions that such a tool should fulfill.

One of the limitations we can formulate here concerns the fact that these results are the perceptions of professionals, who despite their long experience and expertise developed on this subject, may have different perceptions of the issue from people with ID

themselves. Overall, this descriptive study consolidates and enriches our knowledge about the mobility of people with ID. Indeed, the majority of work related to this topic relies on a research design that makes it difficult to generalize the findings obtained to other cases due to samples with very few participants [11, 36, 15]. In addition, we have knowledge pertaining to mobility learning methods, materials, and tools used by professionals and DI individuals. Thus, the information obtained allows us to distinguish axes of work that seem particularly important when learning mobility: planning trips and managing unexpected events. With regard to adapting to the environment, they highlight the need to simplify information (signs, maps, timetables, etc.) to make it easier for people with ID to find their way around and take information when using transport and making connections. In addition, the results provide information that is important to consider in the creation of technological aids. Indeed, as far as disruptions, deviations, and unforeseen events related to the transport system are concerned, we can wonder about the opportunity that people with ID and their relatives have to know about these events in advance and the need to have a reliable, available and adapted communication system so that they can consider other solutions for the continuation of the journey. Several collaborations between researchers stemming from various disciplines (psychology, education, computer science) as in Letalle and her colleagues [37], persons with ID, their families, and support staff seem to be necessary to define conceptual and practical aspects of technological solutions dedicated to navigation for the targeted population.

5 Conclusion

This paper presents a survey study among professionals accompanying people with intellectual disabilities (ID). The survey revolves around the mobility of people with ID, their mode of transportation, the challenges facing them as well as possible ways of dealing with these challenges. The survey reports how the mobility of these people is generally limited to a few, well-known trajectories in familiar environments. They are, in many cases able to use public transportation. However, among their biggest challenges are unforeseen events and incidents on their journey. Human assistance seems to be the privileged solution adopted by persons with ID as well as their family/accompanying professionals. The use of technology is very limited but might be of value if adopted, with the condition of it being adapted to the characteristics of the target population and the local environment.

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