

CRITICAL ELEMENTS OF DISABILITY MODELS AS DETERMINANTS OF TRAVEL INTENTION OF PEOPLE WITH DISABILITIES TOWARDS NATURAL AND CULTURAL DESTINATIONS

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Abstract: The present empirical study aims to determine the key factors influencing the travel intention of persons with disabilities who live across the Tungurahua Province, Ecuador. A cross-sectional survey was conducted between September 2019 and mid-March 2020, and collected 473 valid questionnaires containing critical components of the medical and social models of disability. Collected data were quantitatively analysed with multiple regression analysis. Results showed that some crucial elements of the social model of disability (i.e., socio-demographic features and destination quality dimensions) and an element of the medical model of disability (i.e., dependency or need of other persons) significantly affect the travel intentions of persons with disabilities ($p < 0.001$). Findings allowed to conceptualise a new theoretical framework to potentially address and solve accessible and inclusive issues of persons with disabilities from Tungurahua Province-Ecuador and other international nations with similar natural and cultural attractions.

Key words: Accessible tourism; Tungurahua-Ecuador; tourism demand; travel intention; persons with disabilities

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INTRODUCTION

Accessible Tourism has striven to enable persons with disabilities (hereafter PWDS) to pass from being considered a small group of marginalised and excluded persons with limited participation in tourism activity (Darcy et al., 2020; Kastenholz et al., 2015; Özcan et al., 2021, Wall-Reinius et al., 2023) to become a potential market segment for the tourism industry (Domínguez et al., 2013; Gillovic and McIntosh, 2020). However, despite these attempts to engage more disabled persons in leisure activities, disability studies indicate that the participation and inclusion rates of PWDS in travel and tourism activities are relatively low, mainly because many destinations have shown not to be well-suited to provide high-quality tourism services and infrastructure to tourists with special access requirements (Pasca et al., 2022; Rodriguez-Sanchez et al., 2014).

Certainly, these accessibility-related barriers that have partially disrupted the development of accessible tourism for PWDS have progressively attracted the attention of more tourism academics, researchers, and stakeholders worldwide. As a consequence of this increasing interest, a large number of studies from demand and supply approaches have been conducted to better understand and address the needs and preferences as well as the key barriers and challenges regularly faced by PWDS in the travel and tourism-related activities (Aguilar-Carrasco et al., 2023; Darcy et al., 2020; Wall-Reinius et al., 2023). Thus, valuable findings from previous studies have promoted improvements in critical elements such as information, promotion of accessible tourism destinations, transportation, infrastructure, training for tourism-related human resources, accommodation, accessible tourist attractions, accessible services and products, and marketing strategies (Kamyabi and Alipour, 2022; Lee et al., 2012; McKercher and Darcy, 2018; Prasongthan, 2018), mainly in developed countries.

By analyzing those tourism accessibility-related studies, it can be seen that, to some extent, most of these disability studies have adopted the application of some of the theoretical foundations and dimensions of different models of disability, mainly from the medical and social models (Rubio-Escuderos et al., 2021; Tomej and Duedahl, 2023; Zaluska et al., 2022). Despite these two models of disability are conceptually antagonistic due to their opposite approaches and assumptions (Buhalis and Darcy, 2011; Gillovic and McIntosh, 2020; Nicolaisen et al., 2012); over the last five decades, the medical and social models of disability have been influential in the field of disability studies, becoming the basis for

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various proposed disability models which assume a more highly complex interplay between personal and environmental factors (Adam et al., 2017; Eusébio et al., 2023; Zajadacz, 2015). Undoubtedly, the independent or collective application of both model dimensions moderately filled critical gaps in knowledge regarding underlying factors limiting and promoting the participation and inclusion of PWDS in tourism markets, such as socio-demographic features (e.g., age, income, and education), tourist's behaviour, travel motivation, destination quality, tourist satisfaction, travel intention, and tourist loyalty (Moura et al., 2022). However, to the best of the authors' knowledge, comprehensive knowledge of the barriers hindering PWDS from gaining memorable tourism experiences is still required, especially from the perspective of disabled persons travelling/desiring to travel towards natural settings (Godtman Kling and Ioannides, 2019; Załuska et al., 2022), particularly located in economically developing nations. The relevance of studying these countries lies in most nations embrace invaluable natural and cultural resources, but however due mainly to economic instability, political and policies constraints, and low market access (Paredes et al., 2021; Pulido-Fernández et al., 2014), the components of accessibility and mobility-related services/infrastructures are mostly deficient or inexistent (Rotem-Mindali and Shemesh, 2013; Tite-Cunlata et al., 2021). In addition, in these geographically disadvantaged countries, the theoretical and empirical accessible tourism research has been poorly developed, hindering the comparability and extrapolation of data obtained in developed countries through the application of models and associated dimensions/variables. Accordingly, outcomes and experiences from previous accessibility studies may not be suitable to consistently explain the limited participation and inclusion of PWDS in leisure tourism activities in other geographical regions, particularly in Latin American nations that have formally signed and ratified the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), including Ecuador. Therefore, given that more empirically-based studies are still required to examine the actual accessible development process of disabled people segments living in a specific region (Adam et al., 2017), the present study addresses the deficiency of empirical data by applying elemental disability models (i.e., medical and social models) and associated variables to define the reality of PWDS and foster their permanent inclusion and participation in travel and tourism activities in Ecuador. From this perspective, general research questions guiding this study have been raised:

(1) Which elemental disability model can be adjusted to the reality of PWDS living in the central region of Ecuador?

(2) Do people with diverse disabilities have the intention to travel towards natural and cultural destinations, and what critical factors inhibit such travel intention and participation?

Additionally, the present research is conducted from a PWDs' perspective, allowing us to fill the critical gaps in knowledge regarding other potential factors affecting the travel intention of PWDS and related demand for accessible tourism consumption (Nicolaisen et al., 2012), particularly in natural and cultural destinations where research is scarce, specifically in the Tungurahua Province-Ecuador where accessible and inclusive issues, in most cases, may have been poorly studied or overlooked by authorities, academics, practitioners, and other stakeholders (Paredes et al., 2021).

Consequently, the aims of the present research are: (1) to determine the critical factors influencing the travel intention of persons with varying disabilities living across the Tungurahua Province, Ecuador; (2) to develop a multidimensional empirically-based model to foster a permanent inclusion and participation of PWDS in travel and tourism activities in central Ecuador. Finally, findings from the current research may provide essential information to conceptualise an empirically-based framework to improve current regional travel and tourism services and facilities, ultimately enhancing the competitiveness levels of Tungurahua Province-Ecuador and other regional and international destinations with similar natural and cultural attractions.

LITERATURE REVIEW

THEORETICAL FRAMEWORK

This section comprises the concept of persons with disabilities, followed by a description of the medical and social models of disability and associated barriers and exclusionary practices discussed in existing literature on travel and tourism activities. The latter information helped develop a conceptual framework that works as the foundation for the present research.

Persons with disabilities (PWDS)

The concept of persons with disabilities has continuously evolved and varied significantly depending on purposes and national legislation between countries (UN, 2018). However, the most commonly accepted concept worldwide is defined in Article 1 of the United Nations Convention on the Rights of Persons with Disabilities (CRPD). This article states that persons with disabilities have long-term physical, mental, intellectual, or sensory impairments (i.e., vision or hearing) and interact with various barriers (e.g., attitudinal and environmental drivers). These barriers may hinder their full and effective participation in society on an equal basis with others (World Health Organization and World Bank [WHO and WB], 2011).

In general, the CRPD works explicitly as a human rights instrument with a social development approach, providing legally binding standards and concepts linked to a wide range of civil, social, political, economic, and cultural rights and fundamental freedoms applicable to persons with disabilities. Additionally, the Convention identifies areas to be improved and adapted for PWDS to effectively exert and protect their rights (United Nations-Habitat [UN-Habitat], 2014).

Although the rights of PWDS have been supported and ratified by a large number of countries across the world (UN-Habitat, 2014), inequalities experienced by persons with permanent and temporary disabilities are still persistent, rendering them more susceptible to experiencing multiple-dimensional disadvantages that compound their poverty, deprivation, and exclusion conditions. These negative scenarios may reduce their chances of fulfilling most 2030 Sustainable Development Goals (SDGs) and other internationally agreed development goals (UN, 2019; United Nations World Tourism Organization [UNWTO], 2016). On the other hand, the conceptualisation of PWDS assumes an exclusivity for ~16% of the global adult

population aged 18 and older, mostly living in urban areas of developing countries and having long-term disabilities derived mainly from health conditions (e.g., genetic disorders) (UN, 2018; WHO and WB, 2011). However, this generality excludes those individuals experiencing short- and mid-term disabilities and movement limitations. The latter group acquires their temporary incapacity or physical restriction at some point in their lives, especially in prevalence with ageing, ill-health, pregnancy, or as a consequence of accidents (i.e., a broken leg). Further, parents with children with disabilities, parents with young children, and people walking with a pram are also included in this group (UN-Habitat, 2014).

The medical model of disability in travel and tourism activities

Early 50's, Talcott Parsons first released the medical model of disability (Parsons, 1951), which viewed the disability as a personal tragedy or a medical problem that inevitably requires permanent help and care from family or caregivers; consequently, it needed to be fixed or cured to fit into society (Carlson, 2010; Thomas and Woods, 2003). Accordingly, this model placed the responsibility for disability on the individual and aimed to provide medical interventions and treatments as a means of minimising their impairments and limitations (Shen et al., 2023). Thus, these medical improvements had the potential to enhance PWDs' health and mobility, increasing their probability of inclusion and participation in many aspects of life (Haeghele and Hodge, 2016), including travel and tourism activities. However, this model failed because it focused mainly on the type or magnitude of disability rather than addressing other society-related factors that contribute significantly more to the marginalization and exclusion of PWDS (Darcy and Buhalis, 2011). Accordingly, subsequent disability studies provide alternative perspectives on understanding disability as a social construct, such as the social model of disability.

The social model of disability in travel and tourism activities

A social perspective of disability was first developed in the 1960s and 1970s by disability rights activists; however, Mike Oliver introduced the concept of the social model of disability in the early 1980s (Lawson and Beckett, 2021), since then, it has been considered as a theoretical framework that emerged as a response to the dominant medical model of disability (Kamyabi and Alipour, 2022). Importantly, the social model of disability has offered a paradigm shift in understanding disability by recognizing the influence of environmental and social drivers in creating barriers and exclusionary practices that constrain the participation and full inclusion of PWDS in various aspects of their life, including education, employment, health care, transportation, social interactions, leisure, travel and tourism. These barriers are associated with attitudes, communication, policies, organization, and physical environments. Thus, for instance, physical barriers (i.e., inaccessible buildings and housing/infrastructure, transportation systems) or attitudinal barriers (i.e., discrimination and stigma) can prevent PWDS from experiencing enhanced functioning, health and well-being (Darcy and Buhalis, 2011). Across the travel and tourism sector as well as other social life activities, this model highlights the need for severe societal changes to remove these barriers (Shen et al., 2023). Thus, recent research in the travel and tourism field that has applied some dimensions of the social model of disability has helped improve our understanding of disability by identifying critical elements that hinder the provision of equal opportunities, participation, inclusion and rights for disabled individuals (Zajadacz, 2015, Kamyabi and Alipour, 2022). Some of these barriers and exclusionary practices discussed in existing literature are: socio-economic and demographic variables, accessibility and mobility, accessibility and transportation, accessibility and information, tourism products and services, discrimination and travel motivation and intentions. These barriers will be explained down below.

1. Socio-economic and demographic variables

Ageing reduces the possibility of participation of PWDS in outdoor activities, including trips for work and leisure (Corran et al., 2018). For instance, older tourists are more likely to experience mobility limitations, more comfort and safety requirements, limited income, and lack of social support compared to other population segments, inevitably affecting their decision-making and planning process (Briesner, 2022). As a result of age-related disadvantages, PWDS' travel behaviour changes drastically; thus, older adults with disabilities are more likely to participate in domestic travel and shorter trips rather than travel internationally or engage in adventure tourism activities (Noh and Joh, 2012).

Gender has been recognised as one of the primary predictors of travel difficulties, mainly in advanced-age women rather than men, indicating that mobility opportunities and limitations are unequally experienced in society, resulting in a dramatic impact on medical, family, and social activities of PWDS (Pourhashem et al., 2019). Generally, gender is associated with other parameters limiting people's mobility, such as ageing, deficient health status, low socio-economic status, lack of access to transport resources, and lack of motivation (Özcan et al., 2021). However, women are likely to be more concerned about the significant differences in accessibility, safety and security services provided (Che Had et al., 2023).

Limited income and increasing prices of products and services can significantly affect travel intention, consequently influencing tourism demand (Fangbin et al., 2022). In addition to these factors, lack of access to trustworthy information, lack of funds, and previous unpleasant experiences with travel and tourism services and staff may considerably decrease the engagement and participation of diverse PWDS in travel and tourism activities (Bergier et al., 2010; Rodriguez-Sanchez et al., 2014). In addition, McGuckin and Fucci (2018) demonstrated that the income level of PWDS strongly predicts more/less travel, higher/lower daily travel frequencies, and engagement level in recreational activities.

2. Accessibility and Mobility

Few studies have revealed a widespread lack of environmental accessibility and mobility for persons with permanent and temporary disabilities, mainly in public buildings and spaces. These physical barriers condition their autonomy, quality of life, participation, and inclusion in diverse social activities (UN-Habitat, 2014), including entertainment and leisure activities (Vogt et al., 2022). In tourism, these constraints negatively affect PWDS' expectations and intention to travel

towards specific destinations (Sarmah et al., 2022). In addition, given that PWDs' age, type of disability, and health issues can also affect their displacement, some mobility-challenged travellers require another person (relative or caregiver) to assist them whilst travelling (Özcan et al., 2021). This implies that any persistent accessibility and mobility issue in destinations may have the potential to negatively impact on PWDs and companions' travel decision-making and opportunities. Among disabled travellers, visually and physically challenged persons have proved to travel autonomously when suitable environments are provided (McKercher and Darcy, 2018).

3. Accessibility and Transportation

Access to public and private transportation options is vital in motivating or constraining PWDs from participating in travel and tourism activities (Özcan et al., 2021). Furthermore, other associated factors, such as the availability of suitable travel modes, schedules, and distances between tourist origin and destinations, may also constrain PWDs' decision-making and feasibility to travel to specific destinations (Márquez et al., 2019; Shen et al., 2023), consequently reducing tourism demand. Although some transportation problems for PWDs have been identified, there is a lack of empirical data to determine their interplay with other variables, such as socio-demographic features, income, level of functional impairment, automobile ownership, mode of travel (Institute of Medicine [IOM], 2007), particularly in the tourism sector. Furthermore, prior research ascertains that transportation, accommodation, services and facilities are among the most critical factors at destinations to meet the specific needs of each disabled person (Özcan et al., 2021).

4. Accessibility and Information

Although the access and use of digital technologies help break down some barriers, the use of information and communications technologies (ICTs) among PWDs is still considerably lower than among persons without a disability (WHO and WB, 2011). Furthermore, prior research indicates that PWDs regularly struggle with communication and information quality barriers (Lee et al., 2021). Consequently, accessible environments, accessibility-related information and accessible digital information are the most fundamental needs required by PWDs (Buhalis and Michopoulou, 2011; Reindrawati et al., 2022). Thus, in the tourism context, the inexistence or lack of any or all interconnected needs may impede tourists with limited mobility from accessing and sharing information on essential products and services via telephones, the internet, and television (Godtman Kling and Ioannides, 2019; Pagán, 2015). This adverse scenario reduces the possibilities for PWDs to make further decisions, consequently decreasing their travel intentions (Liu et al., 2023).

5. Tourism products and services

Prior studies indicate that the unsuitability of companies and destinations to provide high-quality tourism products and services may constrain PWDs' participation in travel and tourism activities (Bergier et al., 2010; Rodriguez-Sanchez et al., 2014; Załuska et al., 2022). Thereby, destinations and mainstream tourism providers should tend to supply innovative products and services, proving that providers' skills can be fully adapted to the specific demands of each traveller, including preferences, abilities, needs/requirements, and type of disability. It is worth mentioning that the creation or production of any travel service is inseparably associated with its consumption, mainly when businesses and staff have provided an outstanding travel and tourism experience (de Sousa et al., 2023). Therefore, the best performance of any travel and tourism service provider, along with a successful promotion of these tailor-made services, may become fundamental factors in influencing directly tourists' engagement, participation, motivation, satisfaction, and loyalty, particularly people with any disability (Buhalis and Michopoulou, 2011; Cole et al., 2019).

6. Discrimination

This attitudinal barrier has been categorized as part of external environmental barriers and results from the wrong ideas and flawed thinking about PWDs. This factor may be a significant social factor preventing them from participating and enjoying naturally any interaction in society. Thus, stigma, prejudice, and discrimination are still present at the institutional and interpersonal levels due mainly to regulation barriers (i.e., inadequate laws and customs) that consistently marginalise PWDs (Nyanjom et al., 2018). This reality reduces the opportunities for access to services, labour market, education, leisure and tourism market, as well as making friends, consequently impeding them from being active members of society (UN, 2018). Furthermore, discrimination has the potential to negatively affect persons' physical and mental health in the long term and compromise their multiple social relationships (Wofford et al., 2019). Hence, only a deep self-reflection on discriminatory practices that limit PWDs' ability to fully engage in travel experiences, mainly by travel and tourism service providers, may help protect the rights of individuals with disabilities and ensure their equal participation in travel experiences, resulting in a significant increase in tourism demand by this population segment that will positively respond to the creation of inclusive environments that deliver memorable experiences (Lim, 2020), especially in natural environments rather than in urban settings (Groulx et al., 2022).

Travel intentions and motivations

Push and pull factors are approaches widely applied in studies of tourist behaviour (Seyanont, 2017). Thus, push factors are strongly associated with socio-psychological or intrinsic motivations, whereas pull factors are directly related to destination attributes or extrinsic motivations. In addition, these intrinsic and extrinsic motivations can individually or collectively predict behavioural responses, including travel intention (Cerasoli et al., 2014). For instance, having full access to hospitality, travel and tourism products and services along with trained and skilled employees and staff can foster PWDs to experience satisfaction and feel more intrinsically motivated to show further travel intention towards a tourist destination

and associated participation in leisure activities (Sarmah et al., 2022). Notably, in nature-based travel settings, it is well-known that PWDS have similar motivations to non-disabled persons, namely escaping from everyday life, enjoying the natural beauty, and spending time with family/friends. However, for many PWDS, direct contact with natural sceneries represents a further travel motivation due to the health and well-being benefits of nature experiences (Chikuta et al., 2017).

The intention to travel may be considered as the perceived likelihood of any person to desire to travel or visit a destination within a specific period (Prasongthan, 2018). Furthermore, this willingness to visit a tourism destination results from a choice and decision process, inducing any person to take particular actions and convert motivation into goal-oriented behaviour. Thus, such intention may significantly explain the relationships between motivation and future travel behaviour (Jang et al., 2009). In tourism markets, empirical research on travel intention for PWDS and older people is still limited. In some cases, prior studies revealed contradictory findings regarding motivation factors significantly influencing the behaviour intention of PWDS (Prasongthan, 2018). For instance, motivations-related dimensions, such as travel constraints and attitudes, may directly affect the travel intention of older tourists and physically disabled persons (Seyanont, 2017). In contrast, other studies show that some sub-dimensions of travel constraints may not significantly affect the travel intention of PWDS (Cole et al., 2019; Lee et al., 2012). Therefore, based upon prior studies, it can be assumed that depending on the dimensions and associated sub-dimensions of motivations assessed within each research, motivation may or not present significant effects on the travel intentions of PWDS. Thereby, more studies regarding factors and associated dimensions that significantly influence the travel intention of PWDS are required to fill this critical knowledge gap, particularly in nature-based settings where limited research has been conducted (UNWTO, 2021).

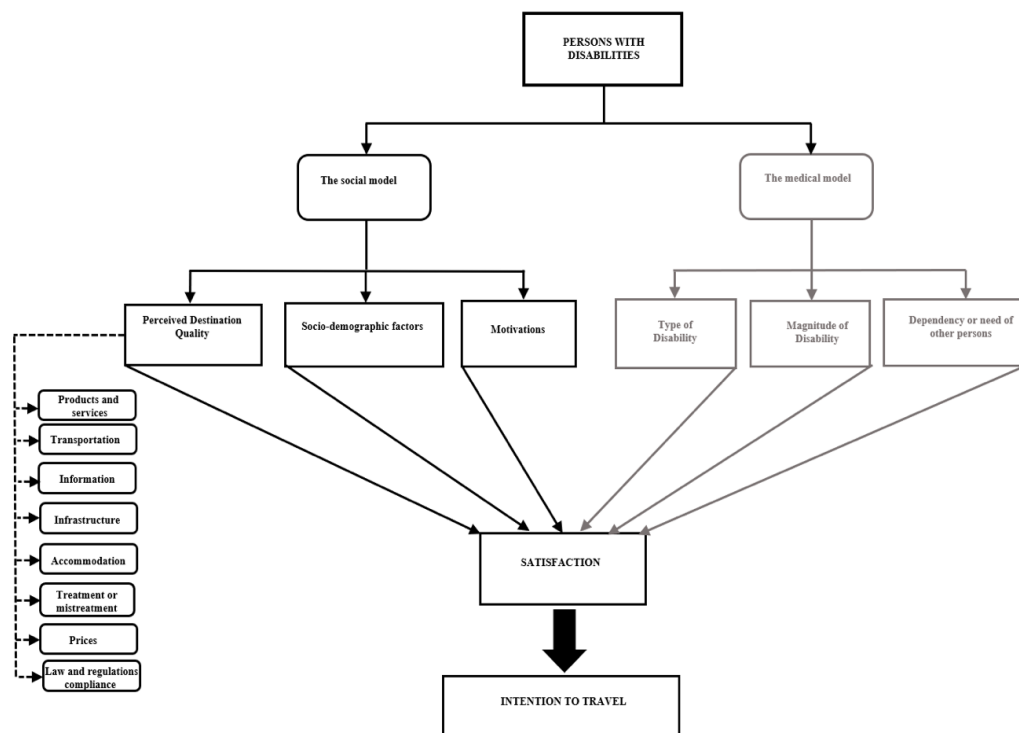


Figure 1. A generalised conceptual framework based upon the medical and social models of disability to explain the intention to travel of persons with disabilities (Source: own elaboration)

Notably, given the importance and presence of the components of the medical and social models of disability in accessible tourism research, this study assumes that a combined conceptual framework between the medical and social models of disability is suitable for explaining the PWDS’ intention to travel towards nature and cultural destinations, mainly located in Central Ecuador. In general terms, research literature points out that multiple dimensions of the medical (e.g., type of disability, magnitude of disability, dependency or need of other persons) and the social model of disability (e.g., destination quality, motivations) functioning as independent variables may have the potential to directly influence PWDS’ travel intention and subsequent tourist behaviour (dependent variables). In addition, independent variables may also indirectly alter those dependent variables via tourist satisfaction, which may function as a mediating variable in most cases (Kamyabi and Alipour, 2022; Liu et al., 2023). Hence, based upon these concepts and assumptions derived from prior research studies, a conceptual framework has been developed as the foundation for the present research (Figure 1). This initial model will be compared with a model derived from empirical data obtained in this study.

MATERIALS AND METHODS

Study Area

The current study focused on the Tungurahua Province, located within the central Andean region of Ecuador, in north-western South America (1°14'56.7" S 78°37'0.3" W). This particular Andean region possesses an extraordinary combination of natural and cultural resources distributed across several national parks, nine cities, and top-rated national

tourist attractions. Here, religious, cultural, culinary, agrotourism, and adventure tourism activities generate varied job and business opportunities, especially on national holidays (Paredes et al., 2021).

Survey

An on-site survey was conducted between early September 2019 and mid-March 2020 to determine the key factors influencing the travel intention of PWDS across the Tungurahua Province. A total of 473 individuals with a wide range of disabilities participated in the survey by completing a semi-structured questionnaire designed electronically through the Google survey platform. This instrument was used exclusively for native Spanish speakers residing in the Province of Tungurahua at the moment of the study. Prior to beginning the research, all respondents who belonged to organisations of PWDS settled in the province were requested to provide their consent to participate in this research. During the survey, researchers directly managed the data collection via tablet computers, as indicated by a prior face-to-face survey conducted in the Tungurahua Province (Paredes et al., 2021).

Survey instrument

This instrument was adapted from pre-existing items and associated dimensions used in relevant studies on PWDS in developed and developing countries (Adam et al., 2017; Buhalis and Darcy, 2011; Domínguez et al., 2013; Reho et al., 2021; Zajadacz, 2015) and upon other items reflecting local cultural conditions (Guamán-Guevara et al., 2019; Paredes et al., 2021). This questionnaire included multiple elements of the medical and social models of disability placed throughout the three sections of the instrument. For instance, the first section collected socio-demographic information: age, gender, type of disability, level of disability, residence city, education level, monthly income, state bonus holder. The second section was related to travel behaviour: previous visits, frequency of trips towards destinations belonging to Tungurahua Province, type of tourism, travel mode, stay duration, the person making decisions on travel, the need of another person to displacement, past discrimination experiences, and travel intentions. The third section was devoted to collecting crucial information on factors driving PWDS' travel intention towards destinations within the Tungurahua Province.

Table 1. Sample of the survey instrument and description of variables (Source: own elaboration)

Variables	Definitions
Socio-demographic features	
Age	<18/19-24/25-35/36-64/>64
Gender	Men/ Women
Type of disability	Physical/Visual/Hearing/Intellectual
Level of disability	1-29/30-49/50-74/>74%
City of residence	Ambato/Baños/Cevallos/Mocha/Patate/Píllaro/Pelileo/Quero/Tisaleo
Education level	Elementary/High School/Undergraduate/Postgraduate
Monthly Income	0-499/500-999/>1000 USD
State bonus holder	Yes/No
Travel behaviour	
Previous visits towards destinations within the Tungurahua Province	Yes/No
Frequency of tourism trips towards destinations within the Tungurahua Province	weekly/monthly/yearly
Type of tourism	Family/Nature-based/Cultural/Gastronomic tourism
Travel mode	Own car/public bus/taxi
Stay duration	Few hours/one night/two days/three or more
The person making decisions on travel	Myself/other persons
The need of another person to displacement	Yes/No
Past discrimination experiences	Yes/No
Travel motivations	Health/Nature beauty/Escape from routine/Rest and relaxation/Cultural events
Travel intentions/desire to travel	Yes/No
Destination quality	
Accessible information	Six questions to answer for each dimension. Responses were designed based upon a 5-point Likert-type scale, ranging from 1 (extremely dissatisfied) to 5 (extremely satisfied).
Infrastructure	
Tourism products and services	
Accommodation	
Treatment towards PWDS	
Trained staff	

Thus, respondents had to answer six questions in each construct related to perceived destination quality, such as information (tourism information on accessibility and information quality) and communication, infrastructure, tourism products and services, transportation, accommodation, treatment towards PWDS, and availability of trained staff. Responses were designed based upon a 5-point Likert-type scale, ranging from 1 (extremely dissatisfied) to 5 (extremely satisfied) (Table 1).

Statistical Analysis

Data collected were quantitatively analysed using the Statistical Package for the Social Sciences (SPSS) software version 25. In addition, Cronbach's alpha test was conducted to determine the reliability of the survey questionnaire items. This reliability test exhibited an overall score of 0.920, indicating high stability or consistency of the items in the

questionnaire (Field, 2005; Hair et al., 2014). Subsequently, factors (independent variables) were used for further analysis using a multiple regression method to determine key factors influencing the travel intention of PWDS (dependent variable). A similar statistical analysis was performed in prior research (Álvarez-García et al., 2019) (Figure 2).

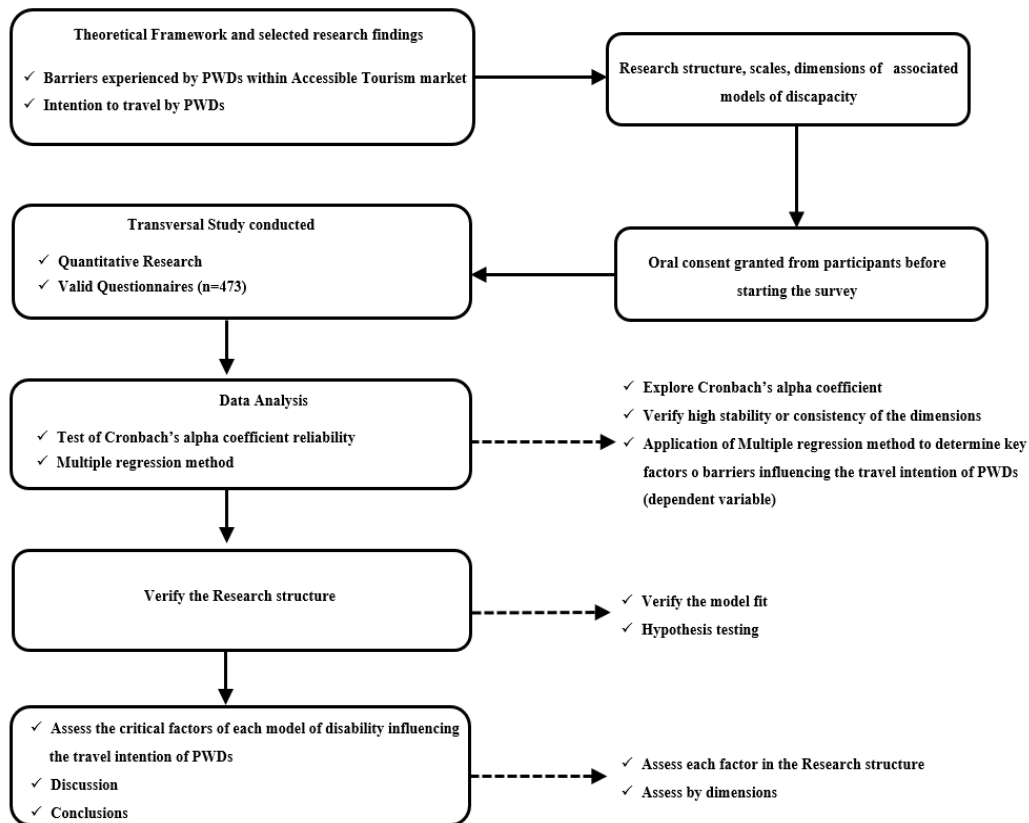


Figure 2. Flowchart of research methodology (Source: own elaboration)

Case study of Tungurahua Province (Ecuador)

Ecuador is a nation that signed on 30 March 2007 and ratified on 3 April 2008 the United Nations Convention on the Rights of Persons with Disabilities (UN, 2008). Thenceforth, governments have taken concrete actions to benefit this vulnerable group, including the addition of 21 articles to the Ecuadorian Constitution that enabled over 10.000 people with disabilities to enter the workforce. In addition, other actions were related to conducting on-site home visits throughout 24 provinces to register and geo-reference nearly 300.000 individuals with diverse disabilities.

Currently, in Ecuador, 470.820 persons with disabilities are registered; however, only 68 901 individuals are part of the active labour market (14.6%), and 206.451 individuals receive one of the state disabilities living allowances (i.e., bonus and pension) (43%). At the regional level, 13 296 individuals are registered as persons with disabilities in the Tungurahua Province. From this amount, males account for 53% of the overall regional population, and females account for the remaining 47%. Furthermore, 1590 individuals are part of the active labour market (11.9%), and 6745 individuals receive one of the state disabilities living allowances (50%) (Consejo Nacional para la Igualdad de Discapacidades [CONADIS], 2021). Despite these affirmative actions and legal framework that helped Ecuador to become a world leader in inclusion practices of people with disabilities in economic and social activities; little progress has been made to provide PWDS with other social alternatives of integration and accessibility such as leisure, travel, and tourism activities that may also enhance their health and quality of life (Guamán-Guevara et al., 2019).

RESULTS

Socio-demographic variables

Most respondents were males (68.6%), followed by females (31.4%). Among all categories of age groups, the majority of participants aged between 25 and 35 years old (45.8%), followed by age groups of 19-24 years (25.3%), 36-64 years (20.5%), under 18 years (5.9%), and over 65 years (2.5%). Furthermore, 42.4 % of the respondents achieved a high school level, followed by 34.6% and 7.8% holding undergraduate and postgraduate degrees, respectively. Regarding the city of residence, most respondents reside in Ambato (64.3%), followed by Pelileo (9.3%) and Baños (7.8%). Most PWDS (53%) possess at least one governmental bonus award as the primary monthly income source. In addition, 71% of the respondents reported having a monthly income below 500 USD.

Disabilities

People with physical disabilities represented 64.6% of all respondents, followed by people with visual (21.1%), intellectual (7.6%), and hearing impairments (6.8%). In addition, gender differences in all types of disability among

respondents were found. For instance, males showed twice the prevalence of any disability than females. Furthermore, most participants showed a disability level between 30-49%, followed by people with a disability level between 50-74%.

Tourist behaviour

All respondents have previously travelled across the Tungurahua Province for tourism activities and report multiple accessibility issues at tourist destinations, as discussed in the next section. Furthermore, 84.8% of PWDS travel at least once a week towards any tourist attraction. From this group, most persons stay for a few hours at tourism destinations (78.3%), and the remaining persons stay overnight or longer (21.7%).

Only over half of the respondents (52.3%) indicated that other persons make all travel decisions for them, and the remaining percentage (47.7%) makes their own travel decision. Furthermore, almost 50% of respondents indicated that the bus is the primary means of transportation during tourism activities, followed by their own car (42.6%). The type of tourism mostly done by PWDS is related to family tourism (42.5%), followed by nature-based tourism in rural areas of the province (31.6%), and cultural tourism (25.9%). Most participants (85.4%) indicated a permanent interest in travelling within the Tungurahua Province; however, 69.4% of the respondents needed a companion when travelling. Additionally, PWDS indicated that their main travel motives are linked to escape from routine, seek for nature beauty, and health.

Impact of key factors on intention to travel of PWDS

Outcomes from the analysis indicate that the regression model was statistically significant ($F= 9.672$; $p<0.001$). Multiple determination coefficient (R^2) depicts a group of predictor variables explaining 22.8% of the variance of the independent variable assessed. Regression coefficients values such as Beta (β) and p helped identify those significant independent variables displaying the greatest impact on the travel intention of PWDS within the Tungurahua Province (dependent variable). Results revealed that age ($\beta= -0.213$; $p =0.001$), education level ($\beta= 0.172$; $p =0.001$), monthly income ($\beta= 0.201$; $p =0.001$), and the need of another person when travelling ($\beta= 0.191$; $p =0.001$) were the most significant variables influencing the travel intention for PWDS. Concerning the evaluation of satisfaction on perceived destination quality, results indicate that transportation ($\beta= 0.397$; $p =0.001$), products and services quality ($\beta= 0.229$; $p =0.001$), and destination infrastructure ($\beta= 0.171$; $p =0.001$) were the most significant predictors on travel intention of PWDS (Figure 3; Table 2).

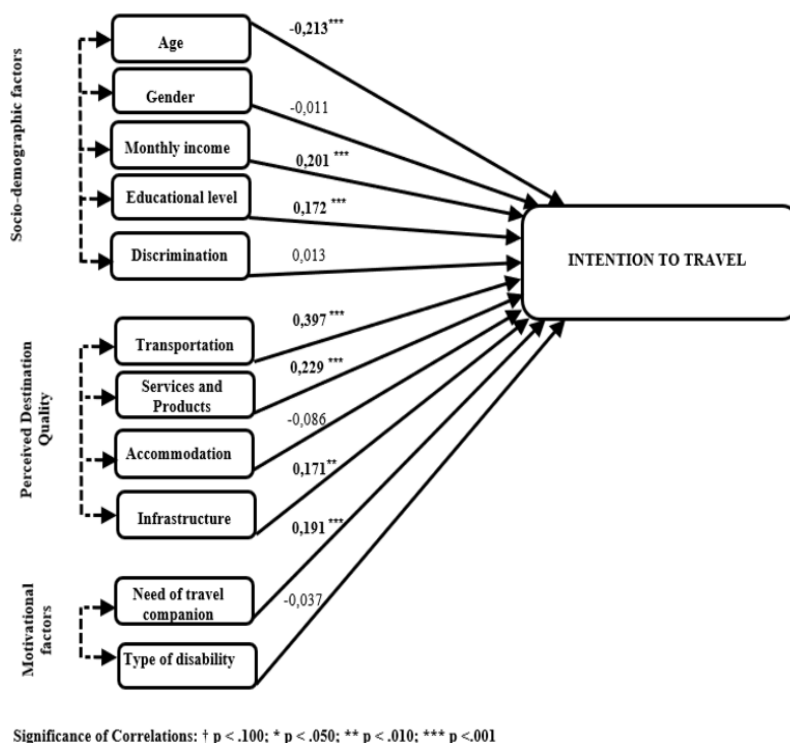


Figure 3. Findings of the research structure. Regression analysis outcomes (Source: own elaboration)

Table 2. Regression analysis of intention to travel of PWDS (Source: own elaboration)

Model	Unstandardised coefficients		Standardised coefficients	t	Sig.	N
	B	Std. Error	β			
Constant	1.406	0.149		9.438	0.000	
Socio-demographic variables						
Age	-0.085	0.018	-0.213	-4.702	0.000	473
Gender	-0.008	0.032	-0.011	-0.267	0.790	473
Monthly income	0.165	0.034	0.201	4.828	0.000	473
Education level	0.060	0.016	0.172	3.812	0.000	473
Destination quality variables						
Transportation	0.141	0.030	0.397	4.748	0.000	473
Services and products quality	0.089	0.022	0.229	4.098	0.000	473
Accommodation	-0.031	0.031	-0.086	-0.997	0.319	473
Infrastructure	0.060	0.027	0.171	2.230	0.026	473
Discrimination	0.010	0.035	0.013	0.284	0.776	473
Disability-associated restrictions						
Need of travel companion	0.146	0.037	0.191	3.983	0.000	473
Type of disability	-0.015	0.017	-0.037	-0.869	0.385	473

ANOVA: $R= 0.477$; $R^2=0.228$; Adjusted $R^2 =0.204$; Std. Error= 0.315; $F=9.672$; Sig.= 0.001

Conceptual framework from empirical evidence

Based on the outcomes of this empirical study, a new conceptual framework is proposed to determine the primary factors

driving the PWDS' intention to travel towards nature and cultural destinations, particularly PWDS distributed across the vast region of the Tungurahua Province in central Ecuador (Figure 4). Remarkably, this model incorporates only those dimensions/variables statistically significant, which mostly belong to a social model rather than a medical model of disability.

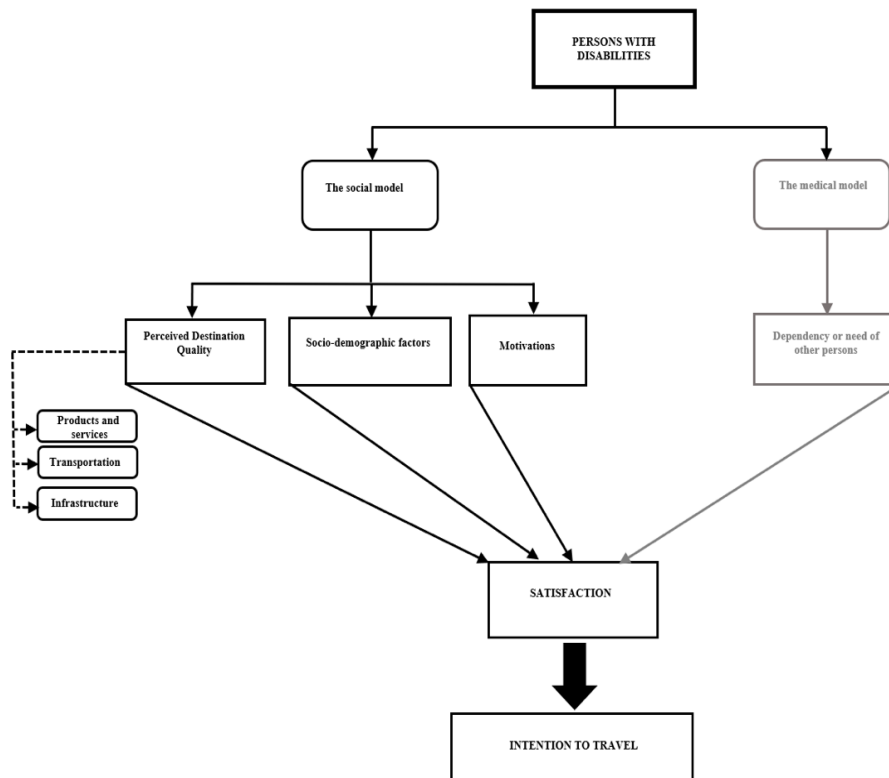


Figure 4. Empirically-based framework explaining the intention to travel of persons with disabilities towards natural and cultural destinations in Central Ecuador, using the social and medical models of disability (Source: own elaboration)

DISCUSSION

Research findings from this empirical study indicate that seven critical elements of the social and medical models of disability function as determinants of the travel intention of people with disabilities towards natural and cultural destinations in Central Ecuador. However, there is a predominance of critical elements of the social model (6 factors) over the medical model (1 factor) of disability. For the social model, sociodemographic factors (e.g., age, monthly income, and education level) and destination quality variables (e.g., transportation, services and products quality, and infrastructure) were statistically significant. Regarding the medical model, only the need of a travel companion was significant. These findings are aligned with previous studies showing that these barriers regularly impede PWDS from actively participating in travel and tourism activities (Deville and Kastenholz, 2018; Devile et al., 2023; Kusufa et al., 2022). These components are discussed below.

For the case of the PWDS from the Tungurahua Province, findings indicate that sociodemographic factors, such as income (>500 USD), age, and education level can significantly encourage or constrain the travel intention and subsequent engagement and participation of PWDS in regional travel and tourism activities. Thus, specifically for the age, the observed negative coefficient sign ($\beta = -0.213$; $p = 0.001$) is directly linked to a decreased probability of older PWDS to travel (e.g., Briesner, 2022; Corran et al., 2018). For the income ($\beta = 0.201$; $p = 0.001$) and education level ($\beta = 0.172$; $p = 0.001$), the coefficients indicate a direct positive relationship between these factors and the intention to travel of PWDS.

These findings are partially aligned with some studies found in accessible tourism literature, where older people with greater socio-economic status and higher educational levels are more likely to increase their mobility (Che Had et al., 2023; Noh and Joh, 2012). Notably, literature suggests that income is a good predictor of intention and participation of PWDS in travel and tourism activities (Fangbin et al., 2022; McGuckin and Fucci, 2018). However, this factor interacts typically with other factors, including the increased prices for accessible products and services, untrustworthy information, untrained staff, and previous unpleasant tourism experiences (i.e., discrimination) can negatively impact on PWDS' travel intention and tourist behaviour worldwide (Bergier et al., 2010; Rodriguez-Sanchez et al., 2014). The latter factor was also examined in this study, showing no significant influence on PWDS' travel intention ($\beta = 0.013$; $p = 0.776$).

Regarding destination quality variables, findings highlight the significant contribution of transportation to predicting the intention to travel of PWDS. Thus, these findings are aligned with the available literature on the critical role of transportation services in tourism development (Khadaroo and Seetanah, 2007), particularly in one-day cultural tours (Terziyska, 2021). Hence, based upon findings from this research, it is worth mentioning that regardless of the supplier (i.e., private or public), high-quality transportation services for PWDS may help significantly reduce any disability and social participation barrier (Márquez et al., 2019; Özcan et al., 2021; Ralph et al., 2022; Shen et al., 2023). Accordingly, PWDS experiencing better sensations via suitable means of transportation during travel and tourism activities may decide

on more extended stays or more frequent travels towards specific destinations all year round or just on holidays. Furthermore, considering that accessible transportation (e.g., buses, taxis, tourism vehicles) involves the interplay of other services (e.g., terminal facilities, well-trained drivers and staff), authorities and other tourism stakeholders should work on awareness-raising programmes and action plans to improve accessibility, connectivity, safety, and security in all accessible transportation services for PWDS, especially in the Tungurahua Province, where current lacking transportation services for PWDS still represents a significant barrier that hinders their freely and comfortable displacements among the nine cities.

Regarding destination infrastructure set for PWDS, analysis of this dimension indicates a significant positive influence on PWDS' travel intention ($\beta = 0.171$; $p = 0.026$). These results coincide with the importance given to improve destination infrastructure, mainly focused on implementing systematically accessible paths with suitable design and refinement of facilities instead of isolated accessible facilities (Buhalis et al., 2005). However, despite the improvements in destination infrastructure in the last decades, isolated accessible facilities are still observed in many destinations worldwide, including the Tungurahua Province (Paredes et al., 2021).

Concerning other factors related to perceived destination quality, such as the quality of accessible tourism services and products, findings revealed a significant positive impact of these predictors on PWDS' travel intentions ($\beta = 0.229$; $p = 0.001$). In this context, findings align with prior studies stating that when PWDS perceive the high quality of destination tourism products and services, it is more likely to increase their intention to travel towards any destination and participate in any tourism activity (de Sousa et al., 2023). On the contrary, missing and unreliable information on products and services offering may prevent PWDS and other people with special access requirements (e.g., older people) from making effective and informed travel decisions (Buhalis et al., 2005; Darcy, 2010; Lim, 2020). Definitely, improvements in all accessible elements found in the present survey may help the regional tourism sector experience more revisits, benefiting the whole tourism industry, whose growth and sustainable profitability rely upon multiple tourists' visits (Sarmah et al., 2022). Thus, as occurred in other locations, these improvements will increase the nature-based tourism activities supply, initially fostering the domestic demand (e.g., satisfied visitors near destinations) and subsequently engaging an international demand (new customers) when hospitality skills and product quality are considerably enhanced.

Development of a new conceptual framework for PWDS

Notably, findings from the current research provide vital information to conceptualise a new empirically-based framework to understand the reality experienced by PWDS and, more importantly, to address accessible and inclusive issues. In addition, this model has been built in function of this study's outcomes that reflect particular needs, preferences, challenges and priorities of PWDS, which in most cases, have been poorly studied or overlooked, impeding them from active participation in travel and tourism activities in nature and cultural destinations located across Central Ecuador. Furthermore, as shown in Figure 2, the model incorporates fewer components than the theoretical model built based upon literature (Figure 1). In this context, all dimensions/variables used for this model entirely relate to a social model rather than a medical model of disability, suggesting that PWDS are perceived themselves as individuals capable of dealing with tourist destinations barriers and highly interested in participating in travel and tourism activities, particularly across the Tungurahua Province. These perceptions about PWDS are similar to those found in a previous study conducted with European tourism operators, where the medical and social models were also applied (Nicolaisen et al., 2012).

Importantly, given the dominance of the components of the social model over the medical model of disability, the preliminary hypothesis is accepted because it suggests the possibility that a combined conceptual framework between the medical and social models may be suitable to explain PWDS' intention to travel towards nature and cultural destinations, mainly located in the Tungurahua Province-Central Ecuador. Finally, this tailor-made conceptual framework may enable all tourism-related stakeholders to advance in implementing strategies and action plans to improve the accessible regional tourism industry, particularly in the Tungurahua Province. However, despite the relevant contributions of the present research, findings are not conclusive and should not be generalised for all sub-segments of PWDS and other developing countries, particularly due to cross-sectional research-related limitations; hence, more empirical studies from other regions within Ecuador and abroad are required to confirm findings from the present research.

CONCLUSIONS

Findings indicate that PWDS are highly motivated to engage and participate in travel and tourism activities within the Tungurahua Province; however, they are still restricted by various accessibility and inclusion barriers, which directly influence their travel intentions and subsequent travel behaviour. Thus, constraining factors such as monthly income, age, education level, and the need of another person to displacement, transportation, quality of accessible products and services, information, and destination infrastructure constituted the most significant determinants of travel intention and participation in tourism activities of PWDS, consequently influencing local and regional tourism demand.

Findings and resulting tailor-made conceptual framework provide valuable information to the limited body of knowledge of accessibility, inclusion, and tourism consumer behaviour, especially in nature-based and cultural tourism settings where the study was carried out. As the present research was conducted in Ecuador just before the beginning of the COVID-19 pandemic, understanding the significant determinants influencing the travel intention of PWDS before the outbreak will help implement action plans and strategies to promote their inclusion in mainstream society activities, particularly in travel and tourism activities during the post-COVID-19 era, in which travel restrictions will decrease, consequently increasing accessible tourism demand. This increased tourism demand will ultimately contribute to economic and social growth whilst mitigating the negative impact of the current crisis caused by the COVID-19 pandemic. For many

middle-income countries, such as Ecuador, there is a latent difficulty in generating high-quality data; however, the present research succeeded in collecting valuable data and developing a combined model whose components mostly relate to the traditional social model of disability rather than a medical model of disability. These achievements pave the way to continue with further works on accessibility and inclusion of PWDS and other tourists with varying accessibility requirements.

Finally, these results also have practical implications for other international tourism sector destinations with similar attractions to the Tungurahua Province-Ecuador, which possesses an outstanding combination of natural and cultural resources. Furthermore, addressing problems associated with each determinant evaluated is critical, mainly to achieving the goals of the 2030 Agenda (i.e., SDGs.) and UNCRPD, from which Ecuador is a signatory country.

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