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Tourism constraints for Spanish tourists with disabilities: Scale development and validation

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Abstract

In Spain, more than 2.5 million people live with some form of disability (Imserso, 2014). Tourism constraints are defined as factors influencing travel participation and behaviour, and can be divided into three categories: intrapersonal, interpersonal, and structural. The aim of this exploratory study is to develop and validate a measurement scale for each of these types of tourism constraints faced by 248 Spanish tourists with disabilities. The results show that intrapersonal constraints are due to three factors: lack of knowledge, health-related problems, and physical and psychological dependency. Interpersonal constraints are divided into two factors: skill-challenge incongruities and communication. Structural constraints are classified into four factors: information and communication, cost and attendant, socio-spatial, and attitudinal. Taking into consideration the importance of this market segment both in Spain and all over the world, this study provides tourism destinations with a quantitative tool for evaluating the barriers tourists with special access needs may encounter at a destination.

Keywords: accessible tourism; tourism for all; disability; barriers

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Resum. *Barreres turístiques per a turistes espanyols amb discapacitats: desenvolupament i validació d'una escala*

A Espanya, més de 2,5 milions de persones viuen amb algun tipus de discapacitat (Imserso, 2014). Les barreres turístiques es poden definir com factors que influencien la participació i el comportament dels turistes i es divideixen en tres categories: intrapersonals, interpersonals i estructurals. L'objectiu d'aquest estudi exploratori és desenvolupar i validar una escala per mesurar els tipus de barreres que 248 turistes espanyols amb algun tipus de discapacitat han d'afrontar quan viatgen. Els resultats mostren que les barreres intrapersonals deriven en tres factors diferents: falta de coneixement, problemes de salut i dependència física i psicològica. Les barreres interpersonals es divideixen en dos factors: incongruències entre habilitat i repte, i comunicació. Les barreres estructurals es classifiquen en quatre factors: informació i comunicació, cost i cuidador, socioespacials i d'actitud. Tenint en compte la importància d'aquest segment de mercat a Espanya i a la resta del món, l'article aporta una eina quantitativa per tal que les destinacions turístiques puguin avaluar les barreres turístiques que aquests turistes amb necessitats especials d'accessibilitat poden trobar quan les visiten.

Paraules clau: turisme accessible; turisme per a tothom; discapacitat; barreres

Resumen. *Barreras turísticas para turistas españoles con discapacidad: desarrollo y validación de una escala*

En España, más de 2,5 millones de personas viven con algún tipo de discapacidad (Imserso, 2014). Las barreras turísticas se pueden definir como factores que influencian la participación y el comportamiento de los turistas y se dividen en tres categorías: intrapersonales, interpersonales y estructurales. El objetivo de este estudio exploratorio es desarrollar y validar una escala para medir los tipos de barreras que 248 turistas españoles con algún tipo de discapacidad deben afrontar cuando viajan. Los resultados muestran que de las barreras intrapersonales derivan tres factores distintos: falta de conocimiento, problemas de salud y dependencia física y psicológica. Las barreras interpersonales se dividen en dos factores: incongruencias entre habilidad y reto, y comunicación. Las barreras estructurales se clasifican en cuatro factores: información y comunicación, coste y cuidador, socio-espaciales, y de actitud. Teniendo en cuenta la importancia de este segmento de mercado en España y el resto del mundo, el artículo aporta una herramienta cuantitativa para que los destinos turísticos puedan evaluar las barreras turísticas que estos turistas con necesidades especiales de accesibilidad pueden encontrar cuando los visitan.

Palabras clave: turismo accesible; turismo para todos; discapacidad; barreras

Résumé. *Barrières touristiques pour touristes handicapés espagnols : développement et validation d'une échelle*

En Espagne, plus de 2,5 millions de personnes vivent avec un handicap (Imserso, 2014). Les contraintes touristiques peuvent être définies comme des facteurs qui ont une incidence sur la participation et le comportement des touristes et elles sont divisées en trois catégories : intrapersonnelles, interpersonnelles et structurelles. L'objectif de cette étude exploratoire est de développer et de valider une échelle pour mesurer les types de contraintes que 248 touristes espagnols handicapés doivent affronter lorsqu'ils voyagent. Les résultats montrent que les contraintes intrapersonnelles peuvent être divisées en trois facteurs : manque de connaissances, problèmes de santé, et dépendance physique et psychologique. Les facteurs interpersonnels sont divisés en deux : incohérences entre les compétences et le défi, et

communication. Les obstacles structurels sont classés en quatre facteurs : information et communication, coût et aidant, barrières socio-spatiales et comportementales. Compte tenu de l'importance de ce segment de marché en Espagne et dans le reste du monde, cet article propose aux destinations touristiques un outil quantitatif afin qu'elles puissent évaluer les contraintes touristiques que les personnes à besoins spécifiques en matière d'accessibilité peuvent trouver quand elles visitent ces sites.

Mots-clés: tourisme accessible; tourisme pour tous; handicap; barrières

Summary

1. Introduction

People with disabilities also have the same needs and desires for tourism as others (Blichfeldt and Nicolaisen, 2011). As a result, the accessible tourism market segment is growing rapidly, in fact more than other market segments. However, few studies focus on this potential market segment and disabilities are often neglected within tourism research (Bi et al., 2007; Daniels et al., 2005; Darcy et al., 2010).

Accessible tourism enables tourists with specific access needs to enjoy tourism experiences with dignity and in equal conditions. More than one billion people in the world live with some form of disability, of whom nearly 200 million experience considerable difficulties in functioning (World Health Organisation and The World Bank, 2011). According to a study by the Spanish Institute for Older Persons and Social Services (Imserso, 2014), more than 2.5 million people in Spain live with some form of disability. This study focuses on people with disabilities, a sub-segment of accessible tourism. However, the implications and results can be useful for other tourists with specific access needs, such as seniors, families with babies, or temporarily injured people, among others.

In spite of the efforts to define tourism as a basic need and the fact that this market segment is considered to be large and therefore a great business opportunity, tourism literature on tourists with disabilities is still in its infancy (Blichfeldt and Nicolaisen, 2011).

The "Tourism for All" concept has gained importance in the tourism sector. Some countries, such as the United States and Australia, have already developed complex mechanisms, including rules and standards, in order to ensure rights and access to leisure and tourism for people with disabilities. However, other countries are still in the early stages of developing a barrier-

free environment (Cameron et al., 2003). In Spain, for example, each region is responsible for introducing legislation concerning well-being, which includes accessibility. Thus, there are 17 different positions and legislations in only one country. This lack of homogeneity represents a challenging scenario for accessible tourism, especially when developing common policies.

Accessibility is already on the agenda of many governments and tourism destinations. Making products and services accessible to all segments of the population has become crucial for tourism businesses, as an increasing number of people have special access needs. In parallel, tourism destinations need to develop accessible tourism policies and strategies to optimize their efforts and resources when addressing this market segment. In order to ensure the development of successful accessible tourism products and destinations, one of the key issues that needs to be addressed is how to face constraints, which are defined as a subset of reasons for not engaging in a particular behaviour (Jackson, 1988). Travel constraints are factors that can inhibit or influence travel satisfaction, motivation, and needs. Although constraints were traditionally studied within a leisure context and became a growing research area in the 1990s (McGuire, 1984; Jackson, 1988; Hawkins et al.; 1999; Jackson et al., 1993; Crawford et al., 1991; Samdahl and Jekubovich, 1997), they have only recently begun to be addressed within tourism studies (Bi et al., 2007; Blichfeldt and Nicolaisen, 2011; Daniels et al., 2005; Lee et al., 2012).

The concept of constraints has gained increasing attention in studies on tourism and people with disabilities (Lee et al., 2012; Bi et al., 2007; Burns et al., 2009; Daniels et al., 2005; Figueiredo et al., 2012), since identifying and surmounting such constraints is essential to ensure equal tourism opportunities. However, few studies aim at developing measurement scales (Hung and Petrick, 2010) and none of these scales has yet addressed the market for people with disabilities. Therefore, the main purpose of this exploratory study is to develop and validate a scale to measure travel constraints using a sample of Spanish tourists with disabilities. Factors that may influence or inhibit the tourism experiences of people with disabilities are discussed in order to provide tourism destinations and professionals with a tool to evaluate them.

Being able to identify and analyse the constraints people with disabilities encounter when they travel can help tourism stakeholders create or adapt successful tourism products for this sub-segment. In addition, it is of interest to analyse travel constraints for people with disabilities in order to improve and dignify their experiences.

In order to facilitate the planning process, it is necessary to develop rigorous tangible and intangible elements and methodologies to evaluate the accessibility of a destination or an area. Accessibility is often evaluated using criteria related to public transport, parking space, and physical features (Talavera-Garcia et al., 2014). However, the barriers obstructing destination development are not only structural, but also intrapersonal or interpersonal.

Furthermore, the tourism development and planning of regions is complex as they are not uniform entities, and barriers involve an additional challenge

to this process. In other words, there exist variations in terms of the stages of tourism development and types and levels of barriers. Despite these difficulties, this study tries to provide tourism planners with a tool to evaluate these inhibiting factors in order to remove them and diminish this complexity. At the same time, it aims to enhance the competitiveness of tourism destinations or regions and ensure their proper development.

2. Literature review

2.1. Leisure constraints

When the literature on leisure constraints was first published in the 1960s and 1970s, such constraints were defined as 'barriers to participation' (Crawford and Godbey, 1987; Jackson, 1988). Later, they were described as inhibitors of people's ability to participate in leisure activities, to spend more time doing these activities, to use leisure services, or to achieve a desired level of satisfaction (Jackson, 1988). In other words, they are 'a subset of reasons for not engaging in a particular behaviour' (Jackson, 1988). Hence, constraints not only affect aspects of leisure behaviour like participation, but also other aspects such as choices (Crawford et al., 1991) or motivation and satisfaction (Jackson, 1991).

Furthermore, it is common to find more than one type of constraint in the literature, each of which plays a particular role in leisure constraints models. One of the earliest classifications of constraints differentiates between internal and external constraints (Jackson and Searle, 1985). Internal constraints refer to the attributes of the individual, while external constraints are the characteristics of the environment. Other dichotomies are also used, such as personal and social constraints (Boothby et al., 1981). This dichotomy was later extended to a threefold classification of interpersonal or interactive, intrapersonal or intrinsic, and structural or environmental constraints (Crawford and Godbey, 1987). The last type influences preferences, while the other two can affect both preferences and participation.

Searle and Jackson (1985) proposed that the effects of leisure constraints be seen as a sequence rather than something simultaneous. Consequently, three separate models corresponding to each of the three types of barriers were developed (Crawford and Godbey, 1987). Finally, this last conceptualization was later modified by Crawford et al. (1991). They combined the three models of Crawford and Godbey (1987) into a single model, and added concepts like constraints negotiation and the hierarchy of importance (in which intrapersonal constraints are the most important).

Since the early 1990s, research on leisure constraints has been understood as a complex phenomenon. However, constraints are no longer viewed as insurmountable obstacles and ways to negotiate constraints has become a focus of the leisure constraint research (Jackson et al., 1993; Raymore et al., 1993; Samdahl and Jekubovich, 1997). More recent studies have tried to identify domains of constraints and categorize items into these domains.

2.2. Travel constraints for tourists with disabilities

Although constraints are an important component of the leisure literature, it is a fairly new phenomenon in the tourism literature (Carneiro and Crompton, 2009; Hudson and Gilbert, 2000; Nyaupane and Andereck, 2007; Priporas et al., 2015) and has only recently been applied in studies on travellers with disabilities.

Travel constraints are not homogeneous across different groups and activities and it is unknown where leisure measurement scales are equally applicable to a specific travel context (Hung and Petrick, 2010). Some studies have focused on scale development for a specific tourism activity, such as cruising (Hung and Petrick, 2010) or a specific group of the population, such as adventure tourists (Tsaur et al., 2013). This study focuses on Spanish tourists with disabilities. Previous studies have addressed leisure constraints specific to people with disabilities in particular destinations, such as countryside leisure experiences (Burns et al., 2009) or sport tourism (Hua et al., 2013).

This heterogeneity is particularly prevalent in the disability market segment. Both the type of disability (i.e. mental, physical, or sensory) and the degree of disability (i.e. mild, moderate, or severe) are important when analysing this market segment. Previous studies (Burns et al., 2009; Figueiredo et al., 2012; Kastenholz et al., 2015) have shown that people with different types and degrees of disabilities encounter specific barriers and therefore require tailored tourism services, products, and activities. Furthermore, they may have different motivations, attitudes, and desires regarding tourism and leisure (Figueiredo et al., 2012).

Smith (1987: 377) examined travel constraints for people with disabilities and stated that 'every tourist undoubtedly experiences barriers to leisure participation, but individuals with disabilities, in particular, have been noted as disproportionately affected by leisure constraints'. Taking this into consideration, the analysis of tourism constraints among people with disabilities may be decisive in understanding their travel behaviour.

Studies on constraints for tourists with disabilities normally focus on a specific tourism sector, such as transportation (Poria et al., 2009) or accommodation (Darcy, 2010; Poria et al., 2011). For example, Poria et al. (2011) identified challenges that individuals with disabilities face in hotels and the effort they have to make to surmount them. These challenges can be related to such things as the physical environment or staff behaviour.

Although studies on disabilities and tourism generally centre on people with physical disabilities (Burnett and Baker, 2001; Daniels et al., 2005; Bi et al., 2007; Blichfeldt and Nicolaisen, 2011; Hua et al., 2013), other studies focus on sensory impairment (Poria et al., 2009; Yau et al., 2004). Daniels et al. (2005) analysed travel constraints and the negotiation strategies of people with physical disabilities, while Hua et al. (2013) identified constraints that this sub-segment must face when experiencing sport tourism. There are other studies which consider both sensory and physical disabilities. For example,

Poria et al. (2009) examined flight experiences of blind and people with physical disabilities. Figueiredo et al. (2012) considered that recognizing this diversity is crucial in tourism studies due to the fact that it can result in different motivations, interests, and needs. In general, due to the difficulty to reach this market, studies on people with special access needs are mainly qualitative. Therefore, as this study has a quantitative approach, it will be useful to adopt more quantitative or mixed methods in future studies.

Before proceeding to the scale development and validation, it is important to list the items and typologies used in similar studies. Daniels et al. (2005) identified six intrapersonal, six interpersonal, and eight structural themes in tourists with disabilities narratives through a travel pattern analysis. Intrapersonal themes are related to knowledge, physical/sensory, and emotional constraints, while interpersonal constraints are related to communication with travel companions, service providers, and strangers. Finally, structural themes are linked to transportation, facilities, the environment, and financial issues. Hua et al. (2013) divided constraints into intrapersonal, interpersonal, structural, and cultural. Intrapersonal constraints are related to knowledge and involvement, among others. Interpersonal constraints include aspects related to travel companions or interaction skills. Structural constraints are linked to transportation, money, and service providers, while cultural constraints include culture and religion issues. Freeman and Selmi (2009) classified constraints into physical, attitudinal, financial and communication barriers, with physical barriers including aspects such as public transportation, architecture and materials used in various sites, legislation, and hotel accessibility. Attitudinal barriers range from inappropriate treatment to people's lack of knowledge or prejudices. Financial barriers are based on limited income and increasing prices. Lastly, communication barriers include non-accessibility of information and lack of skills, among others. Poria et al. (2009) identified two types of constraints: physical and social. These constraints are related to considerations such as seat location, toilets, or communication with staff. Darcy (2004) drew up a list of constraints that people with disabilities must face throughout the journey and classified them according to the categories of Smith (1987) into intrapersonal, interpersonal, and structural constraints.

All these barriers are considered important for people with disabilities when travelling to a destination and tourism stakeholders need to minimize or remove them in order to improve the competitiveness of a destination. Stakeholders have to work together to better welcome tourists with disabilities at a destination. Another important constraint for tourists with disabilities is the lack of a common legislation. The legislation differs greatly across countries, despite the emphasis on developing capacity building schemes and common policies. Several studies focus on the effect of different regulations for tourists with disabilities. Ray and Ryder (2003) highlighted the importance of the Americans with Disabilities Act (ADA) for people with physical disabilities in the United States and outlined the most important sources of information for people with disabilities and their special interests. Shaw and Coles (2004)

examined the 1995 Disability Discrimination Act in the United Kingdom and the implications this awareness raising has on tourism and disability studies.

Even though many studies have identified a list of constraints for tourists with disabilities, there is no scale measurement for tourists with disabilities. In this study, the scale is validated with a sample of Spanish travellers with disabilities. As intrapersonal, interpersonal and structural constraints have different effects on participation and preferences, insight into each type of constraint is provided.

3. Scale development and validation

Scale measurements aim to list a series of items within the same construct and analyse to what extent each of these items represents the construct to which they are related. This study follows the steps for developing a scale measurement established by Churchill (1979). The main stages of this process are: specification of domain of construct, item generation, data collection, refinement of the scale, and assessment of validity and reliability.

3.1. Specification of domain of construct

In the present study, and in line with the literature, three distinct dimensions (types) of constraints are used in order to develop and validate the scale: intrapersonal, interpersonal, and structural.

Intrapersonal barriers range from lack of knowledge to the physical or psychological dependency of the person with disabilities. This type of constraint is associated with the individual's physical, psychological, or cognitive condition (Smith, 1987; Lee et al., 2012; Figueiredo et al., 2012). Daniels et al. (2005) defined different factors that can give rise to this kind of constraint: stress, anxiety, lack of knowledge, health-related problems and social ineffectiveness. Lee et al. (2012) included personality factors, attitudes, religious beliefs, and moods, as well as physical and psychological dependency. This study includes the following constructs within intrapersonal constraints (Darcy, 2004): lack of knowledge, health-related problems, and physical and psychological dependency.

Interpersonal or interactive barriers refer to communication and interaction with people. They can be related to skill-challenge incongruities or communication (Figueiredo et al., 2012; Lee et al., 2012). This type of barrier arises out of social interaction or relationships between people within social contexts (Lee et al., 2012). Specifically, relationships with care-givers and service providers may lead to maladaptive social relationships among tourists with disabilities (Smith, 1987). In this study, this type of constraint is divided into skill-challenge incongruities and communication following Darcy (2004).

Structural barriers range from economic barriers to architectural or transport barriers. Daniels et al. (2005) classified these barriers into transport,

Table 1. Specification of domains of construct

Construct Domain	Construct Definition	Relevant Literature
Intrapersonal Constraints	Constraints associated with each participant's own physical, psychological, or cognitive functioning level.	(Smith, 1987; Daniels et al., 2005; Lee et al., 2012; Figueiredo et al., 2012)
Interpersonal Constraints	Constraints related to tourist communication and interaction with other people.	(Smith, 1987; Lee et al., 2012; Figueiredo et al., 2012)
Structural Constraints	Tourism-inhibiting factors, which are predominantly external to the tourist and imposed by social or physical conditions.	(Smith, 1987; Daniels et al., 2005; Figueiredo et al., 2012; Lee et al., 2012)

Source: The authors based on previous literature.

facilities, environmental and geographical, and financial barriers. Lee et al. (2012) proposed the following categories: lack of money, time and opportunity barriers. This study uses the following classification of structural barriers: lack of information, organization of communication of access, economic circumstance, cost, attendant care and socio-spatial constraints at the destination. This last group of constraints includes the following constructs following the classification by Darcy (2004): lack of information, organization and communication of access, economic circumstance, cost, attendant care, and socio-spatial. In conclusion, each type of constraint used for further analysis is defined in Table 1.

3.2. Item generation

Based on previous research, a list of 48 constraints affecting tourism participation and the experiences of people with disabilities has been drawn up. In this study, the aim is to evaluate the constraints people with disabilities must face from the moment they arrive at the destination to the moment they leave, so only those related to this experience are considered.

A jury of three experts and two frequent travellers with disabilities (all from Spain) reviewed this list of items. The experts have conducted previous research on tourism behaviour models and methodology and the interviewees had extensive tourism experience. They were given the list of constraints and an explanation of each of the categories and then asked to provide recommendations to ensure the representativeness of these constraints in each of the constructs, and the accuracy of the translation and wording. After this procedure, two items were eliminated due to redundancy and applicability, thus resulting in a final list of 46 items (see Table 2). A questionnaire based on this list of constraints was then designed and translated into Spanish.

Table 2. Scale items retained for online self-administered questionnaires

Intrapersonal Constraints
1. Lack of knowledge of individuals with disabilities.
2. Lack of knowledge of associates or service providers who organize trips.
3. The industry does not recognize the difference between disability and illness.
4. Inflexible booking arrangements to minimize pain and discomfort.
5. Lack of temperature-controlled environments.
6. Reliance on full-time carers or attendants.
7. Dependency on monopolized personal care and paratransit services.
Interpersonal Constraints
1. Tourism industry assumptions of ability limited disabled choices of what was offered.
2. Risk involved in participating due to lack of access to environments.
3. Non-disabled aversion to communicating with people with disabilities.
4. Attendants do not facilitate communication.
5. Disability is not seen as an appropriate other to be gazed upon.
Structural Constraints
1. All dimensions of access, accuracy, detail, presentation and format.
2. Complexity of operationalizing all dimensions of access, accuracy, detail, presentation, and format.
3. Discourses of access create different meanings for individuals.
4. Communication of tourism access information to staff at all levels of organizations.
5. Inclusion of tourism access information in generic marketing/target marketing.
6. Dimension of access, particularly vision, hearing, cognitive or psychiatric.
7. Provision of alternative communication technology and formats.
8. Economic constraints are a disadvantage for a disproportionate number of people
9. Affects ability to travel and also the frequency, duration, and choice of trip.
10. Double cost for those travelling with an attendant.
11. Higher accommodation costs as accessible rooms are only available in higher-class accommodations.
12. Paratransit systems are more expensive than public transport.
13. Equipment hire.
14. Resources and flexibility of home and community care programs away from residence.
15. Availability of attendants.
16. Suitability of attendants for the individual.
17. Customer service exclusion through non-provision/inappropriate language use and unfair treatment.
18. Assumptions about abilities of travellers with disabilities.
19. Attitudinal exclusion = segregated tourism experience.
20. Destination accessibility.
21. Access to area attractions/activities/services/natural areas.
22. Independent and dignified spatial use.
23. Linkages between transport and natural and built environments
24. Basics of parking, toilets and a continuous pathway are absent.
25. Finding appropriate accommodation.
26. Bedroom and bathroom requirements.
27. Access to other areas of hotel.
28. Discourses of access of accommodation – equality of provision.
29. Lack of accessible public transport provision.
30. Available class of transportation provision.
31. Lack of day tour operations (coach, rail, and watercraft) result in segregated experiences.
32. Relevant environmental planning legislation not implemented correctly.
33. Results in the nuisance or fire hazard interaction of people with disabilities and the non-disabled.
34. Aircraft access regulated through international agreements.

Source: Darcy (2004).

3.3. Data collection

Data were collected to evaluate the 46-item scale using an online, self-administered questionnaire. A sample of Spanish frequent travellers with disabilities were contacted through support centres for people with disabilities in seven Spanish universities and 10 associations of people with disabilities. The survey was carried out from June to October 2014. This sampling method was used due to the difficulty of reaching this market segment, and considering the particular difficulty of identifying people with hidden disabilities. After eliminating the incomplete questionnaires, a total of 248 valid responses were obtained for the data analysis. In the first part of the questionnaire, participants were asked to evaluate to what extent each of the 46 constraints included in the study influenced his/her participation and travel preferences. The items were assessed using a 7-point Likert-type scale, from 1 (it does not influence at all) to 7 (it influences a lot). The second part of the questionnaire included six socio-demographic questions related to age, gender, type of disability, degree of disability, need for assistant, and association or university through whom they were contacted.

As shown in Table 3, there were more female (56.9%) than male participants. The mean age of the respondents was 41.66 years old and the median age was 41 years old. In terms of the degree of disability, the majority had a mild disability (41.1%), followed by those with a severe disability (38.3%) and moderate disability (20.6%). Over half of the sample had a physical disability (53.2%), followed by sensory disabilities (26.6%) and cognitive disabilities (6%). Of the total sample, 14.1% had more than one type of the above-mentioned disabilities and the majority of the sample did not need a carer or assistant (66.5%).

Table 3. Demographics and disability profile

Variable	Category	Distribution
Gender	Male	107 (43.1%)
	Female	141 (56.9%)
Age	Mean (s.d.)	41.66 (12.11)
	Median	41
Degree of disability	Mild	102 (41.1%)
	Moderate	51 (20.6%)
	Severe	95 (38.3%)
Type of disability	Physical only	132 (53.2%)
	Sensory only	66 (26.6%)
	Cognitive only	15 (6%)
	Combined	35 (14.1%)
Need assistant	Yes	83 (33.5%)
	No	165 (66.5%)

Source: The authors.

3.4. Scale refinement

First, item-to-total correlations were calculated for the original lists of 7, 5 and 34 items of intrapersonal, interpersonal and structural constraints, respectively. All items in each of the three types of constraints had factor loadings over 0.5. Therefore, none of them was considered to be eliminated.

An exploratory factor analysis (EFA) with Varimax rotation and a principle component was then conducted to determine the dimensions of each of the types of constraints. Items with cross-loadings greater than 0.4 were eliminated. The Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity were calculated to determine the appropriateness of conducting a factor analysis. The internal reliability of each factor was then measured using Cronbach's alpha. Factors with a Cronbach's alpha lower than 0.7 were eliminated. The results of the EFA for each of the types of constraints are detailed below (Table 4).

All the items in intrapersonal constraints had cross-loadings greater than 0.4, so none was eliminated. The KMO measure was 0.817 and Bartlett's test of sphericity was significant ($p < 0.000$). Cronbach's alpha was greater than 0.7 for all factors, thus indicating that all the groupings were internally consistent. EFA resulted in 3 factors: lack of knowledge, health-related problems, and physical and psychological dependency. This 3-factor dimensionality accounted for 77% of the total variance.

For the second type of constraint, interpersonal constraints, 4 out of the original 5 items were retained for further analysis. One item was eliminated because the cross-loadings were greater than 0.4. The KMO measure was 0.691. Cronbach's alpha was greater than 0.7 for all factors, thus indicating

Table 4. Results of the EFA

Factor	KMO	Cronbach's Alpha	Explained Variance (%)
Intrapersonal Constraints	**0.817**		**77%**
Factor 1. Lack of knowledge		0.718	52.89%
Factor 2. Health-related problems		0.753	12.98%
Factor 3. Physical and psychological dependency		0.807	11.25%
Interpersonal Constraints	**0.691**		**82%**
Factor 1. Skill-challenge incongruities		0.765	20.96%
Factor 2. Communication		0.795	61.29%
Structural Constraints	**0.951**		**79%**
Factor 1. Information and communication		0.930	3.96%
Factor 2. Cost and attendant		0.940	5.57%
Factor 3. Socio-spatial		0.973	62.23%
Factor 4. Attitudinal		0.783	3.02%

Source: The authors.

that all the groupings were internally consistent. This EFA resulted in 2 factors: skill-challenge incongruities and communication. These 2 factors explained 82% of the variance.

In the EFA of structural constraints, 31 of the original 34 items were retained. The other 3 were eliminated because the cross-loadings were greater than 0.4. The KMO measure was 0.951. Cronbach's alpha was greater than 0.7 for all factors, thus indicating that all the groupings were internally consistent. This EFA suggested that these 31 items loaded in 4 different factors. These factors were termed as follows: information and communication, cost and attendant, socio-spatial, and attitudinal. With these 4 factors, 79% of the variance was retained.

In summary, intrapersonal constraints are divided into 3 factors following previous studies. These factors are lack of knowledge, health related problems, and physical and psychological dependency. Interpersonal constraints are divided into 2 factors: skill-challenge incongruities and communication. Structural constraints result in 4 factors: information and communication, cost and attendant, socio-spatial, and attitudinal.

3.5. Assessment of validity and reliability

This final step aims at validating the dimensions and constructs identified in the EFA described in the previous section. A confirmatory factor analysis (CFA) was conducted for each of the three categories of constraints using the robust maximum likelihood with Mplus 7.11. This section will include validity, reliability, and overall fit assessments.

First, validity refers to what extent the scale measures the reality it aims to measure, in other words, accuracy in measurement. Convergent validity refers to the extent of the correlation between the intended measure and other measures used to measure the same construct (Carmines and Zeller, 1979). Factor loadings of items with standardized values greater than 0.5 at a 5% significance level and average variance extracted (AVE) values greater than 0.5 suggest convergent validity. Discriminant validity refers to what extent the intended measure is different from other measures that refer to other constructs in the model (Carmines and Zeller, 1979). Discriminant validity is ensured when a latent construct has more variance with its indicators than with other latent constructs, which means that the square root of the AVE for each construct is higher than the estimated correlation between those constructs (Fornell and Larcker, 1981).

The results show that the standardized factor loadings are significant and range from 0.591 to 0.911. AVE values are from 0.70 to 0.83 (see tables 5, 6 and 7), thus ensuring the convergent validity of the measurement. Discriminant validity is supported by the fact that all square roots of the AVE for the constructs are higher than any correlation between constructs (see tables 5, 6 and 7), where the square root of AVE is shown in the diagonal of the matrix, and correlations between factors are shown in the off-diagonal. Therefore, convergent and discriminant validity hold.

Table 5. Discriminant validity for intrapersonal constraints

	Lack of knowledge	Health-related problems	Physical and psychological dependency
Lack of knowledge	0.866[a]		
Health-related problems	0.802	0.839[a]	
Physical and psychological dependency	0.630	0.618	0.909[a]

[a] Square root of AVE.

Source: The authors.

Table 6. Discriminant validity for interpersonal constraints

	Skill-challenge incongruities	Communication
Skill-challenge incongruities	0.888[a]	
Communication	0.611	0.904[a]

[a] Square root of AVE.

Source: The authors.

Table 7. Discriminant validity for structural constraints

	Information and communication	Cost and attendant	Socio-spatial	Attitudinal
Information and communication	0.910[a]			
Cost and attendant	0.752	0.908[a]		
Socio-spatial	0.847	0.788	0.912[a]	
Attitudinal	0.704	0.655	0.738	0.871[a]

[a] Square root of AVE.

Source: The authors.

Second, reliability refers to the fact that the measurement has stability and consistency. The composite reliability of the factors of the three models ranges from 0.72 to 0.97. Therefore, reliability is confirmed for each model.

Third, the overall fit of each of the three models corresponding to the three main types of constraints is tested using different goodness-of-fit indices. The following goodness-of-fit indices are used: χ^2, relative χ^2 value to degree of freedom (χ^2/d.f), the Tucker-Lewis index (TLI), the comparative fit index (CFI), the standardized root mean square residual (SRMR), and the root mean square error of approximation (RMSEA). Generally accepted fit measures are that the ratio χ^2/d.f should be lower than 3, TLI and CFI should be greater than 0.90, RMSEA should not exceed 0.08, and SRMR should be lower than 0.05. The intrapersonal constraints model with 3 factors shows acceptable goodness-of-fit indices (see notes in Table 8). The interpersonal constraints model with 2 factors shows satisfactory levels of fit (see notes in Table 9). Finally, the structural constraints model with 4 factors shows a good fit (see notes in Table 10).

4. Results and discussion

CFA was used to confirm the previously identified factor structure. The results shown in Table 8 demonstrate the three-dimensional structure of intrapersonal constraints. All items are related to the participant's own physical, psychological, or cognitive functioning level, as stated in the definition of the construct. Intrapersonal constraints related to physical and psychological dependency are seen as important inhibitors for travel in this study. Therefore, emphasis must be put on providing the right skills and training to all tourism and social professionals that have contact with people with special access needs at any time of the travel experience. In doing so, these professionals will be more able to facilitate and minimize this dependency that can affect these travellers' participation and preferences in a negative way.

As regards interpersonal constraints, the results in Table 9 show a two-dimensional structure: skill-challenge incongruities and communication, which is in line with the previous literature (Darcy, 2004; Figueiredo et al., 2012; Lee et al., 2012). The communication factor (i.e. 'attendants as communication facilitators' and 'non-disabled aversion to communicating with people with disabilities') is the interpersonal constraint that exerts the strongest effect among the participants of this study. Interpersonal constraints also affect both participation and preferences. Again, knowledge provision on how to communicate with people with special access needs and how to meet their needs is a crucial factor for them to engage in travel.

Table 8. CFA for intrapersonal constraints

Factor/Item	Composite Reliability	AVE	Factor Loading	Est./S.E.	*p*-value
Factor 1. Lack of knowledge	**0.72**	**0.75**			
Lack of knowledge of people with disabilities.			0.687	12.932	***
Lack of knowledge of associates or service providers who organize trips.			0.814	17.447	***
Factor 2. Health-related problems	**0.75**	**0.70**			
The industry does not recognize the difference between disability and illness.			0.767	17.375	***
Inflexible booking arrangements to minimize pain and discomfort.			0.750	15.636	***
Lack of temperature controlled environments.			0.591	10.643	***
Factor 3. Physical and psychological dependency	**0.81**	**0.83**			
Reliance on full-time carers or attendants.			0.741	12.280	***
Dependency on monopolized personal care and paratransit services.			0.911	22.068	***

*** *p*-value < 0.05

Note: χ^2 = 26.77, 11 degrees of freedom (p < 0.05), SRMR = 0.032, TLI = 0.935, CFI = 0.966, RMSEA = 0.078.

Source: The authors.

Table 9. CFA for interpersonal constraints

Factor / Item	Composite Reliability	AVE	Factor Loading	Est./S.E.	*p*-value
Factor 1. Skill-challenge incongruities	**0.77**	**0.79**			
Tourism industry assumptions of ability limited people with disabilities choices of what was offered.			0.855	11.698	***
Risk involved in participating due to lack of access to environments.			0.721	10.385	***
Factor 2. Communication	**0.80**	**0.82**			
Non-disabled aversion to communicating with people with disabilities.			0.725	10.816	***
Attendants as communication facilitators.			0.909	14.498	***

*** p-value < 0.05

Note: $\chi^2 = 0.618$, 1 degree of freedom ($p = 0.432$), SRMR = 0.001, TLI = 1, CFI = 1, RMSEA = 0.000.

Source: The authors.

Finally, the results in Table 10 suggest that there are 4 dimensions in the structural constraints model. These factors are information and communication, cost and attendant, socio-spatial, and attitudinal.

The information and communication factor is related to the delivery of tourism information through marketing materials and awareness of its availability among tourism staff. This communication factor is different from the one identified in interpersonal constraints as the former is dependent on factors related to the environment only, while the latter depends on the interaction between the visitor with disabilities and the environment. Furthermore, previous literature (Lee et al., 2012; Darcy, 2004) has treated information and communication as two different factors. However, it is not surprising that they are included in the same factor here, as the communication stage naturally follows the information preparation stage. Moreover, communication and information constraints have been a prevalent area of study in tourism for some time (Williams et al., 2006; Darcy, 2010). Many barriers arise during the preplanning and information stages (Blichfeldt and Nicolaisen, 2011). This study corroborates the prevalence and influence of these constraints among people with disabilities and, therefore, the appropriateness of considering accessibility to information a key issue when providing equal opportunities.

The cost and attendant factor includes all constraints linked to economic issues related to the tourism experience, and includes carers who sometimes travel with people with disabilities to help with their basic needs. Although these two themes have been regarded as separate factors in the previous literature (Darcy, 2004; Lee et al., 2012), a single factor emerges here. This finding supports the idea that travelling with an attendant is normally linked to an extra cost, so it can be considered an economic constraint in itself.

Socio-spatial constraints include constraints related not only to accessibility to the destination and different areas within the destination, but

Table 10. CFA for structural constraints

Factor/item	Composite Reliability	AVE	Factor Loading	Est./S.E.	*p*-value
Factor 1. Information and communication	**0.93**	**0.83**			
All dimensions of access, accuracy, detail, presentation, and format.			0.874	36.599	***
Complexity of operationalizing all dimensions of access, accuracy, detail, presentation, and format.			0.873	25.921	***
Discourses of access create different meanings for individuals			0.899	43.167	***
Communication of tourism access information to staff at all levels of organizations			0.866	32.084	***
Dimension of access, particularly vision, hearing, cognitive, or psychiatric			0.767	19.197	***
Provision of alternative communication technology and formats			0.687	15.530	***
Factor 2. Cost and attendant	**0.94**	**0.82**			
Double cost for those travelling with an attendant			0.776	20.917	***
Accommodation costs due to accessible rooms only being available in higher-class accommodations			0.801	20.233	***
Paratransit systems are more expensive than public transport			0.900	46.678	***
Equipment hire			0.831	28.856	***
Resources and flexibility of home and community care programs away from residence			0.860	34.542	***
Availability of attendants			0.798	24.625	***
Suitability of attendants for the individual			0.804	25.418	***
Factor 3. Socio-spatial	**0.97**	**0.83**			
Destination accessibility			0.898	49.513	***
Access to area attractions/activities/services/natural areas			0.911	45.624	***
Independent and dignified spatial use			0.855	28.015	***
Linkages between transport, the natural and built environments			0.816	23.249	***
Basics of parking, toilets, and a continuous pathway are absent			0.885	39.818	***
Finding appropriate accommodation			0.831	29.218	***
Bedroom and bathroom requirements			0.827	27.962	***
Access to other areas of hotel			0.819	28.297	***
Discourses of access of accommodation – equality of provision			0.864	36.003	***
Lack of accessible public transport provision			0.784	19.284	***
Available class of transportation provision			0.843	30.770	***
Lack of day tour operations (coach, rail, & watercraft) result in segregated experiences			0.772	18.503	***
Relevant environmental planning legislation not implemented correctly			0.822	25.148	***
Results in the nuisance or fire hazard interaction of people with disabilities and the non-disabled			0.806	22.321	***
Aircraft access regulated through international agreements			0.757	17.804	***
Factor 4. Attitudinal	**0.80**	**0.76**			
Customer service exclusion through non-provision/inappropriate language use and unfair treatment			0.825	20.043	***
Assumptions about abilities of travellers with disabilities			0.825	15.449	***
Attitudinal exclusion = segregated tourism experience			0.623	9.433	***

*** p-value < 0.05

Note: χ^2 = 865.99, 428 degrees of freedom (p < 0.001), SRMR = 0.050, TLI = 0.901, CFI = 0.909, RMSEA = 0.064.

Source: The authors.

also specific constraints related to other needs, such as accommodation or transport. In previous studies, legislation constraints have been treated as a separate factor, however they are included in the same factor here. Differences in legislation from one country to another, or in its implementation, can lead to different socio-spatial uses and obligations. For example, when environmental planning legislation is not implemented correctly, accessibility to a destination and its attractions can be negatively influenced. Although the dimensions can be identified here, it is important to consider that this type of constraints are heavily dependent on the characteristics of the destination visited by people with special access needs, so they may vary from one place to another.

Finally, attitudinal barriers are identified as a separate factor. The participants of this study perceive the attitudes of tourists with disabilities, or the attitudes of tourism staff and other tourists towards them differently to the socio-spatial constraints. Attitudinal barriers have also been treated as a separate factor in the previous literature (Bi et al., 2007). This is not surprising because attitudes are related to mental states or dispositions, while socio-spatial constraints tend to be related to the destinations' characteristics.

5. Conclusions

This study provides a tool to measure travel constraints for Spanish tourists with disabilities. Both qualitative and quantitative methods have been employed with the aim of evaluating constraints that people with disabilities may face from the moment they arrive at a destination to the moment they leave. The results of the study have both theoretical and managerial implications, which will be discussed in this section.

5.1. Theoretical implications

This study contributes to the knowledge on travel constraints for visitors with disabilities. Constraints have a large effect on tourists with disabilities. Thus, there is a growing interest in exploring these inhibiting and influencing factors, which can affect tourism experiences. Although there are several studies based on qualitative and quantitative methodologies to identify a list of constraints, there is not yet a developed and validated scale among Spanish tourists with disabilities. Therefore, this study will provide scholars with a quantitative tool for further research in the area. Furthermore, this study explores the dimensionality of each type of constraint. In this sense, it will also be useful for further research exploring any of the specific types of travel constraints of people with disabilities; in particular because a specific measurement tool is provided. In the context of Spain, as happens in other countries, the market of people with special access needs is growing, so it is especially important that tourism scholars explore their behaviour to provide tourism practitioners with the right tools and strategies to accommodate their needs.

5.2. Managerial implications

As previously stated, the accessible tourism market is growing more rapidly than other market segments. This study can provide tourism destinations with a practical tool to evaluate barriers encountered by people with disabilities. In addition, tourism professionals and companies can take advantage of the results obtained in this study, especially when adapting or creating accessible tourism products.

Both the tourism industry and governments need to be aware of the importance of identifying and minimizing constraints. Using this tool would help in tourism planning, particularly when optimizing efforts to overcome these accessibility constraints. Furthermore, this scale can be useful in developing policies and strategies for accessible tourism. In addition, because understanding these constraints is critical to tourism planning and marketing, tourism destinations should develop and implement strategies to overcome perceived constraints (Chen et al., 2012).

Working on eliminating barriers facilitates tourism experiences for people with disabilities, and at the same time improves the quality of products and services for all groups of the population. A destination or a product accessible to everyone can have a competitive advantage through this differentiation and by focusing on this market segment.

Not only do we have key constraints for further research, but we also have a tool tourism companies and organizations can use to identify where they have to improve in order to overcome these barriers and develop accessible products. It is also useful for them to provide recommendations and a roadmap to improve accessibility and surmount barriers that are important for the market.

As suggested by Figueiredo et al. (2012), when addressing this market segment, and when evaluating these barriers in tourism destinations, it is important to take into account the diversity of this group, as their needs and the barriers they encounter may be different depending on the type and the degree of disability, among others. Thus, when using the tool provided here, attention must be paid to the particular barriers that strongly affect one type of tourist with a disability more than another, or one degree of disability more than another. For example, the format of the information on the destination webpage may not be a barrier for people with physical disabilities. However, providing the information in different formats (e.g. audio description, with subtitles, large font size, high contrast, etc.) may be crucial for people with sensory disabilities, such as the visually or hearing impaired.

Furthermore, improving accessibility levels by identifying and overcoming these barriers can attract new markets with other types of accessibility requirements, such as families and seniors. In other words, good levels of accessibility or a barrier-free environment at a destination will not only dignify the experiences of tourists with disabilities, but will also raise levels of comfort for other groups in the population. In particular, in a country

such as Spain, where tourism is one of the most important economic activities, improving accessibility standards can help to enhance both domestic and international tourism. In this regard, it is important to consider the concept of 'universal design', which can be defined as the different actions undertaken with the aim of designing products and environments that can be used by all people to the greatest extent possible, excluding adaptation or specialized design. Consequently, the entire planning, management, and decision-making process should not separate people with special access needs. Accessible destination development and planning comprises a wide range of stakeholder groups and the direct involvement of people with disabilities and organizations in this process can lead to more inclusive environments.

5.3. Limitations and further research

This study follows a precise method to develop and validate a scale. However, it has some limitations, which need to be taken into consideration. The sample is limited to the Spanish population and tourists with disabilities who were contacted through associations or universities. However, the fact that this population group is difficult to reach must also be considered when identifying these limitations. For further studies, researchers must be aware of this when inferring to other countries or regions, or to other accessible tourism market sub-segments for people without disabilities (e.g. seniors).

This tool is not specific to each type of disability, but applicable to the disabled market segment as a whole. The heterogeneity of this market segment is acknowledged here, so further research considering differences, depending on the types and degrees of disability, is highly encouraged and, as suggested in the implications section, any destination that uses this tool must pay attention to the particular constraints faced by people with specific types and degrees of disabilities. Furthermore, this scale may not be applicable in all contexts, so further research in a range of tourism destinations is also recommended.

This is an exploratory study aimed at developing a scale to assess and determine tourism constraints among Spanish citizens with disabilities. Consequently, further research is needed to identify new dimensions and constraints not covered in this study. Although these limitations are recognized here, the cultural similarities between Spain and neighbouring countries may lead these countries to consider applying this scale.

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