

INCLUSIVE HOTEL DESIGN IN INDIA : A USER PERSPECTIVE

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Received: 2018-08-28 | Accepted: 2019-03-10 | Published: 2019-05-31

Abstract: This paper examines the barriers concerning access to hotel facilities in India, which leads to the physical exclusion of tourists with some form of physical disability. This research aims to analyse the existing facilities available in a hotel as experienced by these users with regard to mobility, circulation, and access to services in all categories of hotels in India. People with disabilities (PwD) have the same motivation to travel and experience tourism as other tourists but are impeded owing to the challenges that they experience in hotels. This study focuses on PwD's perspectives on the concept regarding barrier-free hotel design and planning in India, which encourages 'accessible tourism'. Furthermore, this research employs a quantitative analysis from the users' perspective pertaining to differently abled tourists with respect to the concepts of 'barrier-free' and 'accessible tourism'. The users' experiences have been rated for hotels ranging from budget to 5-star categories. Moreover, the research findings indicate that although barrier-free tourism is emerging as a concept in India, many hotels are yet to implement universal standards concerning accessibility. While the Ministry of Tourism, Government of India, has taken several initiatives to provide barrier-free tourism in 4- and 5-star hotels to make their facilities accessible for PwD, this research recommends that such facilities should be upgraded in budget hotels as well, in order to develop

affordable and inclusive hotel design. In addition, this study emphasizes the relevance of universal design and proposes a new paradigm to establish inclusive hotels, which can further encourage domestic and international tourists to experience the rich culture and heritage of India.

Keywords: People with Disability (PwD), hotel design, accessible tourism

Introduction

People with disabilities (PwD) are vulnerable because of the many barriers they face: attitudinal, physical, and financial. Addressing these barriers is within our reach, and we have a moral duty to do so. Most importantly, addressing these barriers will unlock the potential of numerous people who have so much to contribute to the world. Governments worldwide can no longer overlook the hundreds of millions of PwD who are denied access to health, rehabilitation, support, education, and employment and never get the chance to shine, Stephen Hawking (Ministry of Statistics and Program Implementation, Government of India, 2016).

Major barriers that PwD experience are factors of the physical environment that restrict their societal participation. These barriers can have a huge impact on the experience of disabled users and exacerbate their disability, as asserted by the *World Report on Disability* (WHO & World Bank, 2011). Modifications implemented to improve accessibility to transport systems or public infrastructure can reduce such barriers and foster inclusivity. Hammel et al. (2015) agree that environmental factors, which include the built and natural environment, assistive technology, and transportation are most relevant in providing accessibility in the form of physical, cognitive, sensory, and social communication, which can improve societal inclusion.

Furthermore, PwD have the motivation to travel (Shi, Cole, & Chancellor, 2012), with a desire to be independent, even though their accessibility needs may vary. Accessibility remains as one of the 'pull factors' of one's motivation to travel. United Nations (2003), and Yau, McKercher and Packer (2004) state that PwD have the same motivations to travel and experience

leisure activities as the rest of the population. Allan (2013) posits that the motivation of these travellers relates to their interest in visiting historical or cultural sites as well as for enjoyment, and this enhances engagement in tourism.

The Concept of Accessible Tourism

The definitions of 'accessible tourism' are dynamic and change with the context. Gillovic, McIntosh, Darcy, and Cockburn-Wootten (2018) suggest that there is successive movement in the usage of the term to 'barrier-free tourism', 'disabled tourism', 'easy-access tourism', 'inclusive tourism' and 'tourism for all' to the more recent and updated concept of 'accessible tourism'. Recommendations as well as best practices for 'accessible tourism' have been put forth globally by collaborative stakeholders, which state that governments, international agencies, tour operators, and end-users, including PwD and their organisations, can ensure successful tourism (United Nations Enable, 2018).

'Accessible tourism enables people with access requirements, including mobility, vision, hearing, and cognitive dimensions of access, to function independently and with equity and dignity through the delivery of universally designed tourism products, services, and environments', Darcy and Dickson (2009). This definition addresses those travelling with children in prams, PwD, and senior citizens. According to Darcy and Dickson (2009), accessible tourism creates a destination experience that is socially sustainable and considers the needs of all individuals. The said concept has been discussed in detail in the *Manual on accessible tourism for all: Principles, tools and best practices* (World Tourism Organization, 2016). Accessible tourism is a form of tourism that enables every individual, irrespective of their physical, social or cultural conditions, to engage in leisure and tourism activities and has a process that allows them to function independently through universal tourism products, services, and environments.

Devi, Goyal, and Ravindra (2013) define accessibility as physical access as well as accessibility to transportation. The five components considered to be

environmental barriers by Whiteneck, Harrison-Felix, Mellick, Charlifue, and Gerhart (2014) are accessibility, accommodation, resource availability, social support, and equality. The first component accessibility relates to transportation, road infrastructure, and mobility within the city, which should be user-friendly. Rahman and Ohmouri (2014) have considered accessibility or public transport as one of the primary barriers to the development of an accessible environment. Moreover, accommodation as an environmental aspect can restrict one's activities. Resources availability refers to medical facilities, whereas social support represents a community's attitude towards integrating PwD. In addition, equality refers to policies and regulations adopted by governments and organisations to provide equal opportunities. Of the five barriers listed above, accessibility and accommodation were considered as the barriers that affected wheelchair users the most. Hence, the primary constraints for tourists with disabilities are transportation and hotel accommodation.

To provide inclusive and barrier-free tourism, various aspects are important, of which transportation and accommodation should be addressed for the designing and planning of hotels, so that they can provide their users the opportunities concerning accessibility. The role played by urban planners, architects, and local authorities is vital in the creation of awareness regarding accessibility.

Hotel accommodation as a barrier in tourism

Certain authors (Poria, Reichel & Brandt, 2011; Tantawy, Kim, & Pyo, 2004) are of the opinion that deficiencies in hotel design can create barriers for tourists with disabilities and believe that hotel managements should overcome these barriers with the help of best practices through various measures to ensure a valuable experience for their users. Darcy (2007) points out that very limited research has been conducted on accessible tourist accommodation and the accessible tourism market, which is a global phenomenon involving tourists who have various issues in terms of mobility, vision, hearing, and cognitive abilities.

In general, the accommodation provided by hotels rarely meets the desired criteria, and existing hotels need to remodel their infrastructure and facilities to provide barrier-free tourism (Bisschoff & Breedts, 2012). While evaluating tourist sites for differential users, Israeli (2002) describes seven accessibility attributes for wheelchair users or those using crutches as walking aids. These attributes include staircases, elevators, parking areas, sidewalks, access ramps, paths, and restrooms. Further, these attributes can be studied with regard to details such as the height and the width of the access point to a hotel, for the comfort of all users. There is always an apprehension among differently abled users about using these facilities at tourist sites, which creates barriers. Israeli (2002) concludes that serving all users is not something that comes naturally to most people. Therefore, special accommodation must be considered to serve PwD well.

The physical barriers to hotel accommodation were studied by Poria, Reichel, and Brandt (2011). Their study differentiates difficulties and barriers linked to the types of environments (human or physical) as well as emotions. Furthermore, it evaluates the barriers in hotel accommodations, with a focus on hotel rooms, hotel public areas, hotel restaurants, and staff attendance. Most of the findings indicate that the dimensions of the furniture in hotel rooms and hotel public areas were not comfortable for wheelchair users, and they experienced difficulties in using them. Though their experience with hotel staff was satisfactory, these users found most hotel staff to be overprotective, trying to assist even when they did not require help. The concept of 'accessibility' is relative, and the hotel staff considered certain areas of the hotel as 'accessible', although according to the users there were barriers.

Other research works (Popiel, 2014; WTO, 2016) also found that accommodation is a challenge for travellers with disabilities. Comfort and safety are the primary criteria in design, and as per the standards of universal design criteria, accommodation facilities must adhere to the specified standards on accessibility. Therefore, there is a need to consider design and planning principles for hotel accommodations that cater to the

requirements of all tourists. The concept of universal design has been discussed in the following section, which emphasises an inclusive design approach.

The Concept of Universal Design

'Universal Design is defined as products and environments created to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design', according to the Centre for Universal Design, 2007 (City of Calgary Community Neighbourhood Services (CNS), 2010). Moreover, Burgstahler (2009) describes the features of the seven principles of universal design as follows:

Equitable use for people with diverse abilities, flexibility to accommodate individual preferences and abilities, simple and intuitive so that design is easy to understand for all irrespective of knowledge, and language skills, perceptible information to communicate necessary information to the user, tolerance for error to minimise hazards, low physical effort to access design which is comfortable to the user with minimum fatigue, size, and space for approach, reach, manipulation, and use regardless of the user's body size, posture, or mobility.

These principles of universal design have been adopted in the tourism sector and in hotels to minimise the barriers faced by PwD. Darcy, Ambrose, Schweinsberg, and Buhalis (2010) studied the relevance of the concept concerning universal design for the provision of accessible tourism environments. Moreover, they analysed its role in supporting the operational management of facilities and reduction of operational costs. Moreover, these principles of universal design are recommended by the *Accessibility Design Guide: Universal design principles for Australia's aid program* (2013), which focus on physical accessibility to the built environment in order to meet the requirements of as many users as possible. World Tourism Organization (2016) discusses the relevance of universal design for buildings, stating that hotels with a single entrance and staircase may create barriers for people

who carry luggage and could also act as a threat for wheelchair users while accessing the hotel space.

Tourism in India

India is a land with a rich cultural heritage and traditions, which attract domestic and international tourists, given the country's diversity pertaining to historical and ancient monuments, palaces, forts, museums, wildlife sanctuaries, and various scenic destinations. Over the past few years, the tourism industry in India has flourished and is becoming an important sector of the Indian economy (Malik & Nusrath, 2014; Vijayaragavan, 2014), although many challenges for the tourism industry are still prevalent, including building and providing sufficient infrastructure, accessibility, and amenities (Dayananda & Leelavathi, 2016). As the number of travellers with differential abilities increases, the potential market of the tourism industry keeps increasing, and the Indian Government has been implementing several measures to provide accessible tourism (Shanimon & Hameedu, 2013).

In their survey on accessible tourism in India, the Ministry of Tourism, Government of India, (2015) studied the scope of accessible tourism among domestic and international tourists. It concluded that there is a lack of necessary facilities in hotel rooms for tourists, with reduced mobility, higher tariffs for adaptable rooms, and a lack of understanding of special needs among hotel staff. Many initiatives have been taken by the Government of India to encourage the notion regarding barrier-free cities. As specified in the guidelines of the Government of India, drafted by the Ministry of Urban Development (2016), the concept of a barrier-free city that follows universal design principles has been put forth. These principles include retrofitting existing old buildings to comply with accessibility standards and creating modes of ingress and egress to emphasise the dignity and independence of PwD.

ITC hotel division has adopted the concept of universal design based on international best practices. *A Guide to Universal Design in Built Environments* (ITC Hotels, 2014) discusses inclusive environments in hotels,

which incorporate design for structural needs that include circulation areas such as parking, building entrances, corridors, lifts, stairs, ramps, handrails, and all common facilities such as restaurants, business and conference centres, spas, health clubs, guest rooms, and shower rooms. Furthermore, the guidelines address finishes and materials to be used for hotels, signage, and lighting that incorporate the principles of universal design in their planning.

When it comes to inclusiveness, it seems to be a one-sided argument in India, wherein very few stakeholders are interested in adopting, investing, and implementing an accessible design to build infrastructure. The majority of the available literature does not address the perspective of PwD. Research conducted in this area is very scarce, which acts as a deterrent for policymakers to encourage further growth of inclusiveness in the country. Hence, this study aims to provide an overview of users' perspective on inclusiveness in various categories of hotels in India. The said perception is defined as the way people receive, select, organise, and attribute meanings to objects, individuals, and events through their five senses. Moreover, this research aims to provide guidelines for policymakers and hotel promoters to ensure inclusiveness and barrier-free access to hotels, which will enhance the performance of hotels and tourism in India. The findings of this research further the knowledge on inclusive design requirements of PwD, which directly influences accessible tourism in India.

Research Questions

- What are the perceptions of travellers with disabilities regarding the level of inclusiveness among existing hotels of various categories in India?
- Is inclusiveness independent of the hotel type?

Methodology

The key research objective was to evaluate the perceptions of PwD during their stay at a hotel who are local tourists. The study adopted a descriptive

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<http://dx.doi.org/10.17411/jacces.v9i1.185>

research design. The target population comprised domestic travellers with mobility disability, who stayed in hotels when they travelled to a destination for work or recreation., In our study, a survey was conducted among PwD to analyse their perspectives on the inclusive nature of the existing hotels in the country. The respondents of the survey were identified through a registered non-government organisation located in Mumbai, India, which works for the welfare of PwD. The sampling was carried out with the intention to cover all respondents with mobility disabilities. A non-probability sampling technique, Snowball sampling, was employed to collect the relevant data.

A survey instrument in the form of a questionnaire was developed, adopting the seven principles of universal design. Data was collected using a structured questionnaire with 25 statements in the form of five-point Likert scale. Moreover, the questionnaire has two sections, wherein the first focuses on the demographic profile of the respondents and the second contains various statements related to the respondents' perceptions on measuring inclusiveness in hotel design. The perception of the respondents was collected using a questionnaire that contains statements related to accessibility, circulation, guest room experience, and the common facilities available. In addition, inclusiveness of the hotel design was measured as per the design standards based on anthropometric application. 'Anthropometrics' is the study of human body measurements and is an interface between the human body and the components of interior space (Panero & Zelnik, 1979). Anthropometrics vary for PwD. Hence, considering the application of anthropometrics to the hotel design can make it inclusive.

The questionnaire, which was developed as a Google form, was sent to 83 respondents, and 45 filled-in questionnaires were received. The data was coded in SPSS v25, following which it was captured and analysed. Appropriate statistical techniques were applied, and at each turn, both the statistical significance and practical significance were considered. To describe the data, the measure of the central tendency and variation has been used. Furthermore, one-way ANOVA has been used to identify and infer

the significant difference in the respondents' perceptions on the level of inclusiveness in business and various star category hotels in India. The reliability of the variables in this construct is measured using Cronbach's alpha. The overall value of the questionnaire is $\alpha = 0.884$, and the value of Cronbach alpha denotes the high reliability of the measurement scale.

Results

The respondents are aged between 19 to 71 years, with a mean age of 39 years, among which 24 were male and 21 were female. All the respondents (55) in the survey were wheelchair bound. To elaborate further, 35% of the respondents stayed in budget hotels, 20% stayed in 4-star hotels, while only 12.5% stayed in 5-star hotels during their last travel to a destination. However, five respondents did not reveal their choice of hotel category during their last stay. Moreover, 29.3% travelled independently once in three months, whereas 36.6% never travelled independently. On the other hand, the percentages of those who travelled independently biannually and annually were 14.6% each, for a cumulative total of 29.2%.

Table 1: Demographic Profile of the Respondents

Category	Range	Frequency	Percentage
Gender	Male	24	53.3
	Female	21	46.7
Age	Average	39	NA
	Minimum	19	
	Maximum	71	
Categories of Hotel for stay while travelling by PwD	Budget Hotel	14	35.0
	3 Star	13	32.5
	4 Star	08	20.0
	5 Star	05	12.5
Frequency of independent travel by PwD	Never	15	36.6
	Once a month	02	4.9
	Once every 3 months	12	29.3
	Once every 6 months	06	14.6
	Once every year	06	14.6

The first research question sought to evaluate the level of inclusiveness across different hotel types. To answer this research question, the

respondents were asked to rate their perception on the inclusive design of various facilities, space for circulation, accessibility from the entrance to exits, design of furniture in a hotel room, design and layout of a guest room, design and layout of guest bathroom, fittings in the bathroom, and the design of common spaces such as restaurants, public toilets, and landscape area of a hotel.

Their responses were measured on a five-point Likert scale, with 1 representing poor and 5 representing excellent. The cut-off point between poor and excellent was 3.0, and the results have been summarised in Table 2.

Table 2. Descriptive Statistics on the Level of Inclusiveness among Hotels of Various Categories in India

	Budget Hotel	3-Star	4-Star	5-Star
Support is given to for PwD by all the hotel facilities	2.08	2.69	2.13	4.00
Entry and exit access points are designed for PwD	1.86	2.69	2.25	4.20
Specific parking spaces are available for PwD	1.64	2.25	1.25	3.20
Entry from parking to the entrance is at the same level or is accessible with the help of a ramp	2.07	2.50	1.75	3.60
Various signage are present in the hotel to guide all the guests	2.29	2.62	1.43	3.60

	Budget Hotel	3-Star	4-Star	5-Star
Sufficient natural and artificial lighting is available in all areas	2.73	3.17	3.38	4.75
Tactile strip identification is applicable	2.33	2.00	1.86	3.00
Hotel guest rooms have designs that support PwD	1.71	2.09	2.00	2.80
Beds are designed to support PwD	1.93	2.23	1.88	3.20
All furniture in hotel rooms are designed keeping in PwD in mind	1.57	2.17	1.88	2.80
There is a provision of a shower chair or bench in toilets	1.36	1.58	1.50	3.00
The flooring of the guest room and toilet is at the same level	1.86	2.42	2.63	4.20
Sanitary fittings in the toilet are accessible to PwD	1.57	2.17	2.50	4.00
Hotel guest room toilets have supportive handrails	1.64	1.67	1.50	3.80
Mirrors of wash basins are at a	1.93	2.17	2.00	4.00

	Budget Hotel	3-Star	4-Star	5-Star
height comfortable to use				
Mobility options inside the hotel are designed keeping PwD in mind	2.14	2.45	2.25	3.40
Facilities are designed to keep the body in a neutral position	1.92	2.17	2.13	3.75
Facilities are designed to tolerate accidental and unintended actions by users	2.14	1.92	2.25	3.75
Corridor sizes in the hotel premises are comfortable for movement	2.79	3.25	3.25	4.40
Lift size is comfortable for movement and circulation	2.71	2.92	3.00	4.60
The emergency exit is accessible to PwD in case of emergency	1.43	2.25	1.63	3.50
The outdoor landscaped areas are easily accessible to PwD	1.93	1.83	2.00	3.40
Dining tables are suitable for PwD	2.15	2.50	2.50	4.00

	Budget Hotel	3-Star	4-Star	5-Star
Buffet and service counters are suitable for PwD	2.64	2.62	2.38	3.75
Hotel staff are experienced in assisting PwD	2.50	2.85	2.13	4.40

This table shows that for budget hotels, most of the items were rated negatively, wherein all the statements on inclusiveness are rated with the mean value being less than 3.0. The mean value denotes extremely poor accessibility in the design and layout of budget hotels. For 3-star hotels, only two items had mean ratings greater than 3.0, whereas the rest had ratings less than 3.0, which suggests a relatively poor level of inclusiveness. For 4-star hotels, just as in 3-star hotels, the majority of the items were rated poorly. The size of corridors in the hotel premises and the availability of natural and artificial light were rated average, similar to that of 3-star hotels. Unlike the other star category and budget hotels, many items of 5-star hotels were rated positively for their inclusive design. Moreover, 5-star hotels are ahead of all the other categories in terms of the design of guest rooms, bathrooms, and sanity fittings provided. No remarkable difference was observed regarding guest room design, beds, furniture, and fittings provided between the different categories of hotels.

Inclusiveness Based on Hotel Types

The second research question evaluates if the level of inclusiveness was dependent on the hotel type. A hypothesis has been proposed to test the relationship between hotel type and inclusive design. The hypotheses for this research question are as follows:

- H_0 : Inclusiveness is independent of hotel type.
- H_1 : Inclusiveness is dependent on hotel type.

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<http://dx.doi.org/10.17411/jacces.v9i1.185>

Since the dependent variable, inclusiveness, was a scale variable, and the independent variable, hotel type, was an ordinal variable one-way ANOVA analysis was optimal to consider the same. In this regard, the test was conducted at 95% confidence level, and the key assumption for the use of ANOVA as well as the homogeneity of variances between different groups of hotels have been presented in Table 3.

Table 3: Test of Homogeneity of Variances

Inclusive Tourism	Levene's Statistic on Homogeneity	df1	df2	Sig.
Based on Mean	1.434	3	36	0.127
Based on Median	1.204	3	36	0.322
Based on Median, with Adjusted df	1.204	3	24.339	0.329
Based on Trimmed Mean	1.228	3	36	0.134

From the results, the computed p-values were noted to be greater than 0.05. It follows the observation that the variances were homogeneous, thus validating the use of ANOVA. The result of one-way ANOVA has been presented in Table 4.

Table 4: ANOVA Test: Inclusive Tourism and Hotel Type

	Sum of Squares	Df	Mean Square	F	Significance
Between Groups	11.443	3	3.814	8.199	0.000
Within Groups	16.748	36	0.465		
Total	28.191	39			

From the aforementioned table, it can be note that $F(3,36) = 8.199$; $p = 0.00 < 0.05$. To this effect, with the p-value being less than 0.05, we reject

the null hypothesis and conclude that enough statistical evidence was present at the 99.9% confidence level such that the ratings of inclusive tourism differed from one hotel type to another. Furthermore, this was also confirmed using the Welch and Brown-Forsythe robust tests of equality with regard to the means presented in Table 5.

Table 5: Robust Tests of the Equality of Means: Inclusive Tourism and Hotel Type

	Statistics	df1	df2	Significance
Welch	4.257	3	13.462	0.026
Brown-Forsythe	6.785	3	12.393	0.006
a. Asymptotically F distributed				

Again, from the preceding analysis, it can be ascertained that both statistics had p-values of $0.026 < 0.05$ and $0.006 < 0.01$, respectively. This affirms that the mean ratings of the aggregate inclusive tourism score differed significantly with the hotel type. To further establish the key hotel types that were significantly different from one another in terms of the ratings, the Bonferroni post-hoc test was conducted, as proposed by Field (2016). The related output has been presented in Table 6.

Table 6: Post-Hoc Test - Inclusive Tourism and Hotel Type

(I) Hotel Type	(J) Hotel Type	Mean Difference (I-J)	Significance
Budget Hotel	3-Star	-0.41363	0.745
	4-Star	-0.12301	1.000
	5-Star	-1.71269*	0.000
3-Star	Budget Hotel	0.41363	0.745
	4-Star	0.29063	1.000
	5-Star	-1.29906*	0.005
4-Star	Budget Hotel	0.12301	1.000
	3-Star	-0.29063	1.000
	5-Star	-1.58968*	0.001
5-Star	Budget Hotel	1.71269*	0.000
	3-Star	1.29906*	0.005
	4-Star	1.58968*	0.001

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In the preceding analysis, the highest mean difference (MD) was observed between budget hotels and 5-star hotels (MD = -1.71269; $p < 0.05$), followed by the mean difference between 4-star hotels and 5-star hotels (MD = -1.58968; $p < 0.05$), and the least significant difference was found between 3-star hotels and 5-star hotels (MD = -1.29906; $p < 0.05$). It should be noted that no statistically significant difference was observed between the level of inclusive tourism between budget hotels and 3-/4-star hotels ($p > 0.05$). The same applies between 3-star hotels and budget/4-star hotels ($p > 0.05$). Again, no difference in the ratings of inclusive tourism was noted between 4-star hotels and budget/3-star hotels ($p > 0.05$).

Discussion

The primary aim of this study is to identify the perceptions of travellers with disabilities regarding inclusiveness in the design of various hotels in India. Understanding such perceptions will serve as a great source of knowledge for service providers to decide on the design and planning of hotels. Furthermore, it will help policymakers take the necessary action that supports inclusiveness and promotes accessible tourism in India. The results of this study disclose that in budget hotels, there is an inadequate provision for necessary shower chairs, and the design of sanitary fitting and furniture in the hotel guest room was considered inappropriate. Moreover, PwD perceive that accessibility is poor due to lack of accessible emergency exits and parking spaces. In other words, it can be argued that the overall level of inclusiveness was poor in budget hotels. In addition, the availability of artificial and natural lighting and the size of corridors in these hotels were rated in average by the PwD. In 3-star hotels, lack of provisions for shower chairs, handrails, and accessibility to outdoor landscape areas were rated poor for inclusiveness. In 4-star hotels, parking areas for disabled individuals and inadequate signage were rated poor. The mobility options available for hotel guests are comparatively better in 5-star hotels, which include the size and space of lifts, mobility options within the hotels, and access to the landscape. The assistance provided by the hotel staff was satisfactory only for the users of the 5-star hotel category. The guests who opted for 5-star

hotels reported better mobility as compared to those of other hotels. In these hotels, the dining infrastructure is also more accessible and comfortable.

In answer to the question concerning independence between inclusiveness and the hotel type, the results show that the former is independent of the latter. In terms of the inclusiveness of hotels, only the 5-star hotels were considered to be inclusive. Budget hotels, 3-star, and 4-star hotels were not fully inclusive for all respondents. The level of inclusiveness in budget hotels, 3-star, 4-star hotels was reported to be very poor and invariably the same. However, 5-star hotels received positive ratings for inclusiveness, and this was invariably different from that of the other hotels. This study's results strongly conclude that 5-star hotels offer more inclusive facilities to travellers with disabilities in comparison to other hotels.

All hotels, irrespective of their star category, should be inclusive, barrier-free and accessible. The concept of universal design, if followed by hotel managements for their design and planning, can help to reduce barriers for domestic and international tourists with disabilities who are motivated to travel in order to experience the rich cultural heritage of India.

Most travellers with disabilities want to travel independently (Shi et al., 2012). Thus, reducing barriers in hotels would encourage and motivate their travel. Furthermore, the employment of trained staff can address the barriers pertaining to communication with users to ensure that they experience comfort. From the perspective of hotel managements, guest satisfaction can be enhanced if the hotel design, as well as services correspond to users' requirements. The fact that the majority of tourists did not travel independently indicates that such barriers are the causes that impeded their travel.

Moreover, this research asserts that the notion of 'grey tourism' associated with elderly people is becoming popular in India. As stated by Persson, Henrik, Yngling, and Gulliksen (2014), designing accessible interfaces for older people, with increased requirements for accessibility, is similar to and

as important as addressing the cognitive, physical, and sensory functions of travellers with disabilities. Encouraging accommodation service providers to adopt an inclusive design and plan their hotels will offer great opportunities for a new tourism market in India. Sibi (2017) observes that efforts to make travel destinations accessible to all will encourage local economies and impact the travel market.

Policy Implication for Inclusive Hotel Design

The Ministry of Tourism, Government of India, (2015) has taken various initiatives to promote tourist facilities, which are barrier-free, thereby encouraging the concept of new accessible tourism. As specified by the said ministry, the conditions for making hotels accessible to differently abled individuals have been included in the guidelines for approval and classification of only 4- and 5-star category hotels. One of the aims of this study is to propose a set of guidelines for policymakers and service providers. The guidelines suggested below are based on the literature review as well as the results of the quantitative analysis conducted by this study. The researchers of this study propose seven strategies to make all the categories of hotels in India inclusive and barrier-free, which are as follows:

- The concept of universal design should be made mandatory for all new hotels, so that they are accessible for all persons with or without any disability, old age travellers, and those with special needs.
- Remodelling of existing hotels that lack inclusiveness should be encouraged to make them barrier-free. For example, installation of foldable ramps at entrances or replacement of the existing furniture of a reserved hotel room for PwD.
- Policymakers may introduce an incentive scheme for existing hotels in the form of a reduction on taxes and subsidised credits to renovate existing infrastructure.
- Policymakers should come up with an incentive program to train employees to give support to PwD. Hotels themselves may formulate a reward system to motivate and recognize the staff who support PwD.

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- The Ministry of Social Justice and Empowerment must provide a set of guidelines for hotel designs of all hotel types.
- A design audit of hotels for inclusive design should be performed on a regular basis for all hotel types.
- Collection of feedback from tourists with disabilities, both local and international, during check out will help service providers ensure continuous improvement in terms of inclusive design.

Design Implications for Inclusive Hotel Design

This research recommends that designs of not only rooms, but entrances, parking, lobbies, lifts, corridors, restaurants etc., should adhere to the principles of 'ergonomics' in addition to anthropometric data to fit human dimensions.

Ergonomics is a scientific discipline related to the understanding of interactions between humans and other elements or systems, and to the application of theories, principles, data and methods to design in order to optimise human well-being and overall system performance. (Dos Santos & De Carvalhob, 2012)

The overall space planning shall provide an opportunity for barrier-free movement in the hotel premises to all users and encourage them with respect to independent accessibility. The entry and exits should have comfortable slopes with ramps and handrails. Moreover, the existing budget hotels can develop cost-effective solutions with temporary ramps to ensure accessibility and can remodel existing spaces through spatial design intervention. The width of corridors, size of lifts, detail design of furniture in hotel rooms, design of toilets, design of various amenities such as restaurant, swimming pool, and other recreational facilities should follow accessibility standards. Hotels should also allocate funds in their budget progressively to manage the substantial cost for renovation.

The choice of materials for hotels contributes to users' comfort, and non-slippery flooring solutions will be the best fit for all in this regard. Hotel rooms should be designed in such a way that they are spacious for all guests

and can be used with ease and comfort for any movement, including turning radii of wheelchairs and any other specialised requirements. An inclusive hotel design is flexible as well as adaptable and permits ease and comfort to all users regarding every detail concerning furniture and accessories for usage. Consideration of human factors such as arm strength and maximum reach of hand in the hotel design creates an inclusive environment for hotels to have more agility in satisfying the requirements of all guests (Wazzan, 2015). Therefore, the research recommends that an inclusive hotel design should be adopted, irrespective of the category of hotels, in order to accommodate and satisfy the needs of all users.

Conclusion

Current research supports fostering an understanding among all categories of hotels about the needs of travellers with disabilities. This study contributes towards building an understanding regarding the level of inclusiveness of the existing hotels in India as perceived by PwD. Furthermore, its findings are important for policymakers and service providers with regard to the designing and planning of inclusive hotels, which can be made available to PwD irrespective of the category of hotels. Affordability is an essential factor for tourists. Hence, the hotel industry should provide an inclusive hotel design for budget hotels in order to encourage the tourism sector of India.

However, this study is not free from certain limitations, similar to any cross-sectional study. Its comparatively small sample size coupled with non-disclosure of income and occupation by several respondents are a few limitations, which restrict the development of better understanding about the role of income and occupation on their choice of hotels. Non-control of the confounding impact of the economic reasons that are likely to influence the travel choices of PwD is another limitation of this study. However, this study is the first of its kind, which measures the perceptions of travellers with disabilities specific to various types of hotels in India. Though the paper focuses on hotel design and planning, the concept of accessible tourism is

important for catering to the overall mobility and independence of disabled individuals in every aspect of the built environment, which includes travel to tourist destinations and infrastructure that is accessible to all.

This study opens many new avenues for further research through its findings. Existing hotels in India, which include budget, three and four star hotels are lacking in implementing mandatory requirements of PwD, which was introduced in the year 2010 itself by Hotel and Restaurant Approval and Classification Committee (HRACC). It reveals the existence of some barriers in implementing inclusive hotel design by the service providers, execution and auditing by the HRACC. It is imperative to undertake a study on various issues and the barriers met by both the service provider and the government to augment the barrier-free hotels in India.

Acknowledgements

We acknowledge the participants of the survey conducted in this study. We thank Sunita Sancheti and Harshad Shinde for their valuable insights and support. Further, we would like to thank the two anonymous reviewers for their valuable suggestions to improve the quality of this research.

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