

Investigating the Accessibility of Physically Disabled Individuals in Corporate Offices: A Case of Dhaka City

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Abstract—The purpose of this study is to bring light to the current state of the working environments in the corporate environment and other such institutions with a particular focus on the Bangladesh National Building Code (BNBC) and its guidelines for accommodating the physically disabled. Data were collected via semi-formal interviews, site visits and focus groups conducted using a preset questionnaire as the guidelines. After conducting surveys at corporate offices of 20 organizations from major commercial sectors in Dhaka city, the auditing showed many inadequacies, as aside from the larger corporate offices, the offices have little to no accessibility for the physically disabled. This study hopes to shed light on the fact that the existing BNBCs lack of emphasis on ensuring the accessibility of the handicapped in corporate buildings in the hope that, in the future, the physically disabled will have greater opportunities at being productive members of the workforce.

Keywords—Person with disability, PWD, corporate buildings, Dhaka City.

I. INTRODUCTION

ACCESSIBILITY is a precondition for the full realization of the rights and inclusion of people with disabilities in the society. It can also be understood as the provision of flexible facilities and environments, either virtual or physical, to accommodate each user's needs and preferences. For persons with disabilities (PWD), this may be any place, space, item or service that is easily approached, reached, entered, exited from, interacted with, understood or otherwise used. The United Nations also mentions that while it is not only an inherent right of PWDs, but it is a means of ensuring their ability to exercise all rights and fundamental freedoms and are positively empowered to participate among society in general on equal terms with all other people [7].

According to Barnes [2], “discriminatory action against the physically or cognitively less able in some form or other has been an integral part of almost every society throughout history. And although it is undoubtedly true that the more extreme forms of negative discrimination which were synonymous with earlier epochs, such as violent persecution and infanticide have largely disappeared, the fact remains that the quality of life experienced by the majority of handicapped people in modern society is considerably lower than that

enjoyed by their able-bodied contemporaries.”

As per outlined by the Equality and the Human Rights Commission [4], there are six main types of disability discrimination:

- **Direct discrimination** - This happens when someone treats the physically disabled worse than another person in a similar situation because of disability, such as overlooking a more qualified candidate due to prejudices regarding the amount of time they will be able to work.
- **Indirect discrimination** – This is when an organization has policy(s) in place that are geared against disabled people as opposed to people who are not disabled. Indirect disability discrimination is considered illegal behaviour if the organization or employer is unable to prove that they have sufficient reason for the policy and it is proportionate (objective justification).
- **Failure to make reasonable adjustments** – This is when the employer or organization does not make a reasonable adjustment, such as providing parking for the physically handicapped.
- **Discrimination arising from disability** – This is when a physically disabled employee is being treated badly because of something connected to their disability, such as having an assistance dog or needing time off for medical appointments.
- **Harassment** – This is when someone treats the physically handicapped employee in a way that makes them feel humiliated, offended or degraded.
- **Victimization** – This is when the physically handicapped employee is treated badly because they made a complaint of discrimination.

Positive, dynamic advances have been taken by establishments like the UN towards enhancing conditions for the physically incapacitated. One noteworthy advance was reclaimed in 2013, when the UN Secretary-General designated Excellency Lenin Moreno as his Special Envoy on Disability and Accessibility, who has chosen to put more prominent accentuation on the advancement of availability and incapacity consideration being developed, incorporating into the Sustainable Development Goals. Policies were put forth with the purpose of promoting built environments and facilities and services that are accessible and inclusive for all [6].

According to Soltani et al. [5], it is important that all patrons, including persons with a disability, has access to and use of the internal and external facilities associated with the building or facilities, and it is something that should be addressed during the design phase. For wheelchair users, prioritization should be made on providing routes that do

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avoid or at least limit obstacles and hazards, and it is not problematic to people, including those who have impaired sights or mobility (and thus are using walking aids or wheelchairs). The authors also mention that there must be at least one accessible route provided within the building or facility from accessible parking spaces and passenger loading zones; open roads and walkways; and open transportation stops to the available building or office entrance they serve, with slopes, reasonable toilets and handrails to furnish openness to people with versatility related incapacities.

A. The Disabled in Bangladesh

According to the Bangladesh Legal Aid and Services Trust, a.k.a. BLAST [3], Bangladesh has a significant disabled population, at around 10%. This is backed up by the Bangladesh Bureau of Statistics (BBS) who stated that the number was at around 9.07% back in 2011 [2]. The World Bank goes even further, suggesting that 31.9% of the population was disabled at the time [10]. However, the 2011 National Population and Housing Census [2] seemed to indicate that the disabled population is around 1.4%, which seems unrealistic. The aggregate evaluated populace of Bangladesh is 152.52 million [2]. The World Bank's [10] assessed 10 % compares to 13.83 million individuals with handicaps as of now living in Bangladesh starting at July 2012, which incorporates roughly 3.4 million kids with incapacities. These numbers may rise quickly, given with the present populace development rate of 1.37 % [4].

According to Ali [1], about 8 million people with disabilities in Bangladesh suffer from a range of disability types and severity (see Table I). Notable disabilities include 2.24 million suffering from physical disabilities.

TABLE I
DISABLED POPULATION OF BANGLADESH [3]

Disability Type	Percentage	Number
Visually Impaired (severe)	13.28	1,062,400
Visually Impaired (moderate)	18.72	1,497,600
Physically Impaired (severe)	16.52	1,321,600
Physically Impaired (moderate)	11.48	918,400
Hearing Impaired (severe)	1.5	120,000
Hearing Impaired (moderate)	17.5	1,400,000
Speech Impaired (severe)	1.29	103,200
Speech Impaired (moderate)	1.71	136,800
Mentally Impaired (severe)	3.08	246,400
Mentally Impaired (moderate)	3.92	313,600
Multiple Impairment	11	880,000
TOTAL	100	8,000,000

Ali [1] states that incidences of disability are more common in rural areas, with 6 for every penny of individuals living in country zones experience the ill effects of incapacity in contrast with 4 for every penny of those living in urban zones, and 14 for each penny against 3.4 for each penny between high and low salary earners. There are different explanations behind handicap, which include: hereditary qualities, birth entanglements, maternal hunger, kid ailing health, frequencies of specific illnesses, absence of mindfulness, absence of early

discovery, absence of access to legitimate treatment, and neediness. Also, there seems to a correlation between illiteracy and unemployment in families that have disabled members. Ali [1] also mentions that about 60% of the disabled work force can carry out their responsibilities without notable hindrances, while about 25% are hindered due to their mobility issues. Only 3% of the disabled population received assistance from government or a non-governmental organization.

II. BUILDING CODES

Building Construction Act 1952: The Act gave controls with respect to the tallness of structures in urban regions. The demonstration likewise given to counteractive action of indiscriminate development of structures and uncovering of tanks which are probably going to meddle with the arranging of specific zones in Bangladesh and empowers government through Section 16 to make any significant principles for completing the reasons for this Act.

The Town Improvement Act (1953) is “an act to provide for the development, improvement and expansion” of regional capital cities, their local municipalities and “certain areas in their vicinities” [6]. The goal of the act is to:

- 1) Develop, enhance and extend city of Dhaka by opening up congested zones
- 2) Lay out of modifying boulevards
- 3) Provide open spaces with the end goal of ventilation or amusement
- 4) Construct or demolish buildings
- 5) Acquire land for the said reason and for
- 6) Re-house people uprooted by the rejection of change plans.

III. FINDINGS

A. Methodology

Nature of Study: The study was conducted using both qualitative and quantitative approaches.

Area of Study: The area of the study was Dhaka city which is the capital city of Bangladesh.

Population: The population for the study is the PWD and the corporate offices in Dhaka city.

B. Sample and Sampling Technique

PWD in Dhaka city will be classified into 4 major categories; Persons with visual impairment, Persons with hearing impairment, Persons who are wheelchair users and Persons with limited walking abilities (with crutches). For each group, six persons will be selected for interview and focus group discussion (FGD). Besides, ten corporate offices will be selected for the study which will be audited using a survey questionnaire.

C. Tools

- A semi-structure interview schedule,
- A FGD guideline and
- A survey questionnaire

- For the purpose of this study, a total of 20 head corporate offices located in Motijheel, Mogbazar, Tejgaon and Gulshan were randomly selected and audited for their accessibility for the physically disabled.

Medium to large corporate offices possessed the capacity needed to allow passage of and turning space for wheelchairs as they tend to be situated in custom buildings, while smaller, rented corporate offices lacked the space. 70% of the offices had beveled sections at some (but not all) doorways (Fig. 1). However, none of the existing offices had serious obstructions and floor types and quality met the standards necessary to facilitate wheelchair usage, but some lacked space in the corridors (Fig. 2). When asked, the authorities mentioned existing plans to shift to more modern locations that could provide adequate accessibility.

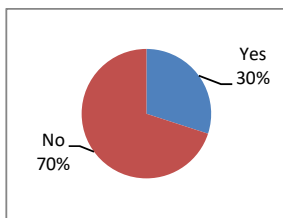


Fig. 1 Incidences of Beveled Floors

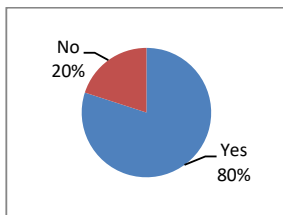


Fig. 2 Likelihood of Suitably-Sized Corridors

D. Door Data

Most of the corporate offices had similar door layouts: push-pull glass doors (several beveled as well) or sliding doors typically in the smaller office spaces. However, there were no turn style doors in any of the corporate offices audited. When asked, the representatives claimed that turn-style doors were ineffective in terms of cost and space. Therefore, only 35% of the corporate headquarters have sufficient free pushing space throughout their office premises (Fig. 3).

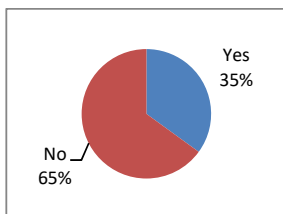


Fig. 3 Availability of Free Space at Doors

E. Railings

83% of the railings in corporate office buildings were suitable (Fig. 4), with none being present outside of stairwells

on the premises. Also, none have dual railings in the staircases. The railings are within the preferred range of height, but have no extensions at either end in any office and 20% of the offices audited have railings without rounded ends (Fig. 5). Headquarters have sufficient free pushing space throughout their office premises.

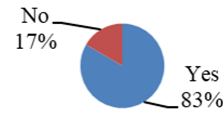


Fig. 4 Incidences of Extended Handrails

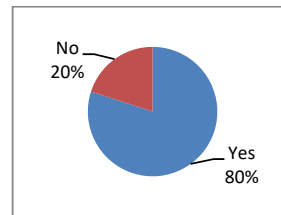


Fig. 5 Incidences of Rounded Ends for Railings

F. Stairs

As corporate headquarters tend to high quality buildings, the stairwells are sufficiently illuminated and the trades and risers are uniformed and rough, with the risers being within the acceptable range and not hollow. However, the stairs have treads are under 11 inches in all audited cases and 20% do not possess a 1.5-inch nosing (Fig. 6).

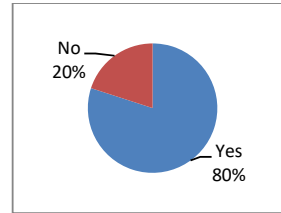


Fig. 6 Incidences of Staircases with 1.5-Inch Nosing

G. Ramp

The ramps were typically located near the main walk-in entrance of the corporate offices. Every ramp was under the 1:12 slope ratio. 60% of the ramps exceeded 4 feet (Fig. 7), and of them, 83% had suitable handrails but there were no dual-rail setups and all lack extension. Also, no ramp had suitable turning space for wheelchairs at both ends, lacked free space on cleat, push and pull side.

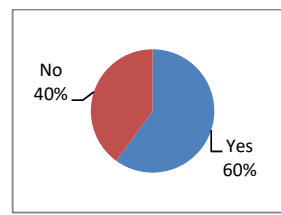


Fig. 7 Incidences of Large Ramps

H. Lifts/Elevators

There were no corporate buildings which contained horizontal lifts. However, 25% of the lifts were considered large enough to hold wheelchairs. These were typically larger headquarters where regular lifts are double as service lifts.

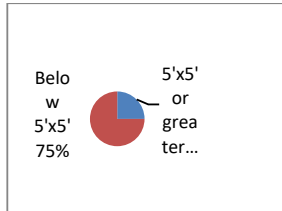


Fig. 8 Percentage of Lift size Greater or Below 5x5'

I. Washroom Accessibility

The toilets and washrooms in the corporate offices do not have any legal obligation to meet the standards for access for the physically disabled, which is reflected in the data – only 15% of corporate offices have toilets that are accessible by the physically handicapped (Fig. 9), with the water closets' spacing and fixture positioning almost never meeting the needs of the physically handicapped (Fig. 10).

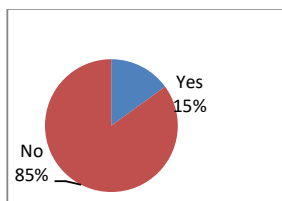


Fig. 9 Percentage of washroom accessibility

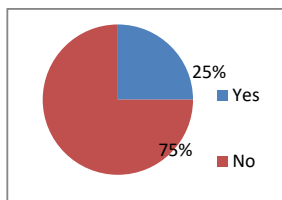


Fig. 10 Percentage of Free distance

J. Parking

As Figs. 11 and 12 show, almost all offices were found to possess sufficient and adequate parking space, with wide parking spaces and parking lifts via ramp access. The only corporate offices that lacked the facility were located in rented premises in older, more congested blocks.

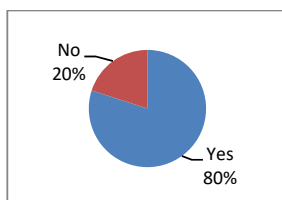


Fig. 11 Percentage of available parking

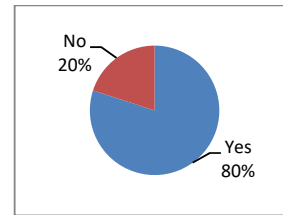


Fig. 12 Percentage of parking space width

K. Conference Spaces

In terms of having conference rooms with adequate access for the physically handicapped, every corporate office audited was found lacking. None had met the free space dimensions or wide enough seats, as they more resembled makeshift discussion rooms and were not purpose-built conference spaces. Every office commented that any and all major meetings occur outside of the premises.

Almost all corporate buildings are built to only meet the minimum standards set by the Rajdhani Unnayan Karttripakkha. Since there are no violations yet for not constructing office buildings with the physically handicapped in mind, coupled with space constraints in Dhaka city, there are little to no incentive for engineering firms tasked to construct corporate offices to provide the facilities needed. While they have ramps, lifts and some railings, not all amenities are available for the physical handicapped.

IV. CONCLUSION AND RECOMMENDATIONS

At this time, the physically disabled workforce of Bangladesh is unable to find their place in the economy due to the various barriers that limit their participation. While this may be justified in many fields, in the corporate world the limitations are supposed to be less pronounced, as their cerebral abilities should determine their worth. However, due to a lack of strategic oversight by the government institutions that set the standards for buildings, the physically disabled are being marginalized as most organizations tend to construct offices that only just accommodate the laws set by the government in the most economically efficient process possible. This leads to a loss of potentially valuable assets for organizations in the name of short-term savings.

Moving forward, RAJUK (Rajdhani Unnayan Karttripakkha, or Capital Development Authority) should look into employing updated policies which implement principles that include the needs and concerns of the physically handicapped population, such as those suggested by the United Nations Habitat Forum on Disability Inclusion and Accessible Urban Development held in Nairobi on 28-30 October 2015, in order to accommodate the physically handicapped. These include the promotion of accessibility in urban design, planning and development, setting accessible housing and built infrastructure as standard and improving the active participation of the disabled population in matters of urban development.

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