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How Artificial Intelligence Tools Assisting Persons with Disabilities (PWDs) in Global South

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ABSTRACT-Artificial Intelligence (AI) is being considered an effective ally of Inclusion of Persons with Disabilities (PWDs), and this may be extremely important to the Global South where structural inequality, meager resources, and endemic gaps in access remain limiting factors to full participation. The present paper discusses the ways AI-powered technologies can assist PWDs in developing countries in communication, mobility, education, access to healthcare, and economic involvement. The paper is based on a multidisciplinary framework, which is informed by the Social Model of Disability and the Capability Approach, in synthesizing the evidence obtained through case studies and reported implementations in South Asia, Sub-Saharan Africa and Latin America. It is revealed in the analysis that AI-based computer vision, speech recognition, smart navigation, customized learning systems, and computerized job search tools can eliminate social obstacles and enhance autonomy. Meanwhile, the article notes that the persistent limitations include poor digital infrastructure, affordability, bias in algorithms due to underrepresented datasets, privacy concerns, and sustainability. Results indicate that AI has the most significant positive impact in case it is designed and implemented in the participatory and community-based models indicating the reflection of local realities, language diversity, and cultural context. Overall, the paper finds that AI has great potential to open up possibilities and human dignity to PWDs in the Global South yet a lasting growth will require deliberate policy frameworks, ethical management and long-term investment in accessible technologies that can fit the low-resource context.

KEYWORDS: Artificial Intelligence for Accessibility; Persons with Disabilities (PWDs); Global South; Inclusive Technology; Ethical and Participatory AI

I. INTRODUCTION

The current paper will give a detailed discussion of the increasing application of Artificial Intelligence (AI) in the support of disability inclusion in the Global South settings. Instead of making AI sound as something universal, the discussion positions it as a versatile toolkit- something that can contribute significantly to the removal of barriers in case it is planned to address local realities and applied in a responsible manner. The review records improvement in communication access, mobility support, the learning and job opportunities and assistive health applications with the limits on practical implementation driving adoption also being touched. These boundaries encompass infrastructure, cost, prejudice of algorithms, and the general disparity of socioeconomic status. The gist of the discussion is that sustainable development is achieved through collaborative paradigms that bring local wisdom and experience to higher levels, such that technology enhances dignity and agency as opposed to being an objective.

II. KNOWING THE DISABILITY TERRITORIES OF GLOBAL SOUTH

Persons with Disabilities find themselves confronted with many issues across the wide socioeconomic environment that exists in the Global South. It has a lot of exclusion based on systemic oversight, stigmatization and economical marginalization. Such barriers are not merely attitudinal; in fact, they are usually woven into the physical landscape, institutional apparatus and information systems which organize everyday life [1].

A. Increased Prevalence and Poverty

The World Report on disability observes that there is more prevalence of disability in low- and middle-income countries where PWDs stand a higher chance of living in poverty. Poverty, in most contexts, not only enhances vulnerability of individuals with disabilities but also intensifies the impacts of disability, which creates a vicious circle of hardship that is hard to break unless there are policies and supports are provided.

B. Systemic Barriers

There is a low level of access to healthcare, education, social protection, and public services. Poor infrastructure access restricted the ability to use inclusive transportation, and the lack of accessible information formats (e.g., Braille, sign language, screen-reader-friendly platforms) still makes many PWDs marginalized to total inclusion.

C. Shortcomings of Classic Assistive Technology

Traditional assistive devices (e.g. wheelchairs, hearing aids) are often costly, hard to fix locally and customized to local conditions. Individually, mobility devices that fit well in urban pavements can be ineffective in rural areas

which have rough or unpaved roads which restrict independence and strengthen dependence.

D. Policy and Awareness Gaps:

Such struggles are usually worsened by the poor implementation of policies and low awareness of the people on the rights and capabilities of people with disabilities. In some places where they exist, a lack of enforcement and funding is common, even though it would have worked [2].

III. ARTIFICIAL INTELLIGENCE AS A NEW SOLUTION CATEGORY

In this intricate terrain, AI has become a prospective form of inclusion devices especially since most of the AI capabilities can be offered via broadly spread digital technology. The usefulness of AI in this regard is more about the possibility of developing useful, scalable systems that can assist individuals in navigating environments that do not have access.

A. The Process of Augmentation rather than Replacement:

The most significant role of AI is that it can complement abilities, enabling people to communicate, move, learn, and receive services more autonomously, not substituting human functions and even trying to fix the disability.

B. The Opportunity for Mobile-First:

The application of AI in mobile devices has potential due to the high rate of smartphones penetration in most areas. Smartphone models of deployment and cloud services enable assistive technology to no longer involve expensive, specialized computing devices but rather a set of features within easily accessible software integrated on the humo drum.

C. Multifunctional Tools:

The same smartphone, now in visual assistant, communication assistant, and navigation assistant and learning assistant. This versatility may be particularly significant in resource-constrained environments, where it is not feasible to buy several special assistive tools.

IV. ANALYTICAL FRAMEWORK AND RESEARCH METHODOLOGY

The given paper involves the multidimensional approach to assess the utilization of AI in practice and the social circumstances, which determine the overall effects of AI. The goal is to provide a fair evaluation of both the honest potential of AI and does not lose in the possibilities that restrict real-world utility [3].

A. Multi-Region Analysis:

The discussion is based on the case studies and written experiences in South Asia, Sub-Saharan Africa, Latin America, as well as places to identify common patterns and reality on the ground, including the linguistic variety, the different policy conditions, and the infrastructural disparities.

B. Human-Centered Focus:

The paper favors lived experience and community-based interventions, such as those carried out by and with Disabled Persons Organizations (DPOs), so that the analysis would not be based on abstract concepts and theoretical formulations.

C. Critical Assessment:

Instead of asking what AI is capable of, the framework also poses the following question: Who benefits, under what circumstances and at what cost? This covers analysis of morals, sustainability, management, and application facts.

V. THEORETICAL UNDERPINNINGS: AI AND THE SOCIAL MODEL OF DISABILITY

Between Medical and Social and Technological Models:
The importance of AI to inclusion of disabled individuals can be most comprehended in the light of the Social Model of Disability, which contends that disability is mainly caused by the societal barriers, rather than people alone who are impaired. The barriers in this perspective include environmental, institutional and informational barriers. The AI tools can directly interfere with such a dynamic, assisting in eliminating barriers to participation. As an illustration, the speech-to-text technology does not work to cure deafness; it minimizes the communication barrier that exists due to the designed environment that is deaf-friendly. It is a move in the direction of the focus of Medical Model on deficit and cure to the model of the technological enablement of empowering inclusion and access [4].

A. AI as a Mechanism of Eliminating Societal Barriers:

AI may serve as a dynamic mediator between people and closed spaces. It is able to convert visual data to auditory information in the case of the blinds, auditory information to textual in the case of the deaf, as well as suggest routes that are easily accessible to wheelchair users. These tools can eliminate the need to use human intermediaries and costly and specialized infrastructure when used effectively. Practically, the responsibility of accommodating the burden cannot be placed on the individual but on the systems, which are meant to facilitate the access which is much in line with the Social Model of eliminating barriers instead of repairing bodies [5].

B. The Human Development and Capability Approach:

The Capability Approach by Amartya Sen measures the well-being in terms of the actual possibilities that individuals have to live the lives they appreciate. AI tools may be viewed as the devices that increase the possibilities of PWDs. An AI-based navigation system will provide an ability to operate safely independently; an AI-based literacy tool will provide educational opportunities. In this view it should not measure success as indicated by technical accuracy out of increased practical freedoms, which can allow meaningful "beings and doings" that enhance autonomy, participation, and human development.

VI. CONTEXTUAL FRAMEWORK: THE GLOBAL SOUTH ENVIRONMENT

A. Disability Demographics and Socioeconomic Realities:

Socioeconomic settings where such tools are likely to be used must be understood to assess the role of AI in a responsible manner. Disability in most of the Global Souths is not only determined by health status but also poverty, informality and structural inequality. These facts condition the people who have access to technology, the ways, in which it is used, and the possibility of its maintenance.

B. Concentrated Need:

In developing countries, an estimated 80 percent of the world population with disability. This concentration brings out the amount of unmet need and the possible effect of solutions which are affordable, scalable and context appropriate [6].

C. Intersectional Marginalization:

Disability often cuts across gender, rurality and poverty resulting in compounded exclusion. As an illustration, women living with disabilities in rural areas might be co-experiencing a compounded burden that restricts access to education, technology, health care, and jobs in ways that are significantly different than that of urban men with similar disabilities.

D. Structural Inequalities:

Impairment alone can hardly explain these disparities. In fact, they dwell upon imposed structural inequalities. The successful AI interventions should thus be crafted keeping such stratified limitations in mind, otherwise they will only propagate the existing inequities instead of mitigating them.

E. Mobile Technology Infrastructure and Accessibility:

The emergence of mobile technology in a short time has provided a viable assistance innovation platform. Nevertheless, the digital ecosystem in the Global South regions is not even and access tends to be a reflection of the larger trend of social and economic inequality [7].

F. Growing Penetration:

The use of Smartphones is increasing and Android phones that are cheap have increased accessibility to mobile computing. This development makes smart phones a viable channel of delivery of multi-functional assistive devices particularly in the environment where dedicated devices are not affordable or even available.

G. The Connectivity Gap:

Even though there is an increase in mobile broadband coverage, there still exists a usage gap, as it is fueled by affordability, low levels of digital literacy, and patchy network coverage. The expenses on data usage may take up an unequal portion of the household income and render cloud-reliant AI applications hard to operate on a regular basis. In rural or under-served regions, the reliability is also a limiting factor to the functionality of real-time or always-on capabilities.

H. The Android Low-cost Opportunity:

Low-end devices are widely availed to the market which opens new possibilities-but with the condition that solutions should be optimized to the hardware that the majority of people use. Most of the devices available in the market have a limited RAM, less processing power, and lack of storage. This renders lightweight design to be vital such as offline feature, proficient frameworks and cautious optimization of performance to low-resource conditions [8].

I. Policy Animalization and Disability Rights Paradigms:

Although numerous states of the Global South have reinforced their countries disability rights commitments, legal and practical differences between the law and its implementation are very high. Policy and governance consequently determine whether access to AI facilitated accessibility will be available on a wide scale or remain restricted to pilot projects.

J. CRPD Adoption:

The Global South countries have mostly signed the United Nations Convention on the Rights of Persons with Disabilities (CRPD), which frames the introduction of the access to information and communication technologies as a right. This forms a solid normative basis of promoting AI-enabled access and inclusive design.

K. National Assistive Technology Policies Department:

One of the policy gaps that keeps reoccurring is the lack of national frameworks that acknowledge the lack of software-based AI tools as valid assistive technologies. These solutions are not so formalized that they cannot be listed in the public procurement systems, education budgets, or health reimbursement pathways, thus depriving those who would need them the most of access.

L. Information Security Laws:

Data protection law is weak or is not enforced uniformly in most of the settings. This poses a greater threat to users particularly when AI technologies acquire sensitive data about users including location, audio, images, or health-related indicators. Enhanced privacy governance is then not an option, but a question of a secure and ethical deployment [9].

VII. PRACTICAL INTERVENTIONS OF TECHNOLOGY

A. Radically Remaking Communication Ecosystems.

- Visual impairment Computer Vision applications- In the case of blind and low-vision users, AI-based computer vision systems are becoming more like portable visual interpreters and have the ability to process complex environments into usable information using smartphone cameras. These tools to a great extent become a virtual visual layer which facilitates real-time perception and decision making.
- Core Functions- Real-time text reading (with some handwritten text), currency recognition, product and label recognition, and simple person recognition can be done with the help of Microsoft Seeing AI and Google Lookout. This enables users to carry out ordinary activities like reading a banknote, familiarizing

themselves with packaged items or knowing when a familiar person is in their vicinity without involving other people [10].

- The Need for Localization- Training data and local adaptation is very important in performance in the Global South. The failure of systems can be caused by the meeting with unknown currency designs, informal signage, local packaging, or culturally specific visual cues. A Western-tailored application, such as one, will not perform well in an informal market or local-made products.
- Advanced Features- Richer social and environmental awareness can be possible by providing emerging functions, including detection of obstacles at head and ground level, interpretation of facial expression, emotion recognition, and color identification. These abilities are significant both in navigation and in the social interaction and trust in daily communication.

B. Auditory Processing and Speech Recognition Solutions:

In the case of deaf and hard-of-hearing communities, AI-powered communication tools can help to substantially decimate communication barriers, which lead to educational, social, and workplace marginalization [11].

- Speech-to-Text Transcription- Google Live Transcribe and similar applications can offer real-time speech-to-text services that enable one to contribute to a discussion, classroom, or workplace. The precision has also been enhanced significantly even in fairly noisy scenarios making these devices even more practical in daily life.
- Sound Awareness- Certain devices can now identify and categorize environmental noises, e.g. doorbells, smoke detectors, car horns or screaming babies and send notifications. In things such as safety, caregiving, and independent living, this can be a real benefit if there is less formal accessibility infrastructure in an environment.
- Speech Synthesis- There are also improved text to speech systems. It can be reduced with more natural voices, the choice of a different language, and culturally suitable accents and enable non-verbal people to be more articulate and genuine to themselves. Leaving behind the robotic, monosyllabic speech will not only be cosmetic, it will also have a direct impact on social acceptance and the quality of communication.

VIII. IMPROVING MOBILITY AND SPATIAL NAVIGATION

A. Smart Wayfinding and Intelligent Navigation Systems:

Artificial intelligence can make traditional navigation more user-friendly, adding a disability context to it. Instead of merely finding the shortest path, accessibility-conscious navigation takes into account the sensorial feel of the travelling experience what is safe, possible, and available to an individual with mobility or vision complications.

- Accessibility Mapping- Initiatives like OpenStreetMap accessibility mapping use walk-throughs from a large community of contributors (their work is often combined with validation using artificial intelligence technology if possible). Sahara Maps has completed a project with Obscura making genome-wide association studies more efficient. This crowdsourced model becomes especially significant in the environment when the official accessibility information is incomplete or even absent [12].
- Predictive Routing- Scientists are creating models that envisage short-term dangers like building, seasonal flooding or congested walkways. In cities under fast changing infrastructure and permeated by informal barriers, guidance through predictions may be as relevant as static mapping.
- Public Transport Integration- Cities such as Sao Paulo and Bangalore have pilot projects on AI-assisted real-time transport accessibility (i.e. ramp accessibility, elevator information, audio alerts). These functionalities may enable users to plan in a realistic manner instead of realizing the obstacles on their way half-way [13].

B. State-of-the-Art Obstacle Detection/Avoidance Systems.

Beyond tools using phones, a burgeoning set of mobility aids use sensors in combination with AI processing to enhance obstacle detection and navigation aid.

- Enhanced Mobility Aids- Smart canes like the WeWalk smart cane or Sunu band are able to use ultrasonic or sonar sensors to detect obstacles which could be missed by the traditional cane like low branches or bulging signage. These tools need little or no training and this facilitates implementation in low-resource environments.
- Multi-Sensor Fusion- LiDAR, cameras, and ultrasonic sensors can be used in an experimental system that is capable of detecting in moving and still objects in a complex environment like a crowded market. These systems can also be useful by classifying objects and forecasting motion, that is, differentiating, e.g. a stationary bench and an oncoming bicycle, the latter may be a valuable warning and guidance, rather than just a proximity warning.

IX. EDUCATIONAL AND ECONOMIC EMPOWERMENT

A. Individualised Learning Platforms and Tools

Disability support services are few and the learning classes are mostly big in most education systems in Global South. Personalized support in these scenarios can be provided by AI and acts as a lightweight tutor, accommodating but not necessarily involving a specialist all the time.

- For Learning Disabilities- In the case of dyslexia and other learning needs, capabilities would be able to reform texts, offer vocabulary assistance, and offer text-to-speech. Applications like Immersive Reader by Microsoft bundle most of these features into universal classroom tools, which follow the principles of Universal Design of Learning (UDL) and eliminates the stigma associated with accessibility features by ensuring that they can be widely used.
- For Attention Related Issues- AI can be used to facilitate work by dividing it into smaller tasks,

providing structured reminders, and facilitating organization. These functions have the potential to offer scaffolding in real-time, which is particularly useful in settings that have limited resources and teachers are unable to support students on an individual basis on a continuous basis.

- Localized Implementation- There is a hint of evidence in the rural Indian school implementation experiences that the literacy results are better when AI reading aids are used in local languages. The success is, however, contingent on the models being trained on local phonetics, grammar and dialect variation an area where there are still large gaps and further development is required [14].

B. Access to Employment and Digital Economies:

The digital economy is growing, which means that PWDs have a chance to overcome physical barriers and local labor markets, characterized by discrimination. AI can be used as an enabler, which includes skill building, access to the workplace, and entrepreneurship.

- Skill Development- Individual learning paths can be constructed with the help of AI-enhanced systems in digital marketing, coding, and data analysis, among other areas. Intentionally made as inclusive, they can be adjusted to the content delivery, such as captions to deaf people or audio-focused interfaces to blind people [15].
- Intelligent Job Matching- The use of AI-based systems can match candidates with job opportunities in the case of remote work, as well as assist employers in recognizing what can be done to accommodate them. These platforms have the potential of eliminating geographic limits and prejudice that tend to be a key in hiring. Such organizations like Disability:IN are involved in such initiatives.
- Entrepreneurial Support- In the case of entrepreneurs having disabilities, accounting, inventory, customer services, and communication AI tools can help ease the operational pressure. Kenyan case studies of entrepreneurs who are blind and use AI-based screen readers and voice assistance to carry out e-commerce and interact with their customers provide insights into feasible ways to achieve independence and generate revenues [16].

X. ARTIFICIAL INTELLIGENCE IN HEALTHCARE AND AUTONOMOUS LIVING

A. Easy Health Information and Triage:

Availability of credible healthcare information has been a significant obstacle to most PWDs. It can also be addressed with the help of AI tools that facilitate gaps with user-friendly interfaces, simplified language, and simple triage assistance.

- Symptom Checkers and Triage- Voice assistants and chatbots have the potential to offer health advice on the vocal and understandable platforms. Health information can be made more usable by voice navigation and pictograms used with users whose literacy level or intellectual disability limits their usability.
- Medication Management- Mobile applications based on AI have the ability to recognize pills through a camera, remind users (audio, vibration, visual) with custom reminders, and alert about possible interactions. These are aids in compliance and safety in chronic disease management [17].

B. Daily Living and Personnel Assistant Applications:

More and more AI is integrated into the tools which facilitate everyday life and minimize the necessity of continuous human support.

- Smart Home Integration- After all, even in low-resource settings, simple IoT devices, such as smart lights, plugs, or locks, can be controlled by voice using a smartphone. This can significantly decrease the dependency of caregivers to assist users with mobility limitations in performing the routine tasks.
- Context-Aware Reminders- The AIs may be trained to adopt habits and provide active suggestions (ex: reminding a person with poor memory to switch off a stove, or reminding someone to get an umbrella when it rains). These attributes encourage safety and independence at the house.

XI. TRIALS, CASE STUDIES AND REGIONAL ANALYSIS

A. Artificial Intelligence Sign Language Translation in Kenya.

Elsewhere in Kenya, local efforts are underway to establish an AI-based translation system to convert Kenyan Sign Language (KSL) into spoken Swahili language or English, one that is developed by locals in cooperation with the Deaf community and researchers. The system can be used to communicate in any environment by using computer vision to recognize sign gestures detected by a smartphone camera and producing either speech or text on the screen, which is useful in places like hospitals, banks and government offices. The fundamental lesson that was learned during this project is the significance of linguistic specificity: the grammar and vocabulary of KSL are very different compared to American or British Sign Language. Effective model training thus demands large video data sets of various KSL signers in real world scenarios. The main issues are the possibility to get enough representative data, the possibility to control the bias among signer demographics, the possibility to guarantee the credible work in the variable lighting and background conditions typical of local conditions [18].

B. Wheelchair Friendliness in Brazil:

In Sao Paulo, Brazil, binding with AI and Model Rights groups, a university and a high-touch disability rights organization have been utilized on how AI and community participation can jointly scale accessibility mapping. Images of urban features, including curbs, ramps, and entrances are taken by volunteers- with a mobile application. These images are then analyzed by an AI model to classify its accessibility characteristics (e.g. "steep ramp", "missing curb cut"). The data thus obtained are made available in a map that is publicly available and is user-friendly to guide wheelchair users in planning their trips. The method shows how the advantages of

crowdsourcing together with automated analysis may be achieved especially when official accessibility data is incomplete or old-fashioned. One of the lessons of the initiative is the importance of defining accessibility in locally meaningful ways, taking into consideration informal routes and adaptive practices, which users are using in their daily mobility [19].

C. Regional Analysis: Approaches in South Asia:

South Asia with its high population density and variety of languages offers an opportunity and a challenge in terms of inclusion resting in AI. Multilingual speech-to-text is also under consideration in a number of government-led initiatives in India to enhance the avenue of costless access to public services by Divyangjan (persons with disabilities). In Bangladesh, in contrast, grassroots technology centers have paid attention to low-cost and offline ai tools to participate in the literacy of children with intellectual disabilities. It is argued that bigger nation states tend to pursuit of central planning, policy-based models over smaller or resource-constrained settings might give up to nimbler, community-based innovation. The common problem in the region is the digital divide and the necessity to develop the AI models that would be able to maintain the large diversity of languages and dialects to reach the meaningful results and effectiveness [20].

XII. CHALLENGES IN IMPLEMENTING AND ETHICAL ISSUES

A. Online Infrastructure and Social Economics:

The success of assistive technologies based on AI eventually relies on the simple availability of devices, connectivity, and power. The digital divide serves as a major inclusion gatekeeper in most Global Souths.

- Affordability Constraints- The advantage of AI is not accessible to people, who are unable to afford smartphones or have access to a stable internet connection. The cost of data is more than what is affordable, which is why it becomes unaffordable to use cloud-based services on a regular basis.
- Energy and Power Reliability- Poor power supply, especially in the rural and peri-urban settings, reduces the use of devices. This fact highlights the necessity of the low-power consumption and other charging strategies such as solar-based ones.
- Digital Literacy Gaps- Numerous programs on digital literacy do not include a disability inclusive design. Potential users may fail to utilize existing tools, no matter of quality of technique, unless there is customized and convenient training.

B. Algorithms Bias and Representation Issues:

The performance of AI indicates the information to be trained on. Those data are not indicative of local languages, accents, environments, or cultural practices, and in that case, the accuracy of the system reduces, at times with grave implications [9].

- Western-Centric Datasets- Models that have been trained mostly on Western speech, imagery and patterns of interactions tend to have low performance in Global Souths. Voice recognition software, e.g., can have difficulties with local accents or even code-switching prevalent in a country, e.g., Nigeria or India.
- Contextual Misclassification- Computer vision can also not identify local prevalent mobility assistances, informal infrastructure, or cultural artifacts. These failures diminish utility and would cause safety hazards.
- Community-Led Alternatives- What the grassroots can do is illustrated by initiatives such as Masakhane that specializes in natural language processing of African languages. Nevertheless, such initiatives are still underinvested in in comparison with mainstream AI development, which points to the necessity to invest in locally-based data ecosystems over time.

C. The Data Privacy, Agency, and Cultural Appropriateness:

The AI assistive technologies tend to be based on continuous gathering of sensitive information, such as location, audio, pictures, and health-related indicators. This poses great ethical issues.

- Privacy Risks- PWDs are at increased risk of having their personal information used against them in places where there is a weak data protection system. Any sensitive information disclosing disability status or daily activities may be used to discriminate or spy on the person in case security is not sufficiently in place [21].
- User Agency and Co-Design- Ethical implementation is based on the principle of nothing about us without us. Congestive co-design with Disabled Persons Organizations (DPOs) will ensure that usefulness of tools will meet actual requirements, build trust and result in lasting usage.
- Cultural Sensitivity- The design decisions should be determined based on the local norms and expectations. Indicatively, the speech-generating devices ought to apply culturally acceptable language, tone, and addressing. The tools which do not take into consideration these factors can be technically operational but socially unacceptable [10].

D. Environmental and Long-term sustainability.

The implementation of AI has environmental implications, which would be associated with hardware life cycles and high-energy data processing. Sustainability is of concern in areas where climate change has already been disproportionate.

- E-Waste Management- Solutions that use smart phones should be supported with responsible e-waste. Devices disposed without secured recycling systems may serve as a threat to the local environments and communities, and the PWDs are no exception.
- Energy-Efficient Design- Increasingly, there is a call to develop Greener AI solutions that have fewer computational requirements as well as can be executed on low power machines that are more viable where power is not a guarantee.
- Maintenance and Longevity- Long-term support is also a factor of sustainability. Those solutions without update, maintenance, and user support plans are likely to become outdated so that the users are left without working tools.

XIII. FUTURE PERSPECTIVES AND FACTORS OF CHANGE

A. Generative Artificial Intelligence and Large Language Commendations:

Generative AI brings new opportunities of individual learning and support. In the case of students with learning disabilities, the systems might produce a simplified explanation in other formats. In the case of the people with cognitive impairments, they can act as adaptive daily living coaches and break down the complex problems into step-by-step instructions depending on the level of understanding of the same individual [4].

B. Proactive Support and Predictive Analytics:

The change is to be expected in future systems where assistance will be proactive and not reactive. Through user habit recognition, it might be possible to predict the difficulty and offer remedies before the issue emerges, e.g., the system may offer alternative routes depending on weather conditions or give a preview of upcoming routes during common routines.

C. Brain-Computer Interfaces (BCIs):

BCIs are experimental yet a future of severely physically impaired people, such as those with advanced ALS or a spinal cord injury. BCIs would potentially allow communicating, moving, or controlling a device without any bodily movement by decoding electrical signals in the brain into commands. Although affordability and infrastructure presently restrict the Global South possibility, this technology is a precursor to a more long-term trend of an even greater integration of humans and machines.

XIV. SUSTAINABILITY MODEL, ECOSYSTEM AND FUNDING

A. Current Funding Landscapes:

Investment in assistive technologies based on AI in the Global South is still scattered and mostly project-oriented. Common ones are international development grants, corporate social responsibility programs and venture philanthropy. There is a significant disparity in the funding between the successful pilots and to scaling and sustainable deployment.

B. Effective Business Scale Models:

Achieving scale: Scale involves flexible business models, which include: cross-subsidization, platform-as-a-service deals with governments or NGOs and micro-subscriptions based on income. These strategies can be used to reconcile cheapness and sustainability.

C. The Impact Investing and Role of Social Enterprises:

The social enterprises that should be considered critical because of their local embeddedness and agility are mission-driven social enterprises. Impact investment (in pursuit of both social and financial returns) may serve as the source of patient capital that will help these organizations grow and expand.

D. Placing Together the Path Forward:

The facts examined in the current paper highlight the possibility of AI as an effective augmentative device among the Persons with Disabilities in the Global South. Just as AI applications can bring real value by improving the communication process and mobility, they can also do the same in terms of educational and economic opportunities. These benefits will however be subject to responsible design, an understanding of the context, and support in the long run. The main issue is not with the innovation of technology as such, but with the ability to incorporate AI systems that do not treat a person as a means to achieve any goal [3].

XV. STRATEGIC RECOMMENDATIONS

- For Governments and Policy Makers- Develop national strategies around assistive technology that will specifically include AI-based tools, investments in inclusion-driven digital infrastructure, building robust data protection frameworks, and developing public-private partnerships with local DPOs and research institutions.
- For Technology Developers- Make participatory design a standard, low-resource and offline observable AI training a priority, footloose diversified training data, deploy modular and low-cost pricing mechanisms.
- For the International Agencies and Donors:
- Local led innovation, capacity building of PWDs, and sharing knowledge through an open platform and cross-regional cooperation [22].
- For Academic Institutions- Create interdisciplinary research facilities, longitudinal effects studies, and create measures of evaluation that would reflect the outcomes of their work in reality (e.g. autonomy, participation, and quality of life).

XVI. CONCLUSION

The incorporation of Artificial Intelligence in disability inclusion initiatives in the Global South is, after all, a test of how much effort people put in equity and human dignity. In its empathetic, culturally aware, and fully engaged design, AI can serve as an augmented agent, complementary to the enhancement of capabilities and an increase in the involvement in social, economic, and civic life. The gauging of success ought to be based on tangible freedom and possibilities and not on the sophistication of these algorithms.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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