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Article

Inclusive Education in Context: A Comparative Analysis of Support Systems for Disabled Students in Pakistani and Kenyan Universities

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Abstract

The pursuit of disabled students' inclusion in higher education remains a significant global concern, particularly in developing nations where systemic and institutional barriers persist. Despite progressive legislative and policy frameworks promoting inclusive education, Kenyan and Pakistani universities continue to encounter structural, financial, and attitudinal challenges that hinder equal participation in learning and research for disabled students. This study aims to identify, analyze, and prioritize the complementary support strategies necessary for disabled students' inclusion in learning and research opportunities in both Kenyan and Pakistani higher education institutions. Employing a quantitative research design, data were gathered through structured questionnaires distributed among disabled students in institutions of higher learning. The data were analyzed using the fuzzy synthetic evaluation (FSE) approach, which integrates fuzzy logic with descriptive statistics to objectively determine the weight, level of agreement, and internal consistency of the identified support strategies. Among the six support strategies, Physical Facility Support emerged as the most crucial in Pakistan, followed by Attitudinal and Community Support. On the other hand, the Kenyan group indicated Policies and Advocacy as the most essential support strategy for disabled students' inclusion in higher education. The findings underscore that the two countries differ in how they prioritize support strategies for the inclusion of students with disabilities. This study contributes theoretically by advancing the application of the FSE model within inclusion research, offering a rigorous, data-driven framework for understanding multidimensional support strategies for disabled students.

Keywords: support strategies; disability; higher education; fuzzy synthetic evaluation; inclusive education policy

1. Introduction

Globally, an estimated 16% of the world's population lives with some form of disability (WHO, 2023). Regional patterns, however, vary considerably. In North America, approximately 15% of the population lives with disabilities (WHO, 2023), while data from the United States indicates a higher prevalence of 28.7% across all disability types (CDC, 2025). In Europe, more than 25% of adults aged 16 and above—equivalent to 101 million people, or one in four—report at least one form of disability (Eurostat, 2025). Australia reports a similar prevalence at around 15% of its population (WHO, 2023). Asia accounts for the largest absolute number of persons with disabilities (PWDs), with an estimated

700 million individuals affected (WHO, 2021). This high figure is influenced by the region's ageing demographics and rising rates of chronic illness. In Africa, disability prevalence ranges between 15% and 16% (World Population Review, 2025; WHO, 2023), with rural areas experiencing disproportionately higher rates due to factors such as limited healthcare access, domestic violence, and preventable disease (World Bank, 2022).

In Kenya, the 2019 national census reported that 2.2% of the population lives with some form of disability, with prevalence higher among women than men (Kenya Disability Resource, 2022). The most commonly reported disabilities include mobility impairments (42%), visual impairments (36.4%), and cognitive disabilities (23%) (UNFPA Kenya, 2023). In Kenya, despite policy frameworks such as the Persons with Disabilities Act (2003) and the Basic Education Act (2013), inclusive education remains underdeveloped, particularly at the tertiary level (Ireri et al., 2020; Elder, 2020). Global disparities and systemic barriers that disproportionately affect persons with disabilities are often framed within the broader discourse of social exclusion, marginalization, and inequity (UNESCO, 2020). Disabled students in Kenyan universities are increasingly aware of the structural, psychological, and social barriers that hinder their academic participation (Ireri et al., 2020). These challenges manifest in various forms, such as physical inaccessibility, attitudinal bias, and institutional neglect, creating environments where disabled individuals struggle to access and thrive in mainstream education systems (Ngui, 2019). Learners who are informed about inclusive education are more likely to advocate for their rights and to contribute to building safer, more equitable learning environments (Njoka et al., 2012). However, studies have shown that institutional actions and inactions, such as the absence of disability inclusion policies, inadequate funding, and poor communication, are key antecedents of exclusion (Kochung, 2011). While various international conventions, national laws, and institutional policies have emphasized the right to inclusive education, disabled students continue to face multiple layers of exclusion (WHO, 2023).

In South Asia, Pakistan represents a particularly challenging landscape for disability inclusion. Helping Hand (2012) has revealed that over 5 million people live with disability in Pakistan. Furthermore, educational participation among children with disabilities in Pakistan remains alarmingly low (Muhammad et al., 2024). Several core challenges continue to limit inclusion in Pakistani educational institutions. These include insufficient training among faculty members, a lack of inclusive teaching resources, prevailing societal biases towards disability, and weak enforcement of inclusion policies (Bhutta & Muzaffar, 2025). These issues are compounded by fragmented community engagement and underdeveloped support structures, creating a pressing need for capacity-building programs, policy reinforcement, and public awareness initiatives (Mahmood et al., 2025). While special education was once the principal avenue for learners with disabilities, global discourse now advocates for inclusive education as a fundamental right, with Pakistan also adopting key international conventions (Mustfa et al., 2025). A large portion of the country's school-aged population remains out of school, with poverty, gender, and disability intersecting to produce layered and dynamic forms of marginalization (Nisar et al., 2023).

Previous studies, such as Nisar et al. (2023), have explored the lived experiences of students with special needs, offering narrative-based perspectives from higher education institutions. Adil et al. (2025) offered practical policy recommendations to address learning disabilities but focused narrowly on academic barriers. Gilani et al. (2020) examined the prevalence of disability types and their implications within an educational and Islamic framework. Muhammad et al. (2024) provided a theoretical critique of inclusive education in Pakistani schools, highlighting conceptual and systemic disconnects.

While previous studies have provided valuable insights into discrete aspects of disability support, there remain critical gaps in comprehensively and comparatively evaluating

the support strategies that shape inclusion in universities on the two continents. However, none of these studies have holistically assessed the key pillars of the support strategies required for effective inclusion; therefore, this study investigates the current state and effectiveness of the institutional support for disability inclusion within both Pakistani and Kenyan educational institutions. It addresses a significant gap in the literature by assessing the presence of support mechanisms and their accessibility, relevance, and alignment with students' diverse needs. In addition, this study advances discourse by evaluating multiple domains of support within educational institutions, specifically physical and infrastructural accessibility, institutional attitudes and community support, regulatory frameworks and advocacy, emotional and social inclusion, and technological provisions. By integrating these various dimensions, this study offers a multi-layered analysis that reflects the complexities of inclusion in the developing nations. Its originality lies in its comprehensive approach and focuses on the intersectionality of institutional, social, and pedagogical factors. By doing so, it offers critical insights that can inform national educational reforms and contribute to a global understanding of inclusive education, especially in under-researched and resource-constrained contexts.

2. Literature Review

Past Studies on Support for the Disabled Inclusion in Educational Institutions

Inclusive physical infrastructure forms the bedrock of accessible education for disabled students. Research continues to highlight glaring gaps in physical facilities, such as non-existent ramps, inaccessible lecture halls, and poorly designed furniture (Ali et al., 2024; Milic Babic & Dowling, 2015). These limitations hinder the mobility and autonomy of students, exacerbating feelings of exclusion (Alhusban & Almshaqbeh, 2024). The principles of universal design, emphasizing usability, safety, and convenience for all, offer a robust framework to address these infrastructural deficits (Yadav & Singh, 2022; Utami, 2025). Importantly, seamless access extends beyond the immediate campus. Adequate parking spaces, safe pedestrian paths, and accessible public transport systems are equally vital to ensure that disabled students can travel independently to and from institutions (Nisar et al., 2023). As Ahmed et al. (2022) suggested, developing and utilizing standardized accessibility assessment tools can assist institutions in evaluating and improving compliance with accessibility norms. In developing countries where inaccessible classrooms, libraries, and vocational centres are prevalent, it underscores the necessity for an institutional commitment to inclusion (Carrillo-Sierra et al., 2025). Without adaptive furniture and flexible classroom layouts, students with mobility or posture-related disabilities often struggle to participate fully.

Attitudinal barriers remain among the most insidious impediments to inclusion. Faculty beliefs and community norms shape the overall experience of disabled students in powerful ways (Shaw, 2024). When faculty possess inclusive attitudes, they are more likely to provide reasonable accommodations, to adjust teaching practices, and to foster empathetic learning environments (Lopez-Gavira et al., 2021; Popovska Nalevska et al., 2022). However, the absence of adapted materials and lack of professional training can reinforce negative stereotypes and hinder effective teaching (Mahmood et al., 2025). Support from psychologists, physicians, and social workers also plays a vital role in ensuring holistic well-being for disabled students (Khalid et al., 2022; Spirina et al., 2020). Interdisciplinary collaborations between academic and medical professionals enhance both academic outcomes and psychosocial adjustment (Shevchuk et al., 2024). Similarly, fostering strong interpersonal relationships between teachers, peers, and support staff encourages a culture of respect and shared responsibility (Shaw, 2024). Family involvement and community partnerships are equally critical. Families who are engaged in their children's education

often become powerful advocates for accessibility and policy change (Corrêa et al., 2021; Xu & Filler, 2008). Community-led initiatives, such as awareness campaigns or volunteer mentoring programs, can dismantle deep-seated stigma and promote inclusion from the grassroots level (Carrillo-Sierra et al., 2025). Positive student attitudes towards their disabled peers, cultivated through inclusive activities and cooperative learning, build social cohesion and foster mutual understanding (Shevchuk et al., 2024). McGregor (2003) found that prior contact with disabled students correlates with more positive attitudes. However, short-term inclusion (one semester) did not always lead to statistically significant attitude shifts towards more acceptance.

Inclusive education requires more than physical access; it demands pedagogical innovation (Spirina et al., 2020). Educators must be equipped with the knowledge and skills to adjust curricula, teaching strategies, and assessment frameworks (Lopez-Gavira et al., 2021). Strategies such as differentiated instruction, the use of multi-modal materials, and personalized feedback enable students with diverse needs to engage meaningfully with the content (Cedeño, 2024). Professional development is key. Teachers benefit from training programs that focus on inclusive pedagogy, assistive technology integration, and collaborative teaching. When special education professionals co-teach alongside general educators, both groups learn from each other, leading to more effective classroom practices (Nisar et al., 2023). Faculty attitudes also improve when training is embedded in the institutional culture and supported by leadership (Gonzalo et al., 2024). Beyond classroom instruction, curriculum adaptation must include opportunities for disabled students to engage in extracurricular activities, which foster socialization, leadership, and self-confidence (Nawire et al., 2025) in which administrative support and a school-wide commitment to inclusive education are foundational to sustaining these practices (Adil et al., 2025). Furthermore, as Qu (2024) demonstrated in China, empowering parents and communities to advocate for change ensures long-term accountability and progress.

Despite the proliferation of international disability rights frameworks, such as the United Nations Convention on the Rights of Persons with Disabilities (CRPD), many countries struggle with enforcement and local adaptation (Gilani et al., 2020). Comprehensive institutional policies are a cornerstone of disabled inclusion (Menaga & Janani, 2025). In Pakistan, policy implementation remains fragmented. While the National Policy for Persons with Disabilities 2002 outlines educational rights, enforcement mechanisms and financial commitments remain weak (Muhammad et al., 2024). In Australia, for instance, social equity frameworks have enhanced participation rates among disabled students, yet full representation remains elusive (Vlcek & Somerton, 2024). Ignorance of existing policies, especially among students and educators, further impedes social inclusion (Ahmad et al., 2024). Menaga and Janani (2025) found that advocacy initiatives, such as student-led disability awareness workshops, increased peer understanding by 40%, based on pre- and post-campaign surveys. Therefore, extensive advocacy campaigns are necessary to raise awareness and to hold institutions accountable. Financial aid, too, is central to achieving the goal of an inclusive learning environment (Bhutta & Muzaffar, 2025). Hence, institutions must embed equity-driven policies within their governance structures to ensure clear reporting and to redress mechanisms for students facing discrimination (Vincent & Chiwandire, 2019).

The educational success of disabled students is inseparable from their social and emotional well-being (Lopez-Gavira et al., 2021). Institutions must go beyond academic support to provide comprehensive psychosocial services. Equal access to education requires that students feel safe, respected, and supported in their learning environments (Yadav & Singh, 2022; Spirina et al., 2020). Access to counselling services tailored to emotional and psychological needs is essential, particularly considering the persistent mental health

challenges faced by many disabled students (Utami, 2025). Peer support programs have also shown promise in reducing social isolation and building inclusive peer networks. By fostering shared experiences and mutual support, these programs enhance student retention and satisfaction (Shaw, 2024). Career counselling further supports social integration by helping students plan for the future, identify their strengths, and transition into the labour market (Qu, 2024). As Khalid et al. (2022) noted, transforming the physical, social, and instructional environments in tandem is critical to cultivating dignity and agency among disabled learners. Ayamba (2022) argued that peer support creates a safe space for disabled students to share experiences, to exchange practical advice, to build a sense of community, and to reduce feelings of loneliness.

Assistive technology holds transformative potential for disabled students (Lyner-Cleophas, 2019). However, limited availability, poor training, and inadequate infrastructure constrain its widespread use (Nawire et al., 2025). In addition, lack of funding, insufficient institutional policy mandates, inadequate procurement processes, and lack of sustainable maintenance and technical support exacerbate the issue (Ndlovu, 2021). Teachers often lack confidence and expertise in using assistive tools, necessitating targeted pre-service and in-service training (Jolley et al., 2018). Therefore, universities must prioritize the professionalization of educational technology roles, offering certifications and specialized programs (Mustfa et al., 2025). Accessible educational materials, including e-books, audio texts, captioned videos, and tactile graphics, are fundamental to inclusive instruction. In Pakistan, scaling similar initiatives could catalyze national awareness and capacity-building in assistive technology (Muhammad et al., 2024). A recent study by Papadopoulou (2025) explored teaching staff knowledge and skills regarding accessible educational materials across higher education institutions in several European countries. Many staff are aware of some formats, far fewer have experience in creating or using materials in less common accessible forms. Staff knowledge tends to be tied to what they already use; familiarity breeds comfort but often leads to limited innovation. The support strategies for disabled inclusion in education institutions obtained from the extant literature is illustrated in Table 1.

Table 1. Support strategies for the disabled inclusion in educational institutions.

Support	Sources
Physical Facilities Support	
Seamless access to buildings and parking	Milic Babic and Dowling (2015)
Public transport for disabled	Milic Babic and Dowling (2015)
Furniture design and layout for the disabled	Muzemil (2018)
Attitudinal and Community Support	
Faculty's attitudes towards disabled students	Lopez-Gavira et al. (2021)
Assistance from psychologists, physicians and social workers	Spirina et al. (2020)
Good interpersonal relationships and communication	Kioko and Makoelle (2014)
Family engagement	Xu and Filler (2008).
Community partnership	Milner and Kelly (2009).
Students attitude towards peers with disabilities	McGregor (2003)
Curriculum Adaptation and Professional Development	
Adjusting teaching methodologies, and materials	Lopez-Gavira et al. (2021)
Extracurricular activities	Spirina et al. (2020)
Training of staff	Spirina et al. (2020); Menaga and Janani (2025)
Pedagogical and educational support	Spirina et al. (2020); Kioko and Makoelle (2014).
Collaborative teaching practice	Menaga and Janani (2025)

Table 1. *Cont.*

Support	Sources
Policies and Advocacy	
Policies, anti-bullying initiatives, and legislative reform	Menaga and Janani (2025)
Advocacy and awareness	Menaga and Janani (2025)
Financial aid	Milic Babic and Dowling (2015)
Enforcement of disabled inclusion policies	Ahmad et al. (2024)
Social and Emotional Support	
Equal access to education	Spirina et al. (2020)
Counselling services	Adaka et al. (2024); Ayamba (2022).
Peer support programmes	Adaka et al. (2024); Ayamba (2022).
Technological Support	
Availability of assistive technologies	Lyner-Cleophas (2019); Menaga and Janani (2025)
Teaching and learning materials in various formats	Lyner-Cleophas (2019); Papadopoulos et al. (2024).
Knowledge of assistive technology software apps	Papadopoulos et al. (2024).

3. Materials and Methods

3.1. Research Design

This study adopted a quantitative research design to examine the supports available for the inclusion of disabled students in both Pakistani and Kenyan higher education institutions using a survey. This approach was suitable for identifying patterns and relationships between the various institutional, social, and academic support mechanisms that influence inclusion outcomes for disabled students. The research design enabled the collection of measurable and comparable data from a wide population, which allowed the use of statistical techniques for analyzing inclusion-related factors within universities (Watson, 2015).

3.2. Questionnaire Development and Data Collection

The research instrument, a structured questionnaire, was developed based on the existing literature and previously validated scales addressing support strategies for disability inclusion and accessibility in higher education. Each section of the questionnaire was designed to measure one of six major support strategies identified as crucial for promoting inclusion: Physical Facilities Support, Attitudinal and Community Support, Curriculum Adaptation and Professional Development, Policies and Advocacy, Social and Emotional Support, and Technological Support. All items were rated on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), to capture varying levels of agreement among the respondents. A pilot test was conducted with fourteen subject-matter experts, including eight academics and six rehabilitation professionals for disabled persons, to ensure clarity, relevance, and contextual appropriateness. Minor revisions were made to improve language precision and to eliminate ambiguity. Ethical approval for this study was obtained. As required in Kenya, a research permit was also obtained from the National Commission for Science, Technology and Innovation (NACOSTI), while ethical approval was also obtained from Pakistan. The participants were provided with detailed information about the study's objectives, voluntary participation, confidentiality, and data protection measures. Informed consent was obtained prior to survey completion, and the participants were assured that individual responses would remain anonymous and that data would be used solely for research purposes. The questionnaire was administered, and data were collected between July and October 2025 using both online and in-person survey methods across four public and private universities in Pakistan: International Islamic University, Mirpur University of Science and Technology, Bahria University, and Foundation University. In Kenya, data were obtained from disabled students studying at Kenyatta

University, Karatina University, University of Embu, Masinde Muliro University of Science and Technology, and Zetech University. The universities were purposively selected based on the high number of disabled students enrolled in them. The survey specifically targeted disabled students, ensuring that responses reflected the lived experiences of those directly affected by inclusive education policies, yet recognising that many students do not declare. Multiple channels, including university disability support offices and research networks, were used to maximize participation.

3.3. Sampling Strategy

A robust sampling procedure was employed to ensure methodological accuracy. Kenya and Pakistan were purposely selected to compare the findings of the support strategies required by disabled students in their higher institutions. Kenya is known to make a good effort for inclusion of disabled students in their institutions, while such report is not confirmed in Pakistan despite the number of people, youth, and children with disability. Comparing the findings of these two countries on two continents will also provide insights for the unique interventions required to enhance disabled students' inclusion in their higher institutions, and to provide stakeholders with practical recommendations. Therefore, the target population included individuals within selected universities in the two countries, both undergraduate and postgraduate students, who had direct experience with or awareness of disability inclusion policies and practices. Using Yamane's formula at a 5% margin of error, the required sample size from a population of 229 disabled students in Pakistan was calculated to be 146. A total of 51 responses were received, of which 44 were valid and were then used for analysis, resulting in a 30.1% of the computed sample size. In Kenya, the required sample size from a population of 166 disabled students was 117. A total of 94 responses were received, of which 86 were valid and were then used for analysis, resulting in 73.5% of the computed sample size. In total, the data collected ($N = 130$) represent 55.1% of the combined sample size, which can be considered satisfactory. The amount of data collected satisfied the central limit theorem recommending minimum of 30 sample size for data analysis. Additionally, the amount of data collected was considered to be sufficient for the intended statistical evaluation, i.e., the FSE method. This method was suitable given this study's focus on individuals knowledge about the institutional provisions for disabled students and the sensitive nature of the topic.

3.4. Methods of Data Analysis

Descriptive statistics, such as frequency distribution and percentages, were used to analyze the respondents' background information. A Shapiro–Wilk test was conducted to determine the normality of the dataset. Thereafter, a Mann-Whitney U test was conducted to determine the significant differences in the opinions of the respondents in Pakistani and Kenyan universities. To test the internal consistency of the data, Cronbach's alpha was employed, while mean scores of the support strategies were calculated using the Statistical Package for the Social Sciences (SPSS version 27). These mean values were used to rank the six support strategies based on their perceived effectiveness. Subsequently, the fuzzy synthetic evaluation (FSE) method was applied to interpret the evaluated support strategies for disability inclusion. The FSE method, which originates from fuzzy set theory, is effective in analysing subjective human judgments that involve uncertainty and vagueness. This analytical approach converts qualitative evaluations into quantitative values, allowing for a more structured and objective assessment of the different inclusion supports.

The FSE process consisted of four key stages:

1. Constructing the evaluation index system that represented the six inclusion support strategies.

2. Calculating the mean scores and weightings (W) for each support item based on the respondents' feedback.

3. Establishing membership functions (MF) for each support variable using the five-point Likert ratings.

4. Computing the agreement indices to determine the relative significance of each support strategy.

The evaluation index was defined as U = (u1, u2, u3, u4, u5, u6), representing the six inclusion support categories. Sub-items under each strategy were denoted as u1 = (u11, u12, ..., u1n). The rating scale remained V = (1, 2, 3, 4, 5). In the second step, weightings (W) were derived from mean (μ) and component factors using Equation (1):

$$W_i = \frac{\mu i}{\sum_{i=1}^{5} \mu_i}, \; 0 \leq w_i \leq 1, \; \sum_{i=1}^{5} w_i = 1 \tag{1}$$

In the third stage, the membership function (MF) for each inclusion support item was determined by analyzing the percentage of responses across the five-point scale. The MF for each item (mx) was calculated based on the distribution of responses at each rating level (from 1 to 5). Here, Xbvm represents the proportion of responses within a rating level, while Xbmx/Vb captures the relationship between each distribution and its corresponding grade. This step converted the respondents' perceptions into fuzzy numerical values, allowing for a nuanced measurement of the relative effectiveness of each inclusion support.

$$MF_{mx} = \frac{K_{1m_x}}{M_1} + \frac{K_{2m_x}}{M_2} + \frac{K_{3m_x}}{M_3} + \frac{K_{4m_x}}{M_4} + \frac{K_{5m_x}}{M_5} \tag{2}$$

A fuzzy matrix (Ri) was then developed to consolidate the membership functions of all sub-items within each support strategy. The matrix was combined with the respective weight indices to generate a comprehensive fuzzy vector (Di), representing the aggregated importance of each inclusion support. These computations were carried out using established fuzzy logic formulations to ensure comparability and internal reliability. Di and Ri were derived through Equations (4) and (5):

$$D_i = \begin{bmatrix} MF_{ix1} \\ MF_{ix2} \\ MF_{ix3} \\ \cdots \\ MF_{ixn} \end{bmatrix} = \begin{bmatrix} K_{1ix1} & K_{2ix1} & \cdots & K_{5ix1} \\ K_{1ix2} & K_{2ix2} & \cdots & K_{5ix2} \\ K_{1ix3} & K_{2ix3} & \cdots & K_{5ix3} \\ \cdots & \cdots & \cdots & \cdots \\ K_{1ix4} & K_{2ix4} & \cdots & K_{5ix5} \end{bmatrix} \tag{3}$$

$$R_i = W_i \cdot D_i = (w_1, w_2, \ldots w_n) \cdot \begin{bmatrix} K_{1ix1} & K_{2ix1} & \cdots & K_{5ix1} \\ K_{1ix2} & K_{2ix2} & \cdots & K_{5ix2} \\ K_{1ix3} & K_{2ix3} & \cdots & K_{5ix3} \\ \cdots & \cdots & \cdots & \cdots \\ K_{1ix4} & K_{2ix4} & \cdots & K_{5ix5} \end{bmatrix} = (r_{i1}, r_{i2}, \ldots r_n) \tag{4}$$

In the final stage, the FSE approach was used to compute the agreement index for each inclusion support strategy. The agreement index expresses the combined influence of all items under a specific category and was obtained as the weighted sum of each grade (q = 1–5) multiplied by the corresponding fuzzy evaluation matrix (Ri). These indices enabled a ranking of the six support strategies based on their overall contribution to effective disability inclusion within Pakistani and Kenyan higher education institutions.

$$AI = \sum_{i=n}^{5} (R_i \times Q_i) = 1 \leq AI \leq 5 \tag{5}$$

4. Results

4.1. Background Information of the Respondents

The background information of the respondents from both Pakistan and Kenya is shown in Table 2. The majority of the respondents in both groups are male; female respondents account for 38.6% in Pakistan and 37.2% in Kenya, while N = 4 (4.7%) of the respondents preferred not to indicate their gender. The age distribution of the respondents also follows a similar pattern in both groups, with the majority within 20–24 years. The majority of the respondents from the Pakistani group were in the undergraduate programme (N = 33), with one-third in the postgraduate programme (N = 11), while the undergraduate participants from Kenyan universities were also the majority (N = 58) compared to postgraduates (N = 28). Most of the respondents in the Pakistani group are studying at the International Islamic University (N = 39, 88.6%), while Kenyatta University has a majority of the respondents in the Kenyan group. Detailed information of the respondents in both groups is presented in Table 2.

Table 2. Background information of respondents.

Background Information	Items	Pakistan (*N* = 44)		Kenya (*N* = 86)	
		Frequency	Percentage	Frequency	Percentage
Gender	Male	27	61.4	50	58.1
	Female	17	38.6	32	37.2
	Prefer not to say	—	—	4	4.7
Age	Less than 20 years	6	13.6	14	16.3
	20–24 years	19	43.2	36	41.9
	25–29 years	12	27.3	14	16.3
	30–39 years	7	15.9	4	4.7
	40 years and above	—	—	16	18.6
	Prefer not to say	—	—	2	2.3
Year of study	First year	6	13.6	16	18.6
	Second year	4	9.1	18	20.9
	Third year	10	22.7	8	9.3
	Fourth year	13	29.5	16	18.6
	Postgraduate	11	25.0	28	32.0
University (Kenya)	Kenyatta University	—	—	48	55.8
	Karatina University	—	—	8	9.3
	University of Embu	—	—	24	27.9
	Masinde Muiiro University of Science and Technology	—	—	4	4.7
	Zetech University	—	—	2	2.3
University (Pakistan)	International Islamic University	39	88.6	—	—
	Mirpur University of Science and Technology	3	6.8	—	—
	Bahria University	1	2.3	—	—
	Foundation University	1	2.3	—	—

Table 3 illustrates the availability of disability-friendly infrastructure across the surveyed Kenyan universities. A majority of the respondents reported the presence of ramps (67.4%) and elevators in their institutions (60.5%), indicating partial compliance with accessibility standards for students with mobility impairments. However, only 44.2% confirmed having wide doorways, and 20.9% were provided with tactile pathways for visually impaired users, demonstrating limited attention to inclusive spatial navigation. In terms of learning and living environments, only 32.6% of the respondents indicated the existence of

inclusive dormitories and quiet study rooms, while 30.2% acknowledged the presence of disability resource centres and flexible exam rooms. E-learning platforms were reported by 41.9% of respondents, but only 4.7% confirmed that institutional websites were WCAG-compliant, highlighting major gaps in digital accessibility. Other essential facilities, such as Braille signage (14%), auditory cues (9.3%), and hearing loops (7%), were scarcely available, signalling severe barriers for students with sensory disabilities. The inconsistency in infrastructural provisions suggests that Kenyan universities still operate below the universal design standards required for the full participation of disabled students.

Table 3. Disability-friendly infrastructure.

Infrastructure	Frequency	Percentage
Ramps	58	67.4
Elevators	52	60.5
Wide doorways	38	44.2
Tactile pathways	18	20.9
Adjustable desk and ergonomic chairs	8	9.3
Quiet study rooms	28	32.6
Braille signage	12	14.0
Auditory cues	8	9.3
Screen readers	16	18.6
Hearing loops	6	7.0
Wheelchair-accessible shuttles	20	23.3
Inclusive dormitories	28	32.6
Disability resource centres	26	30.2
Flexible exam rooms	26	30.2
E-learning platforms	36	41.9
WCAG-compliant websites	4	4.7
Accessible cafeterias	24	27.9
Quiet prayer/mediation rooms	10	11.6
Inclusive sport facilities	22	25.6

The findings (Table 4) reveal the disabilities of the respondents in both Pakistan and Kenya. In the Pakistani group, mobility (47.7%) and visual impairments (45.5%) were the most common disabilities among the respondents, highlighting the urgent need for accessible facilities and visual learning aids in Pakistani higher education. Moderate cases of chronic health conditions (13.6%), learning (13.6%), and intellectual disabilities (11.4%) suggest a demand for flexible learning support and inclusive teaching practices. Lower proportions of hearing (8.5%), psychological (9.1%), and speech or language impairments (11.4%) reflect the importance of assistive technologies and counselling services. Although only 2.3% reported emotional or behavioural disabilities, their inclusion calls for continued mental health awareness. Similarly, in the Kenyan group, mobility impairments (32.6%) and visual impairments (30.2%) are the most common, with smaller numbers reporting multiple disabilities, emotional/behavioural conditions, intellectual or chronic health conditions, autism spectrum disorders, and speech/language impairments.

4.2. Descriptive Analysis of Support Strategies for Disabled Inclusion

Table 5 shows the Shapiro–Wilk test value, mean scores, and standard deviation of the respondents' opinions from Pakistani and Kenyan universities and the Mann–Whitney U test value, illustrating the significant differences in both groups. The *p*-value obtained in the Shapiro–Wilk test obtained for all the support strategies is 0.000, indicating that the opinions of the respondents are not normally distributed.

Table 4. Disabilities of the respondents.

Disabilities	Pakistan		Kenya	
	Frequency	Percentage	Frequency	Percentage
Mobility	21	47.7	28	32.6
Chronic health condition	6	13.6	26	30.2
Visual impairment	20	45.5	6	7.0
Hearing impairment	4	8.5	2	2.3
Learning disability	6	13.6	6	7.0
Intellectual disability	5	11.4	4	4.7
Emotional and behavioural disability	1	2.3	4	4.7
Psychological disability	4	9.1	4	4.7
Speech and language impairment	5	11.4	4	4.7
Multiple disability	5	11.4	2	2.3

Table 5. Descriptive statistics of support strategies for disabled inclusion in higher education institutions.

Support Strategies	Code	S-W	Pakistan		Kenya		Mann–Whitney
			M	SD	M	SD	
Physical Facility Support	PFS1	0.000 **	4.18	0.99	4.47	1.01	0.036 **
	PFS2	0.000 **	4.05	1.08	4.56	0.73	0.002 **
	PFS3	0.000 **	4.39	0.87	4.51	0.74	0.454
Attitudinal and Community Support	ACS1	0.000 **	4.14	1.11	4.47	0.74	0.139
	ACS2	0.000 **	4.27	1.00	4.58	0.66	0.077
	ACS3	0.000 **	4.00	1.16	4.63	0.62	0.001 **
	ACS4	0.000 **	4.20	1.00	4.60	0.62	0.017 **
	ACS5	0.000 **	4.02	1.21	4.60	0.66	0.003 **
	ACS6	0.000 **	4.14	1.29	4.42	0.82	0.482
Curriculum Adaptation and Professional Development	CAP1	0.000 **	4.02	1.19	4.65	0.69	0.001 **
	CAP2	0.000 **	4.14	0.90	4.49	0.70	0.021 **
	CAP3	0.000 **	4.36	1.04	4.58	0.70	0.451
	CAP4	0.000 **	4.36	0.89	4.60	0.69	0.085
	CAP5	0.000 **	4.30	0.88	4.49	0.80	0.145
Policies and Advocacy	PAD1	0.000 **	2.57	1.40	4.51	0.86	0.000 **
	PAD2	0.000 **	2.91	1.52	4.56	0.70	0.000 **
	PAD3	0.000 **	3.52	1.30	4.63	0.66	0.000 **
	PAD4	0.000 **	2.95	1.33	4.60	0.62	0.000 **
	PAD5	0.000 **	3.07	1.44	4.65	0.65	0.000 **
	PAD6	0.000 **	2.59	1.42	4.65	0.69	0.000 **
Social and Emotional Support	SES1	0.000 **	2.95	1.38	4.58	0.82	0.000 **
	SES2	0.000 **	3.80	1.23	4.51	0.83	0.000 **
	SES3	0.000 **	3.89	1.17	4.58	0.66	0.000 **
Technological Support	TES1	0.000 **	3.66	1.29	4.63	0.58	0.000 **
	TES2	0.000 **	3.43	1.30	4.67	0.57	0.000 **
	TES3	0.000 **	3.25	1.33	4.58	0.70	0.000 **

Note: S-W = Shapiro–Wilk Test, M = Mean, SD = Standard deviation, ** = Significant.

Based on the opinions of the Pakistani group on *Physical Facility Support*, furniture design and layout for the disabled (PFS3) rank the highest, with a mean score of 4.39. Attitudinal and community support (ACS2) was identified as the most significant code, with a mean score of 4.27, highlighting the importance of fostering positive social attitudes, providing peer support, and establishing community partnerships in enhancing inclusive practices. Pedagogical and educational support (CAP4) is the most notable factor (M = 4.36) in *Curriculum Adaptation and Professional Development*, highlighting the need for staff development and inclusive teaching methods. These three constructs (*Physical Facility Support,*

Attitudinal and Community Support, and *Curriculum Adaptation and Professional Development)* have variables that are over a 4.00 rating in the Pakistani group.

Interestingly, the ratings of the respondents in Kenyan universities are higher than that of the Pakistani higher educations on all of the twenty-six variables in this study. For Physical Facility Support (M = 4.47 to 4.56), Attitudinal and Community Support (M = 4.42 to 4.63), Curriculum Adaptation and Professional Development (M = 4.49 to 4.65), Policies and Advocacy (M = 4.51 to 4.65), Social and Emotional Support (M = 4.51 to 4.58), and Technological Support (M = 4.58 to 4.67).

The Mann–Whitney U test conducted to determine any significant difference in the opinions of the two groups revealed that nineteen of the twenty-six variables are statistically significant, with a *p*-value less than or equal to 0.05 (see Table 5). The significant differences imply that support strategies required for disabled students in both groups are largely different. Therefore, prioritizing the order of support strategies for disabled students in both groups should be explored differently.

4.3. Mean Score, Weighting, and Membership Function of Support Strategies for Disabled Students' Inclusion

Based on the results of the Mann–Whitney U test (Table 5) indicating significant differences on the support strategies for disabled students' inclusion in both groups, the FSEs were computed differently for the Pakistani group (Table 6) and the Kenyan group (Table 7).

Table 6. Mean score, internal consistency, and membership functions of support strategies for disabled students' inclusion in Pakistani higher education institutions.

Code	Mean	W_v	Alpha	MF for Level 2	MF for Level 1
Physical Facility Support					
PFS1	4.18	0.331	0.812	(0.023, 0.023, 0.205, 0.250, 0.500)	(0.030, 0.022, 0.151, 0.302, 0.494)
PFS2	4.05	0.321		(0.045, 0.045, 0.136, 0.364, 0.409)	
PFS3	4.39	0.348		(0.023, 0.000, 0.114, 0.295, 0.568)	
Attitudinal and Community Support					
ACS1	4.14	0.167	0.900	(0.045, 0.068, 0.068, 0.341, 0.477)	(0.060, 0.034, 0.109, 0.307, 0.489)
ACS2	4.27	0.172		(0.045, 0.000, 0.114, 0.318, 0.523)	
ACS3	4.00	0.161		(0.068, 0.023, 0.182, 0.295, 0.432)	
ACS4	4.20	0.170		(0.045, 0.000, 0.136, 0.341, 0.477)	
ACS5	4.02	0.162		(0.068, 0.068, 0.091, 0.318, 0.455)	
ACS6	4.14	0.167		(0.091, 0.045, 0.068, 0.227, 0.568)	
Curriculum Adaptation and Professional Development					
CAP1	4.02	0.190	0.884	(0.068, 0.000, 0.023, 0.205, 0.227)	(0.032, 0.023, 0.087, 0.305, 0.463)
CAP2	4.14	0.195		(0.023, 0.023, 0.136, 0.432, 0.386)	
CAP3	4.36	0.206		(0.023, 0.068, 0.068, 0.205, 0.636)	
CAP4	4.36	0.206		(0.023, 0.023, 0.068, 0.341, 0.545)	
CAP5	4.30	0.203		(0.023, 0.000, 0.136, 0.341, 0.500)	
Policies and Advocacy					
PAD1	2.57	0.146	0.782	(0.318, 0.182, 0.250, 0.114, 0.136)	(0.237, 0.132, 0.238, 0.209, 0.184)
PAD2	2.91	0.165		(0.318, 0.045, 0.227, 0.227, 0.182)	
PAD3	3.52	0.200		(0.091, 0.136, 0.227, 0.250, 0.295)	
PAD4	2.95	0.168		(0.182, 0.182, 0.295, 0.182, 0.159)	
PAD5	3.07	0.174		(0.227, 0.114, 0.205, 0.273, 0.182)	
PAD6	2.59	0.147		(0.341, 0.136, 0.227, 0.182, 0.114)	
Social and Emotional Support					
SES1	2.95	0.277	0.672	(0.205, 0.182, 0.227, 0.227, 0.159)	(0.114, 0.091, 0.170, 0.334, 0.291)
SES2	3.80	0.357		(0.091, 0.068, 0.114, 0.409, 0.318)	
SES3	3.89	0.366		(0.068, 0.045, 0.182, 0.341, 0.364)	
Technological Support					
TES1	3.66	0.354	0.779	(0.114, 0.023, 0.295, 0.227, 0.341)	(0.121, 0.095, 0.259, 0.257, 0.267)
TES2	3.43	0.332		(0.136, 0.068, 0.250, 0.318, 0.227)	
TES3	3.25	0.314		(0.114, 0.205, 0.227, 0.227, 0.227)	

Note: W_v = Weighting of each support strategy.

Table 7. Mean score, internal consistency, and membership functions of support strategies for disabled students' inclusion in Kenyan higher education institutions.

Code	Mean	W_v	Alpha	MF for Level 2	MF for Level 1
Physical Facility Support					
PFS1	4.47	0.330	0.848	(0.047, 0.023, 0.023, 0.233, 0.674)	(0.031, 0.008, 0.054, 0.248, 0.659)
PFS2	4.56	0.337		(0.023, 0.000, 0.070, 0.233, 0.674)	
PFS3	4.51	0.333		(0.023, 0.000, 0.070, 0.279, 0.628)	
Attitudinal and Community Support					
ACS1	4.47	0.164	0.930	(0.000, 0.000, 0.140, 0.256, 0.605)	(0.000, 0.037, 0.105, 0.237, 0.661)
ACS2	4.58	0.168		(0.000, 0.000, 0.093, 0.233, 0.674)	
ACS3	4.63	0.170		(0.000, 0.000, 0.070, 0.233, 0.698)	
ACS4	4.60	0.169		(0.000, 0.000, 0.070, 0.256, 0.674)	
ACS5	4.60	0.169		(0.000, 0.000, 0.093, 0.209, 0.698)	
ACS6	4.42	0.162		(0.000, 0.023, 0.140, 0.233, 0.605)	
Curriculum Adaptation and Professional Development					
CAP1	4.65	0.204	0.944	(0.000, 0.000, 0.116, 0.116, 0.767)	(0.000, 0.014, 0.089, 0.218, 0.680)
CAP2	4.49	0.197		(0.000, 0.000, 0.116, 0.279, 0.605)	
CAP3	4.58	0.201		(0.000, 0.023, 0.047, 0.256, 0.674)	
CAP4	4.60	0.202		(0.000, 0.023, 0.047, 0.233, 0.698)	
CAP5	4.49	0.197		(0.000, 0.023, 0.116, 0.209, 0.651)	
Policies and Advocacy					
PAD1	4.51	0.197	0.906	(0.023, 0.000, 0.093, 0.209, 0.674)	(0.005, 0.018, 0.088, 0.257, 0.845)
PAD2	4.56	0.199		(0.000, 0.000, 0.116, 0.209, 0.674)	
PAD3	4.63	0.202		(0.000, 0.000, 0.093, 0.186, 0.721)	
PAD4	4.60	0.201		(0.000, 0.000, 0.070, 0.256, 0.674)	
PAD5	4.65	0.203		(0.000, 0.023, 0.023, 0.233, 0.721)	
PAD6	4.65	0.203		(0.000, 0.023, 0.047, 0.186, 0.744)	
Social and Emotional Support					
SES1	4.58	0.335	0.925	(0.023, 0.000, 0.070, 0.186, 0.721)	(0.015, 0.008, 0.054, 0.248, 0.667)
SES2	4.51	0.330		(0.023, 0.000, 0.070, 0.256, 0.651)	
SES3	4.58	0.335		(0.000, 0.023, 0.023, 0.302, 0.651)	
Technological Support					
TES1	4.63	0.333	0.948	(0.000, 0.000, 0.047, 0.279, 0.674)	(0.000, 0.008, 0.070, 0.233, 0.714)
TES2	4.67	0.337		(0.000, 0.000, 0.047, 0.233, 0.721)	
TES3	4.58	0.330		(0.000, 0.000, 0.116, 0.186, 0.698)	

Note: W_v = Weighting of each support strategy.

For the Pakistani group (Table 6), PFS3's MF (Level 2) is concentrated at the highest level (the largest value appears in the top grade), showing a strong consensus that furniture design/layout is a high-value support (see the PFS3 row for the Pakistani group in Table 6). By contrast, PAD1's MF places greater weight on lower grades, indicating weak perceived policy support. In short, the MF patterns confirm which items and groups are seen as strong versus weak contributors to inclusion (details in Table 6). Taken together, these FSE results, mean scores, group weights, reliability indices, and membership functions paint a consistent picture for this manuscript's theme: Pakistani universities must prioritize physical accessibility (high item means), positive attitudes and community partnerships, and curriculum and staff development (strong group influence) to advance disabled inclusion; meanwhile, policy enforcement and some social/technological supports require focused improvement. Internal consistency assessed using Cronbach's alpha is satisfactory for this study, ranging from Social and Emotional Support ($\alpha = 0.672$) to Attitudinal ($\alpha = 0.900$).

For the Kenyan group (Table 7), the internal consistency of the groups of variables is also satisfactory, ranging from Physical Facility Support ($\alpha = 0.848$) to Technological Support ($\alpha = 0.948$). The MFs are concentrated at the highest level, which indicates a higher

consensus among the respondents on the support strategies required to enhance disabled students' inclusion in higher education.

4.4. Agreement Index on Support Strategies

Table 8 presents the agreement index for each group of support strategies for disabled students' inclusion in Pakistani and Kenyan higher education institutions. It is interesting to note that the order of priority differs for the two groups. The results of the analysis for the Pakistani group indicated that Physical Facility Support (PFS) ranked first, with an agreement index of 4.205. This was followed by Attitudinal and Community Support (ACS), with a score of 4.128, and Curriculum Adaptation and Professional Development (CAP) at 3.874. Social and Emotional Support (SES) ranked fourth with a score of 3.597, while Policies and Advocacy (PAD) ranked the lowest.

Table 8. Agreement index of support strategies for disabled inclusion.

Factors	Agreement Index (Pakistan)	Rk (Pakistan)	Agreement Index (Kenya)	Rk (Kenya)
PFS	4.205	1	4.496	6
ACS	4.128	2	4.642	3
CAP	3.874	3	4.567	4
PAD	2.971	6	5.558	1
SES	3.597	4	4.520	5
TES	3.451	5	4.728	2

Note: Rk = Rank.

On the other hand, the Kenyan group reveals that Policies and Advocacy (PAD) ranked the highest, followed by Technological Support (4.728) and Attitudinal and Community Support (ACS), with an agreement index of 4.642, while the least considered is Physical Facility Support.

5. Discussion

This section discusses how the six support strategies identified in this study influence disability inclusion in Pakistani and Kenyan higher education in rank order. It interprets the key findings, connects them with past studies, and compares them with global experiences to show how these strategies can strengthen inclusive education practices.

5.1. Physical Facility Support

The analysis revealed that *Physical Facility Support* is notable among the support dimensions, with an agreement index of 4.205 in Pakistan, while it is the least agreed support strategies in Kenya (Table 8). In reality, Pakistani universities generally lack infrastructure and facilities, such as elevators, that could convey disabled students to upper floors, walkways, and parking spaces; hence, the reason why it was highly rated as the most essential. Meanwhile, some Kenyan universities possess elevators, ramps, and other infrastructure facilities that aid commuting and mobility of the disabled students. According to Gatua (2015), not all higher educational institutions in Kenya are well equipped with physical facilities to enhance the inclusion of disabled students. Therefore, institutions and city planners should collaborate to improve accessible transit links to campuses (Mwaka et al., 2024). These findings show that accessibility barriers remain central to inclusion in Pakistani higher education. Globally, similar results have been found in Ghana, where physical accessibility was identified as the most persistent barrier to university inclusion (Ackah-Jnr & Danso, 2019), and in Norway, Sweden, and Slovakia, where universal design has become a cornerstone of disability-inclusive campuses (Ceresnova & Rollova, 2018). This alignment

suggests that improving the campus physical environment is a universally acknowledged foundation for inclusive education.

5.2. Attitudinal and Community Support

Interestingly, *Attitudinal and Community Support* is ranked the second most important support strategy for disabled students' inclusion in Pakistan (AI = 4.128), and third for disabled students in Kenya (AI = 4.642), indicating that community-based interaction has a strong influence. Based on the FSE, results across ACS show that the respondents in both groups view these supports as important components for disabled students' inclusion in higher educational institutions. Support in the form of partnerships between community (ACS5), family (ACS4), student, and staff is a key multiplier of institutional capacity. Building these partnerships expands services beyond the campus and supports smoother transition-to-work pathways. Overall, these findings show that, in Pakistani and Kenyan institutions, social attitudes and community connections are as crucial as the factors considered to be most important. Similar results have been reported in Spain, where faculty empathy and inclusive classroom cultures improved disabled students' participation (Navarro-Mateu et al., 2020), and in South Africa, where positive teacher and peer attitudes were key enablers of inclusion (Donohue & Bornman, 2015). Pakistan and Kenya, thus, mirrors global trends while extending knowledge by quantifying the dominance of attitudinal support in the South Asian and African higher education context.

5.3. Curriculum Adaptation and Professional Development

The FSE results revealed that *Curriculum Adaptation and Professional Development* ranked third and fourth among Pakistani (3.874) and Kenyan (4.567) disabled students, respectively (Table 8). The findings indicate that pedagogical flexibility and professional competence remain central to inclusive higher education in both Pakistan and Kenya. Hence, adjusting teaching methodologies, materials, and evaluation systems to include flexible assessments, multimodal instruction, and adapted learning materials is crucial. This entails training on disability inclusion for all academic and administrative staff (Spirina et al., 2020; Menaga & Janani, 2025) and pedagogical and educational support (Milic Babic & Dowling, 2015; Kioko & Makoelle, 2014). These findings align with evidence from Australia, where inclusive curriculum reforms improved accessibility (Leif et al., 2024), and Finland, where adaptive teaching models enhanced engagement among disabled students (Hakala et al., 2025). Using the FSE method, this study advances knowledge by numerically identifying curriculum flexibility and staff capacity as crucial for disabled inclusion in developing-country contexts.

5.4. Social and Emotional Support

Social and Emotional Support ranked fourth among the strategies, with an agreement index of 3.597 in Pakistan, and fifth in Kenya, with an index value of 4.520 (Table 8). Equal access to education reflects the institutional commitment to non-discrimination and reasonable adjustments, but the results (M = 2.95) indicate that these commitments are only partially realized in Pakistan but are the highest in Kenyan universities (M = 4.58), as shown in Table 5. Although significant differences were recorded between both groups (Table 5), the agreement index between the respondents shows that it is essential (Table 8). Hence, universities must operationalize equality clauses through tangible practices (Spirina et al., 2020). Although peer support programs, mentorship, and study buddy systems are useful for disabled inclusion; the results show mixed perceptions of the respondents to it. In Turkey, counselling and mentoring have significantly improved student well-being and retention (Oduwaye et al., 2023), and similar findings have been reported in Nigeria (Olatunbosun et al., 2025). The contrast indicates a gap in Pakistan, where emotional and

psychosocial interventions remain underdeveloped. This finding highlights that inclusion is not only structural or pedagogical, but it must also address emotional well-being through professional counselling and peer-support mechanisms.

5.5. Technological Support

Technological Support has an agreement index of 3.451, ranking in fifth position (Table 5) for disabled students in Pakistan in this study. Meanwhile, with an agreement index of 4.728, it is ranked second according to disabled students in Kenyan universities. The variables, including availability of assistive technologies (TES1), teaching materials in multiple formats (TES2), and knowledge of assistive software/apps (TES3), achieved mean scores between 3.25 and 3.66 in Pakistan (Table 5), indicating modest but positive perceptions. Meanwhile, higher mean values of 4.63, 4.67, and 4.58, are recorded for the Kenyan respondents (Table 5). Considering the reality of Pakistani universities, disabled students may prefer other support to having sophisticated mobile apps. Meanwhile, Kenya is better in their disabled students' inclusion, which necessitates the need to desire more enabled technological support to aid learning in institutions. Past studies have revealed that the availability of assistive technologies (screen readers, alternative keyboards, and captioning tools) received moderate recognition but limited adoption (Lopez-Gavira et al., 2021; Lyner-Cleophas, 2019). The findings of this study align with studies in South Africa, where limited training restricted independence (Dabi & Golga, 2024), and in Greece, where digital literacy gaps hindered the adoption of digital technologies (Papadopoulos et al., 2024).

5.6. Policies and Advocacy

Among all support strategies, *Policies and Advocacy* ranked the lowest, with an agreement index of 2.971 in Pakistani universities. Interestingly, it is the most crucial for disabled students' inclusion in Kenyan universities (Table 8). Policies, anti-bullying initiatives, and legislative reform concern formal policies, complaint procedures, and compliance with national disability laws (Menaga & Janani, 2025). Table 5 shows that advocacy is under-resourced and irregular for disabled students in Pakistan. Meanwhile, disabled students in Kenya opined that policy and advocacy will further enhance their inclusion in higher educations. Perhaps, the policy gaps where enforcement of National Disability Acts was inconsistent in Kenya was the possible reason for the results obtained in this study (Abuya & Githinji, 2022). By contrast, the UK demonstrates strong enforcement under the Equality Act 2010 (Amnesti et al., 2023).

6. Recommendations and Implications

6.1. Recommendations

The findings show that improving disabled students' inclusion in both Pakistani and Kenyan higher education requires a coordinated effort across different areas of support. Institutions in Pakistan should first upgrade physical facilities, such as accessible classrooms, ramps, toilets, parking spaces, and well-designed furniture to support mobility and comfort for students with physical disabilities. Public transport systems should also be improved to ensure easier access to campuses. Secondly, training and awareness programmes for academic and administrative staff should be made regular to change negative attitudes and to promote an understanding of the needs of disabled students in both Pakistani and Kenyan universities. Curriculum adaptation must also be given more attention by reviewing teaching materials, learning assessments, and classroom methods to fit diverse needs. Furthermore, counselling units and peer-support programmes should be strengthened to promote emotional well-being and confidence among students. Additionally, investment in assistive technologies, such as screen readers, captioning software, and learning materials

in multiple formats, should be institutionalized. Finally, the government and universities should collaborate to create and enforce practical inclusion policies with proper monitoring, funding, and evaluation mechanisms.

6.2. Managerial Implications

Based on the findings in this study, university administrators should treat disabled students' inclusion as a strategic priority rather than as a charitable initiative. This means creating inclusive development plans that integrate accessibility, staff development, and technology into their core operations. Management should set up inclusion task forces to coordinate between departments, facilities, academics, student affairs, and ICT, to ensure all aspects of inclusion are addressed. Regular monitoring using tools like the FSE method should be applied to measure progress and to identify gaps. Human resource departments should include disability awareness in staff induction and promotion criteria. Managers must also ensure that institutional budgets clearly allocate funds for accessibility projects and assistive technologies. Finally, universities should strengthen collaboration with local communities, policymakers, and non-governmental organisations to share best practices and to promote a culture of inclusivity. By doing so, higher education institutions in Pakistan can build a more supportive and equitable environment that empowers all students to thrive academically and socially.

7. Conclusions

Across the world, the inclusion of disabled students in higher education has become a strong sign of progress, equality, and human development. Many universities are now realizing that providing only physical access is not enough; real inclusion requires emotional, social, attitudinal, policy, and technological supports that help students learn and grow in a fair environment. These supports work best when they are seen as connected systems that encourage participation and belonging for everyone. In developing nations, the need for this study becomes clear because most universities still face major challenges in creating inclusive environments. While national policies promote education for all, there are gaps in practical implementation, especially in areas such as campus accessibility, teacher training, social attitudes, and technological provision. This study was therefore carried out to fill that gap and to help universities understand the specific supports that make inclusion work in real life. From a comprehensive literature review, six major support strategies were identified: Physical Facility Support, Attitudinal and Community Support, Curriculum Adaptation and Professional Development, Policies and Advocacy, Social and Emotional Support, and Technological Support. These six areas reflect the main dimensions of disabled students' inclusion found in both global and local studies.

This study used a quantitative research design based on the FSE method. This approach helped to measure the priority level and internal consistency of each support strategy, comparing the findings of disabled students in Pakistani and Kenyan universities. The results showed that physical support is mostly ranked highest for disabled students' inclusion in Pakistan, and lowest in Kenyan universities. Interestingly, disabled students in Kenya ranked Policies and Advocacy as the most crucial, while Pakistani universities opined this to be the least. The findings of this study were based on data obtained from a specific group of higher education institutions in Pakistan and Kenya, and the sample size may not fully represent all universities. Despite these limitations, this study makes an important contribution by providing clear, data-driven insights into what supports disability inclusion in higher education. It calls for universities and policymakers to move from awareness to action, ensuring that inclusion becomes part of everyday academic life. Strengthening the six key strategies identified in this study will not only improve access

and participation in Pakistan and Kenya but serve as a model for other developing nations working towards truly inclusive higher education systems.

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