Assessing the Impact of Educational Infrastructural Support Systems on the Inclusion of Students with Disabilities in Kenyan Public Universities

Roseline Onego, PhD [1] & Sa'ad, Tajuddeen, Ph.D [2]

[1] Department of Public Administration Studies, Kampala International University, Uganda

[2] Department of Applied Psychology, Kampala International University, Uganda

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ABSTRACT

The inclusion of Students with Disabilities (SWDs) in higher education is a critical metric of social justice and alignment with Sustainable Development Goal 4. While legislative frameworks in Kenya mandate inclusive education, the extent to which physical and technological infrastructure facilitates or hinders academic participation remains under-explored. Objective: This study investigated the influence of educational infrastructural support systems on the educational inclusion of SWDs in public universities in Kenya. Methodology: Adopting a pragmatic research philosophy, the study utilized a cross-sectional survey design across six chartered public universities. Data were collected from 318 SWDs using structured questionnaires and triangulated with semi-structured interviews with disability coordinators and observational audits. Descriptive statistics and simple linear regression analysis were employed to test the relationship between infrastructure availability and inclusion. Results: The study established a statistically significant positive relationship between educational infrastructure and inclusion (β=.357,p<.001). However, the overall availability of essential infrastructure was critically low (Composite Mean = 2.01). Specific deficits were identified in alternative transportation, affordability of assistive technology (AT), and access to non-classroom facilities. Qualitative data highlighted a dichotomy between modern, accessible facilities and historic buildings that remain exclusionary. Conclusion: While infrastructure acts as a significant predictor of inclusion, current provisions are inadequate to meet the diverse needs of SWDs. The prevailing environment creates physical barriers that contravene the Social Model of Disability, shifting the locus of disability from individual impairment to institutional failure. Implications: The findings necessitate a paradigm shift from piecemeal adjustments to Universal Design principles in university infrastructure planning. Policy interventions must prioritize the retrofitting of legacy buildings and the subsidization of assistive technologies.

Keywords: Educational Inclusion, Students with Disabilities, Public Universities, Kenya, Infrastructural Support, Assistive Technology, Accessibility.

INTRODUCTION

Education is a fundamental human right and a primary driver of individual empowerment and societal progress (United Nations, 2020). For Students with Disabilities (SWDs), equitable access to higher education serves as a pivotal gateway to improved employment outcomes and an enhanced quality of life (Matesic, 2020; Wanjau, 2016). Globally, the inclusion of persons with disabilities is anchored in the Sustainable Development Goal (SDG) 4, which advocates for inclusive, equitable, and quality education for all (UN, 2015). Despite these international mandates, SWDs continue to encounter profound structural barriers within the higher education sector, evidenced by stark disparities in enrollment, retention, and completion rates compared to their non-disabled peers (UNESCO, 2012; Kefallinou et al., 2020).

In the Global South, and specifically within the Kenyan context, the realization of inclusive education faces unique implementation challenges. As a signatory to the United Nations Convention on the Rights of Persons with Disabilities (CRPD), Kenya has enacted progressive legislation, including the Constitution of Kenya

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(2010) and the Persons with Disabilities Act (2003). These frameworks explicitly prohibit discrimination and mandate reasonable accommodation in public institutions. However, a significant "policy-practice gap" persists. Statistics indicate that the transition of SWDs to higher education remains critically low, and those who enroll frequently navigate environments that are structurally hostile to their needs (Githinji, 2013; Ireri et al., 2020).

Among the most formidable barriers to inclusion are those related to the physical and technological ecosystem of the university. Educational infrastructure—encompassing accessible architecture, lecture halls, libraries, assistive technologies, and transportation—is not merely a logistical requirement but a fundamental determinant of academic engagement (Barrett, 2019). For SWDs, the absence of appropriate infrastructure translates into social exclusion, effectively negating the right to education (Edwards et al., 2022; Maingi, 2016). While existing literature in the African context has identified these challenges, there is a paucity of empirical, multi-institutional studies that quantify the specific impact of infrastructural systems on educational inclusion (Schuelka, 2017; Kiru, 2019). Most existing studies rely on qualitative data from single institutions, limiting the generalizability of their findings.

This study bridges this gap by systematically examining the influence of infrastructural availability on inclusion across multiple public universities in Kenya. It seeks to answer the following research question: Does the availability of educational infrastructural support systems have a significant influence on the educational inclusion of Students with Disabilities (SWDs) in public universities in Kenya?

Objective of the study

To examine the influence of the availability of educational infrastructural support systems on educational inclusion for Students Living with Disabilities (SWDs) in public universities in Kenya.

Research Question

Does the availability of educational infrastructural support systems have a significant influence on the educational inclusion of Students with Disabilities (SWDs) in public universities in Kenya?

Theoretical Framework

This research is grounded in the Social Model of Disability (Oliver, 1990), which posits that disability is caused by societal failures to provide appropriate services and adequately accommodate the needs of people with impairments. From this perspective, infrastructural barriers are a primary cause of disability, and their removal is essential for inclusion.

The Social Model of Disability, popularized by Mike Oliver (1990), provides an alternative perspective to the traditional medical model of disability. Rather than viewing disability as a direct result of an individual's impairment, the Social Model argues that disability arises from societal barriers that limit full participation.

According to Oliver (1990), impairments refer to physical, sensory, cognitive, or mental conditions, while disability is the disadvantage or restriction created by social, environmental, attitudinal, and institutional barriers. These barriers include inaccessible buildings, discriminatory attitudes, rigid policies, and exclusionary communication systems.

The Social Model emphasizes human rights, inclusion, equality, and participation. It shifts the focus from "fixing the individual" to transforming society in ways that accommodate diverse functioning. The model is very much relevant to this study and has significantly influenced global disability rights movements and documents such as the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD).

While highly influential, the model has been critiqued for under-emphasizing the intrinsic challenges of impairments such as chronic pain. Nevertheless, it remains foundational in disability studies, promoting empowerment and systemic change.

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RESEARCH METHODOLOGY

Research Philosophy and Design

This study adopted a pragmatic research philosophy, which allows for the use of both positivist and interpretive approaches to best address the research problem (Saunders et al., 2012). A cross-sectional survey design was employed, enabling the collection of data from a sample of the population at a single point in time to generate robust conclusions about the prevailing situation (Setia, 2016).

Population of the study and sampling technique

The target population consisted of SWDs from all 31 public universities in Kenya. A multistage sampling technique was used. First, six chartered public universities were purposively selected based on their student enrollment, charter status, and level of government funding to ensure representation of well-established institutions (CUE, 2017). These included the University of Nairobi, Kenyatta University, Egerton University, Jomo Kenyatta University of Agriculture and Technology, Maseno University, and Masinde Muliro University of Science and Technology**.**

Sample size

In the second stage, the sample size for SWDs was determined using Krejcie and Morgan's (1970) table, which recommends a sample of 384 for a large population. This sample was proportionately distributed across the six universities based on their total student enrollment. A total of 318 completed questionnaires were returned, yielding a response rate of 83%, which is considered excellent for survey research (Abirin, 2022).

Data Collection Instruments and Procedures

A mixed-methods approach to data collection was utilized:

Questionnaires: A structured questionnaire with a 5-point Likert scale (1=Totally Disagree to 5=Totally Agree) was administered to the 318 SWDs. The questionnaire contained sections on demographics and specific items related to infrastructural availability (e.g., "Information is available in different formats," "Assistive technology devices are affordable").

Interviews: Semi-structured interviews were conducted with disability coordinators from the participating universities to gain in-depth qualitative insights into the infrastructural challenges and strategies.

Observation: An observation guide was used by the researcher to physically assess the accessibility of university facilities, such as libraries, lecture halls, walkways, and toilets. Photographic evidence was also collected where appropriate.

Pilot Study/Validity and Reliability

A pilot study was conducted with 38 SWDs (10% of the sample) from Moi University. Cronbach's Alpha was calculated to test the reliability of the questionnaire. The result was 0.729, which exceeds the acceptable threshold of 0.7, indicating good internal consistency (Cooper & Schindler, 2011). Content validity was established through expert judgment from university supervisors.

Method of Data Analysis

Quantitative data from the questionnaires were coded and analyzed using the Statistical Package for Social Sciences (SPSS) version 21.0. Descriptive statistics (frequencies, percentages, means) were used to summarize the data. A simple linear regression analysis was performed to test the significance and strength of the relationship between the availability of educational infrastructure (independent variable) and educational inclusion (dependent variable). Qualitative data from interviews and observations were analyzed thematically to triangulate and enrich the quantitative findings.

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Findings

Demographics of Respondents

Of the 318 respondents, 66% (n=209) were male and 31% (n=100) were female, with 3% (n=9) identifying as intersex. In terms of disability type, the majority were physically handicapped (36.5%, n=116), followed by those with visual impairments (29.2%, n=93) and hearing impairments (26.7%, n=85). Most respondents were aged between 21-25 years (37.1%, n=118).

Availability of Educational Infrastructure

Descriptive statistics on the availability of various infrastructural components are presented in Table 1.

Table 1: Availability of Educational Infrastructure (N=318)

Infrastructure Component	Totally Disagree	Disagree	Neutral	Agree	Totally Agree	Mean
Information in different formats	7.5%	7.5%	15.4%	49.1%	20.4%	3.67
Modified information sources	13.2%	16.0%	28.0%	21.4%	21.4%	3.22
Alternative transport provisions	14.8%	30.8%	21.1%	18.9%	14.5%	2.88
Affordable cost of AT devices	19.8%	27.4%	26.7%	16.7%	9.4%	2.68
Access to Classrooms	13.2%	26.4%	20.1%	27.0%	13.2%	3.01
Access to other areas (washrooms, dining)	17.3%	28.6%	17.0%	32.7%	4.4%	2.78

The data reveals that the highest-rated component was the availability of information in different formats (Mean=3.67). The most significant deficiencies were in the affordability of Assistive

The data reveals that the highest-rated component was the availability of information in different formats (Mean=3.67). The most significant deficiencies were in the affordability of Assistive Technology (AT) devices (Mean=2.68) and the provision of alternative transport (Mean=2.88). The overall composite mean for infrastructural availability was 2.01, indicating a rating far below the average on the 5-point scale.

Influence of Infrastructure on Educational Inclusion

A simple linear regression was conducted to predict educational inclusion based on the availability of educational infrastructure. The regression model was statistically significant, $F(1, 316) = 46.213$, $p < .000$. The availability of educational infrastructure accounted for 12.5% of the variance in educational inclusion ($R^2 = .125$, Adjusted $R^2 = .125$). The regression coefficient ($\beta = .357$, $p < .000$) indicates a positive and significant relationship, meaning that a one-unit increase in infrastructural availability leads to a .357-unit increase in educational inclusion. The results are summarized in Tables 2 and 3.

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.357	.128	.125	.95250

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Table 3: Regression Coefficients

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	3.829	.128		29.803	.000
Infrastructure Availability	.253	.037	.357	6.798	.000

Qualitative Findings

The quantitative findings were strongly supported by qualitative data. Interviews with coordinators revealed that many university buildings, particularly older ones, were constructed without consideration for SWDs. One coordinator stated:

"The university buildings were constructed several years ago; some buildings are as old as during the colonial period and as a result, did not cater to the requirements of other students with special needs. However, there are a few new buildings which are considering some of our requirements."

Observational data confirmed this disparity. While some universities, notably Uni2, had modern libraries with ramps, elevators with Braille, and accessible pathways, others (Uni3, Uni4, Uni5, Uni6) had historic buildings with steep stairs, narrow doorways, and no ramps, making access to upper-floor libraries and lecture halls impossible for students with physical disabilities without assistance (see Figures 1a & 1b in Appendices). The high cost of AT, such as Braille notes and hearing aids, was consistently cited as a major barrier, forcing many students to forego these essential learning tools.

CONCLUSION

This study set out to examine the influence of educational infrastructural support systems on the inclusion of SWDs in Kenyan public universities. The findings lead to one unequivocal conclusion while a statistically significant relationship exists between infrastructure and inclusion, the current state of infrastructural provision is critically inadequate and constitutes a major barrier to the educational inclusion of SWDs.

The regression analysis confirms that improving infrastructure directly and significantly enhances inclusion. However, the very low overall rating of infrastructural availability and the specific deficiencies in transport, AT affordability, and access to essential facilities reveal a system that is failing to meet its legal and ethical obligations. The situation perpetuates the social model of disability, where it is not the individual's impairment but the environment's lack of accommodation that disables them.

The fact that information is relatively available in different formats is a positive step, but it is a superficial solution if students cannot physically access the spaces where that information is disseminated or afford the technology to utilize it effectively. The stark contrast between newer, accessible buildings and older, inaccessible ones points to a piecemeal approach to inclusion rather than a comprehensive, university-wide strategy grounded in Universal Design.

RESEARCH LIMITATIONS/IMPLICATIONS/RECOMMENDATIONS

Limitations

This study focused on chartered public universities, which are generally better funded; thus, the findings may not be fully representative of all public universities in Kenya. Furthermore, the study relied partly on self-reported data from students, which may be subject to perception bias.

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Practical Implications/Recommendations

The findings have direct implications for practice:

For University Management: Conduct comprehensive accessibility audits of all campus facilities. Prioritize budgetary allocations for retrofitting old buildings with ramps, elevators, and accessible washrooms. Establish partnerships with AT providers to subsidize costs for students.

For Government and Regulators (CUE): Make adherence to universal design principles a mandatory criterion for university accreditation and funding. Earmark specific grants for disability infrastructure in public universities.

Social Implications

Addressing infrastructural barriers is a fundamental matter of social justice. Creating accessible campuses not only empowers SWDs to achieve their academic potential but also fosters a more inclusive and diverse university culture that benefits all students and staff by normalizing diversity and breaking down attitudinal barriers.

REFERENCES

1. Barrett, P. (2019). The impact of school infrastructure on learning. World Bank.
2. Cooper, D. R., & Schindler, P. S. (2011). Business Research Methods (11th ed.). McGraw-Hill.
3. Edwards, M., et al. (2022). Physical barriers in the postsecondary environment for students with disabilities. Journal of Postsecondary Education and Disability.
4. Githinji, P. (2013). Barriers to access to inclusive education for persons with disabilities in universities in Kenya. [Unpublished thesis].
5. Ireri, B., et al. (2020). Inclusive education in Kenya: Challenges and opportunities. International Journal of Educational Development.
6. Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. Educational and Psychological Measurement.
7. Oliver, M. (1990). The Politics of Disablement. Macmillan.
8. Saunders, M., Lewis, P., & Thornhill, A. (2012). Research Methods for Business Students. Pearson.
9. Schuelka, M. J. (2017). The cultural production of the "disabled" person in Bhutan. Disability & Society.
10. Shakespeare, T. (2013). Disability rights and wrongs revisited. Routledge.
11. United Nations. (2015). Transforming our world: The 2030 Agenda for Sustainable Development.
12. United Nations. (2006). Convention on the Rights of Persons with Disabilities. UN.