

The Interplay of User Needs, Architectural Design and Form of Libraries

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Abstract

The study sought out human-centered design in libraries. Public libraries are no longer useful to a transformed majority user population. It was necessary therefore to delineate the met and unmet needs. Guided by Abraham Maslow's hierarchy of needs and Logan and Everall's pyramid of library needs, a conceptual framework emerged where community needs, and community resources pooled to form the Minimum Viable Product (MVP) as the spine of the library. Such an MVP ensured that the convenience, connection, and incubation needs of its patrons were equally catered for, and the library was enabled to grow its capacity and acquire more resources. The resulting system was a positive feedback loop that ascertained adaptation to changing needs. The case study method guided by observation and interviews was used to review libraries in the low-, middle- and high-income areas, thus, Kaloleni, Buruburu, and Maktaba Kuu libraries respectively. Most libraries met the convenience needs of their patrons, but not so for the connection and incubation needs. Bigger libraries tended to only fulfill general needs rather than specific community needs. It also emerged that a library that met the convenience, incubation, and connection needs of a population effectively also served as a good community library.

Keywords: User convenience, connection, and incubation needs.

1. Introduction

1.1 Introducing the Problem

Human-centered design is a design approach that prioritizes the needs and goals of users to create products and services that are both aesthetically pleasing and functional. It involves a four-phase process: contextualization, conceptualization, design, and evaluation (Landry, 2023). In the contextualization phase, the context of the users, including demographics, environment,

habits, and preferences, is studied. The conceptualization phase identifies specific needs and develops concepts based on data from the first phase. The design phase uses these concepts to create a product or space. The evaluation phase observes users interacting with the final product to assess its effectiveness and identify areas for improvement.

Libraries, whose primary purpose is to meet the information needs of individuals, have faced challenges due to the rise of the internet and online resources. The shift has led to a decline in the physical use of libraries. Further, it has resulted in the closure of many, especially in countries like Britain, which closed almost 800 libraries between 2010 and 2019. However, online usage of library services has increased. In Africa, studies show that while libraries are still deemed relevant, they are insufficiently used. This arises from limited book selections, lack of resources that match users' interests, and insufficient computerisation. The perception of libraries remains traditional, focusing mainly on book lending, and this diminishes curiosity about other services offered.

In Kenya, public libraries are managed by the Kenya National Library Services Board (KNLSB). It is responsible for promoting, establishing, equipping, managing, and maintaining public libraries. Challenges affecting library usage in Kenya include a poor reading culture, inadequate funding, and a lack of awareness about available services (Musandu, 2014; Kenya National Library Services, 2023). Understanding these problems through contextualization can help in developing new concepts for library design and services to better meet users' needs.

Libraries are classified into national, public, academic, and special types of libraries (Library Information Services Education Network, 2023). National libraries act as guardians of a nation's cultural legacy, intellectual accomplishments, and historical documents. They preserve and distribute knowledge to contribute to academic pursuits and cultural heritage (The Guardian, 2019). Public libraries are accessible centres of knowledge and cultural enrichment for people of all ages and backgrounds. In this regard, they cater to diverse community needs, while promoting literacy, education, and intellectual growth. Academic libraries support the scholarly activities of students, faculty, and researchers. They do so by offering extensive collections across various academic fields, that are structured into specialized sections. These in turn are aligned with distinct subjects. Special libraries serve the unique needs of organizations, industries, or professions. They feature tailored collections that are specific to particular subject matter or fields.

The study focused on public libraries, which aim to serve all community members, regardless of their access to other types of libraries. Public libraries must adapt to changing user needs and be versatile in order to fulfil their purpose effectively. By implementing human-centered design principles, public libraries can evolve to better serve their communities. In this way they remain relevant and utilize resources for knowledge and cultural enrichment. This approach can address current challenges, such as the declining use of physical library spaces. It also responds to the

emerging need for more diverse and machine accessible resources. Ultimately the role of public libraries in promoting education and intellectual growth gains enhancement.

1.2 Importance of the Problem

A case study conducted on the users of public libraries in Kenya revealed that most of the users were students in various primary and secondary learning institutions. They are attracted to these libraries owing to the inadequacy of resources in their respective institutions (Kinya, 2011; Mose, 2020). Most of the resources contained in public libraries were non-fiction curriculum-based books or reference material that catered to students and people in the early stages of career advancement. Public library in urban areas are commonly perceived to be facilities for those with formal education (Boadi Agykum, 2022, Nightingale, 2020, Kinya 2020, Totterdell, 1981).

This observed trend can be interpreted to mean that as much of the population makes advancements in education and age, public libraries become less useful to them. It seems, therefore, that public libraries, while being useful to the lower level educated elite, are not of value to the public. Should all public libraries be converted to school libraries? Would it not be better to use the funds used in public libraries to develop school libraries instead? At the moment, community libraries are of more service compared to public libraries. This is because community libraries have a social purpose. Further, they offer different materials and rely on close links with other agencies like health organizations. Such a posture contributes to the advancement of a community as a whole (Alemna, 1995; Lenstra, 2022; Ashikuzzaman, 2024; Karki et.al, 2024). This study seeks to find ways in which public libraries can ensure they provide public value to all members of the community.

1.2.1 Significance of the study

While the nature of people's needs continually changes, there has been no explicit direction for the role that will define next-generation public libraries. This research intends to close this gap by having an in-depth understanding of what public libraries, in their current form. It also reaches out to what their envisaged function and form for the years ahead, must consist of. Through the refinement and redefinition of user needs, the study outlines meaningful recommendations that libraries can apply in order to offer value. They would portray sensitive to peculiar needs of young children in their early development stage. Young adults who are in the growth phases of their careers would also be accommodated. Adults too who are in different professional fields, and the elderly would also find a place in such libraries. Such alignment would result in the patronage of public library services and premises continuing to be high.

A library-user-focused design philosophy will position the public library as a place to improve the quality of life of individuals in a community. This transformation would then spread into the society at large leading to societal well-being and economic progress (Bignoli & Stara, 2021). In effect, the study will mainstream the public library in the socio-economic development of the communities it serves.

1.3 Relevant Scholarship

1.3.1 The public value of libraries

Public value is the worth that an organization contributes to society and the community in which it operates (Field & Tran, 2018). More is expected from public libraries, and public institutions in general rather than being mere repositories of reference material and spaces for reading. Field & Tran (2018), aver that a public transport department can no longer just be about making sure trains and buses run on time. Rather it also needs to be about connecting people to communities and businesses so that they can thrive. A women's prison can no longer just be about delivering correctional services. It ought to also be about supporting women to reach their full potential as members of a community. In the same manner, libraries can no longer be warehouses for old books. People want to see libraries as multipurpose community facilities. Such are ones that offer cultural or educational functions to create a more joined-up or seamless experience for library users. To examine the public value of public organizations, its inherent concepts of Purpose, Aspect, Channel and Engine (PACE) methodology was developed by Cube Group (Ibid). These are elaborated on briefly here below to improve understanding.

1.3.1.1 Purpose

This involves clearly defining the intended public value and desired outcomes. Such would include promoting literacy, social harmony, and job prospects. Clear articulation of purpose creates intentionality towards the achievement of desired public outcomes.

1.3.1.2 Aspect

This relates to the organizational context in which the library operates. The context enables it to comprehend, anticipate, and influence environmental opportunities and challenges. This context includes government policies, social and environmental pressures, and economic trends. It also includes partnerships and collaborations with key stakeholders. These would include government, community organizations, and educational services. Strengthening these partnerships aligns library services with state and local objectives. In so doing, it enhances the library's overall impact.

1.3.1.3 Channel

This refers to the outputs of an organization, encompassing programmes and services provided. Outputs of successful libraries prioritize their mission and adapt their services, accordingly. This kind of orientation compels the provision of user relevant spaces for creative activities and interactive workshops. It also ensures access to digital resources, and educational opportunities that are tailored to user needs.

1.3.1.4 Engine

The engine component comprises the essential inputs for an organization to operate as a modern and high-performing entity. This encompasses governance structures, processes, communication strategies, assets, financial resources, and organizational capabilities.

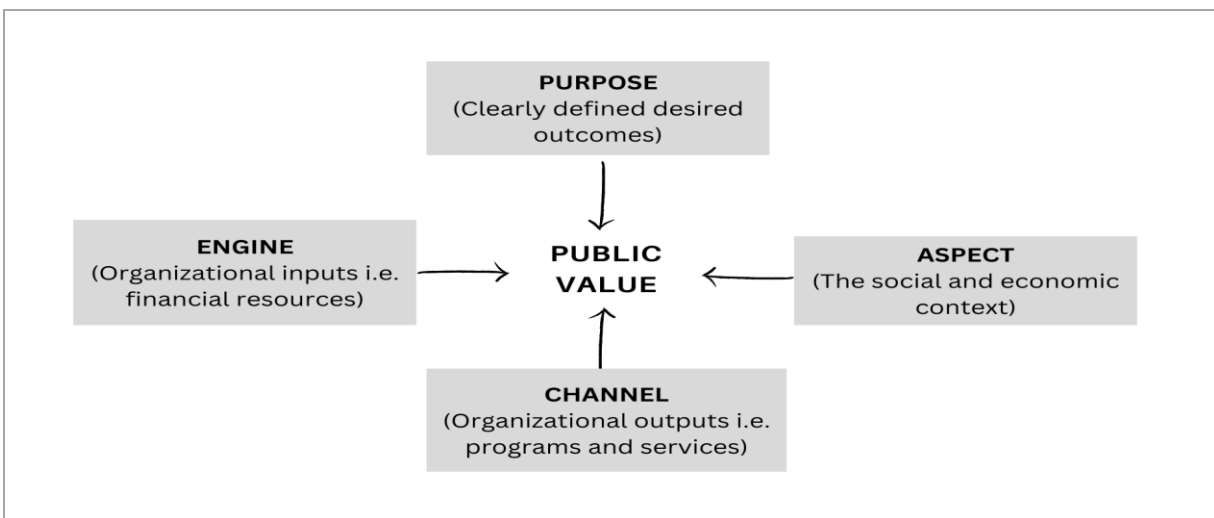


Figure 1: Purpose, Aspect, Channel and Engine (PACE) methodology as developed by Cube Group. Source Author¹; abstracted from text in Field & Tran, 2018.

The low utilization of public libraries may be attributed to a deficiency in any of the preceding four aspects of providing public value. The study focuses solely on the channel component of PACE methodology. This is what users engage in, either by utilizing or electing not to use the programmes and services provided. Understanding these factors is essential for libraries to effectively serve their communities and ensure that their resources are being used to their fullest potential.

1.3.2 The Mission of the Library

The possible obsolescence of libraries has been debated greatly because historically, they emerged to serve various deficits in the community. However, now, many of those deficits have either disappeared or can be addressed more effectively elsewhere (Lankes, 2012, Baker, 2014; Wyatt & Leorke, 2018). For instance, with the internet, the role of physical public libraries in sharing and providing access to educational resources became obsolete. The same resources could be shared online with more effectiveness. Libraries aptly adapted to this change by incorporating digital services, especially for those who were disadvantaged and could not access them otherwise. Given the low level of infrastructural services, digitizing services remains a real problem nationwide. The problem can be resolved by electrifying more rural areas to support online access. David Lankes (2012) argues that the reason libraries could be considered outdated is that they serve as remedial institutions. For them to stay relevant, they should instead

transform into community platforms. Such would then offer knowledge acquisition, spaces for creation and innovation, and factories for ideas. Therefore, as opposed to fixing community problems, they would foster the advancement of individuals.

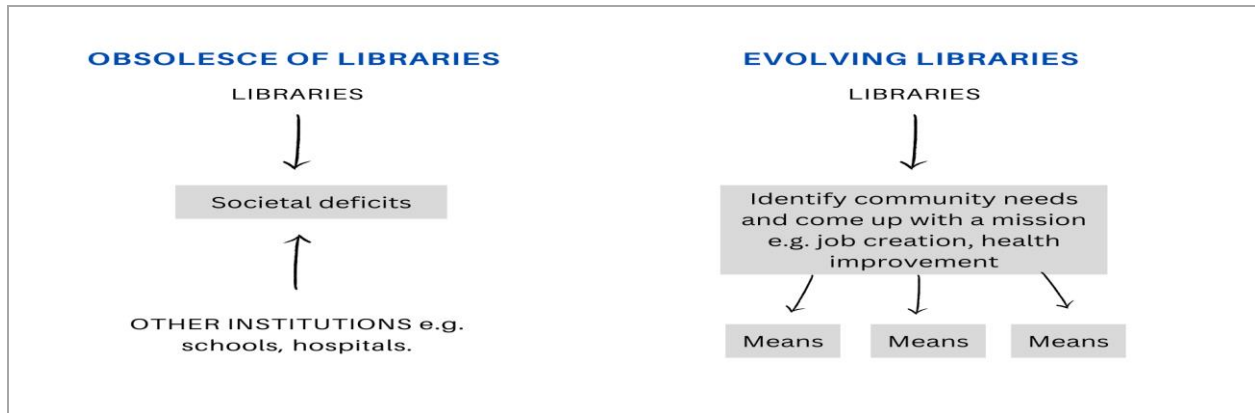


Figure 2: Present relevance of libraries. Source Author¹, abstracted from text in Lankes, 2012.

This portrayal can be misleading, eroding the distinct identity of libraries and reducing libraries to mere players in other people’s social and economic agendas. Therefore, a question arises of what it is specifically that libraries do that cannot be done by any other institution. The mission and the means of the library must be distinguished one from another (Ibid). The mission of the library, and the librarian, is to facilitate the creation of knowledge. It is not to merely provide access to knowledge. The means through which this can be done are endless (Ibid). Having this clear purpose gives libraries a steady foundation through different eras and the changing winds of time.

The preceding reflection reveals another reason that public libraries may be struggling with diminishing use by its patrons. This is the lack of a clear purpose for these institutions. Without a clear purpose, the means by which libraries deliver their services can become irrelevant to many people. To address this issue, public libraries should aim to define their purpose through a thorough understanding of the needs of their community. Once needs are clearly defined, they can be used to conceptualize a purpose that guides the services provided. It is this that ensures they are relevant and accessible to all members of the community.

1.3.3 The Contextualization of User’s needs

The first and second specific objectives of understating the used needs and form and design of libraries, derive clarity from the ensuing discussions here.

1.3.3.1 Maslow's Hierarchy of Needs

Maslow's Hierarchy of Needs, introduced by Abraham Maslow in 1943, is a psychological theory that organizes human needs into five distinct levels, illustrated in the form of a pyramid. Its inherent theory posits that a hierarchical structure of needs inherently drives individuals. Here then, each tier builds upon the foundation of the one below it. Therefore, to muster the motivation to fulfill desires at higher levels, the foundational needs must be adequately satisfied. Such sequencing ensures no deficiency in the foreseeable future.

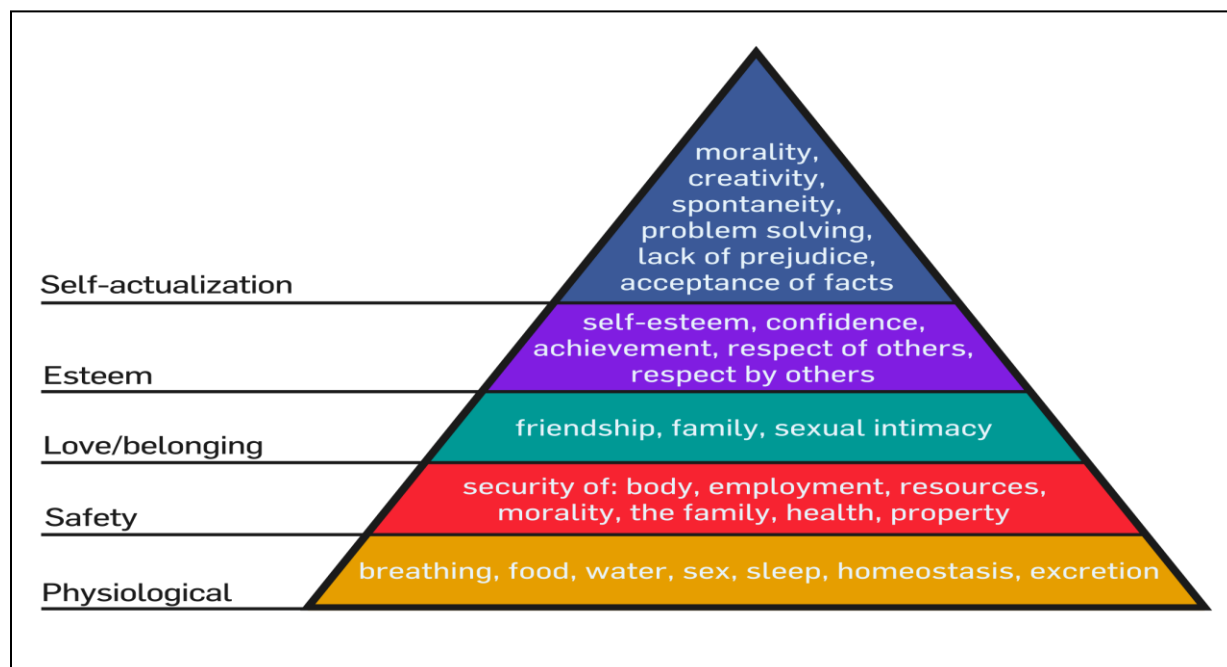


Figure 3: Maslow's Hierarchy of Needs. Source: Logan, J., & Everall, K. (2019), First Things First, Exploring Maslow's Hierarchy as a Service Prioritization Framework. University of Toronto, 2(2). DOI: <https://doi.org/10.3998/weave.12535642.0002.201>;

The foundational tier encompasses physiological needs, addressing fundamental requirements for survival such as air, water, food, and shelter. When these needs remain unmet, they dominate an individual's motivations. This leads to thoughts and behaviour that are solely focused on survival. Upon the satisfaction of physiological needs, individuals progress to the safety needs tier. At this level, they seek stability, security, and protection from both physical and emotional harm. The third tier encapsulates belongingness needs. These reflect the desire for social connections, relationships, and a sense of belonging. Needs of unmet belongingness can evoke feelings of loneliness and alienation. Such would prevent one from progressing further up the pyramid. Moving up to the fourth level one finds esteem needs. They encompass the pursuit of recognition and accomplishment. The fulfillment of these needs is essential for fostering a strong

sense of self-worth and contributing to personal and professional success. At the top tier are growth needs, representing the pursuit of personal growth and purpose. This level signifies the realization of one's fullest potential. It involves the expression of creativity, the pursuit of knowledge, and the continuous striving for improvement.

1.3.3.2 Hierarchy of library user needs

In an adaptation of Maslow's theory of motivation, a hierarchy of needs was proposed (Logan & Everall, 2019), which ordered library-specific needs along this same hierarchy. At the base was the library as a minimum viable product. The library as a convenience came next, followed by the library as a connector. Thereafter was the library as an incubator and finally, the community as the library.

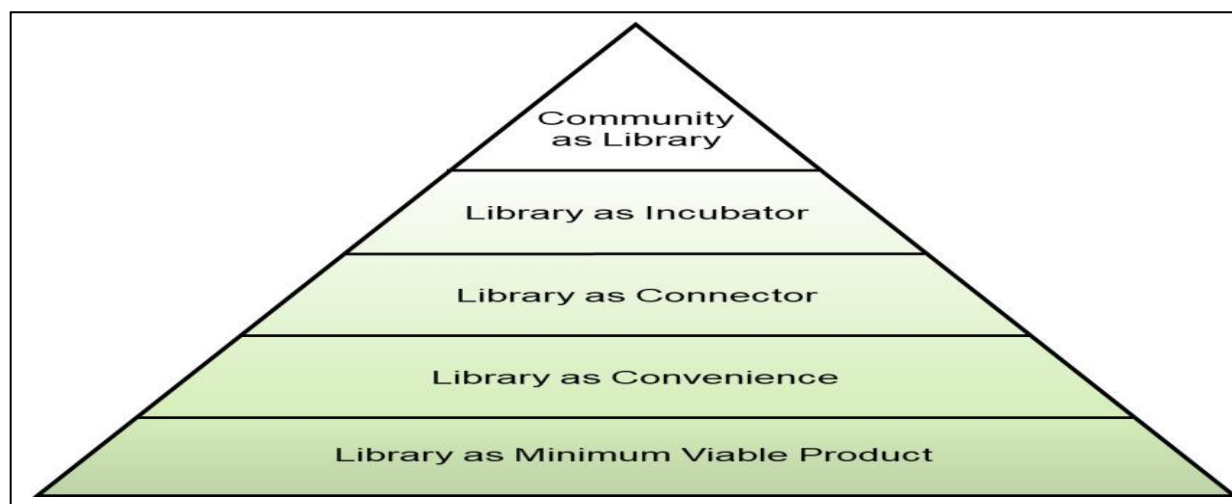


Figure 4: Logan and Everall Pyramid . Source: Logan, J., & Everall, K. (2019), First Things First, Exploring Maslow's Hierarchy as a Service Prioritization Framework. University of Toronto, 2(2). DOI: <https://doi.org/10.3998/weave.12535642.0002.201>;

1.3.3.2.1 Library as Minimum Viable Product

Within the library context, the foundational tier comprises the foundational elements that define a library. These are the items representing the essential components necessary for the library's existence. These elements form the structural basis of the library, serving as prerequisites upon which additional services can be developed. In traditional libraries, this would be a collection of references and the attendant physical spaces (Logan & Everall, 2019).

1.3.3.2.2 Library as Convenience

Once the essential requirements of a library are established, additional ones that cater to the most common needs of user communities are incorporated. These include conveniences like computer

workstations and circulation services, bookbinding, cataloging, and lending. These conveniences allow the library to function seamlessly and bring about a heightened sense of comfort (Logan & Overall, 2019).

1.3.3.2.3 Library as Connector

The third level corresponds to belonging needs in Maslow's pyramid. The library can contribute to meeting belongingness in three ways. It can start by fostering relationships between users and library staff. In this sense it would aide users in meeting and bonding with peers and in essence help users feel a sense of belonging within their peer group(*ibid*). Libraries achieve this through outreach programmes that contribute to cultivating warm relationships between the library and the community. Libraries also set themselves up as 'third spaces', attracting members for both structured and unstructured gatherings. These could include story-telling programmes for children, social clubs for teenagers, and workshops for adults.

1.3.3.2.4 Library as Incubator

In correspondence with esteem needs, this fourth tier focuses on initiatives that help users attain prestige and success in their chosen fields (*ibid*). Services and resources provided at this level address advanced user needs. These specialized services necessitate mastery from both the user and library staff. The services demand significant time and energy in addition to the funding that they require to create and maintain. They are also more likely to be accessed only by motivated users, making them less frequently used. Some services that could be included here are audio-visual content creation or mapping software.

1.3.3.2.5 Community as Library

In a library context, the top tier involves community-led practices and projects. Here, the barrier between the library and the user is eliminated and the user becomes a part of the library. In this tier, the library provides the structure, space, or resources, and invites the community to contribute. Community needs then guide actions. Projects in this tier are often high-profile, involving collaborations that leverage the resources of multiple libraries or library organizations. This tier goes hand-in-hand with the needs-based library as described by Pateman and Pateman (2017). Recognizing that Maslow's theory was not operable as a theory of social change, they incorporated the ideas of Karl Marx. With these they created a library spectrum that categorized libraries as either traditional, community-led, or needs-based libraries (*ibid*).

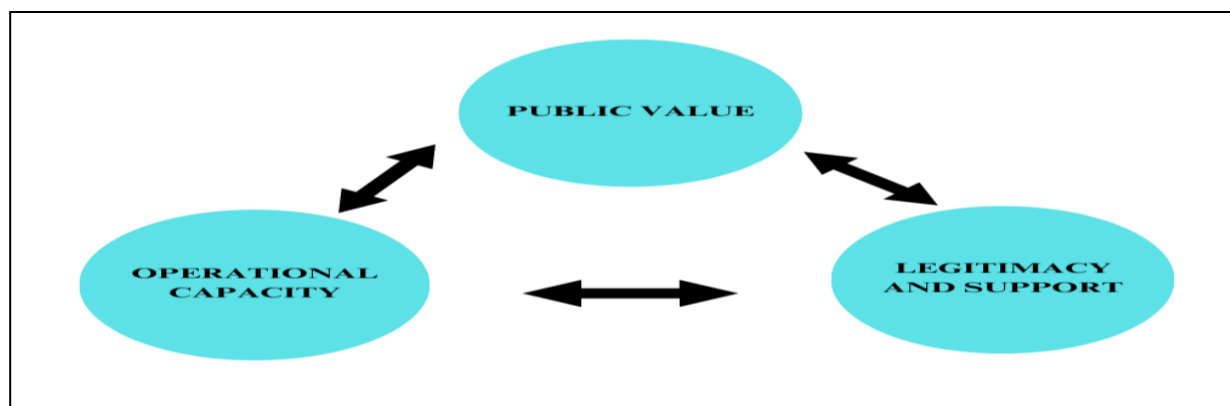


Figure 5: Strategic/Public Value, Strategic Triangle. Source: Moore, M., & Khgram, S. (2004), Public value, corporate social responsibility initiative working paper No. 3., Harvard University

The factors considered in these were:

- The strategy- who do the services cater to? How are the needs assessed?
- The staff structure - how are decisions made? What role do individuals play?
- The service structure - what is offered by the library?
- The system - what policies affect the library?
- The culture - how is the library perceived, managed, and used?

The needs-based library focuses on non-users, particularly those with the greatest needs. These needs are determined through co-production, in which the library and the community work. These are bundled together in the planning, design, delivery, and evaluation of performance. The residents and organizations in the community take a leadership role. They initiate and lead on issues while receiving support from the library. Services are delivered through partnerships with organizations.

The culture of these libraries ensures constant transformation and innovation, guided by values of social justice. The needs-based model of Pateman and Pateman (2017) and the Logan and Everall (2019) community tier concede that these levels may be quite idealistic. However, they are what libraries should strive for.

The Logan and Everall model suggests that a library should begin as a basic entity. It should have a collection and physical space, to function as a Minimum Viable Product (MVP). As it progresses, it can provide more services and act as a convenience to its patrons. The library can then become a connector, an incubator for ideas. Ultimately, the community itself can take on the role of the library by working together to determine what services are needed. Accordingly, it would partner with the library to achieve common goals. There needs to be a definitive description of what constitutes the role of the library as a convenience. The term convenience is quite broad and subjective. To what scale is convenience measured? Convenience could include access to a rare collection of books, online resources, and other materials that are not easily

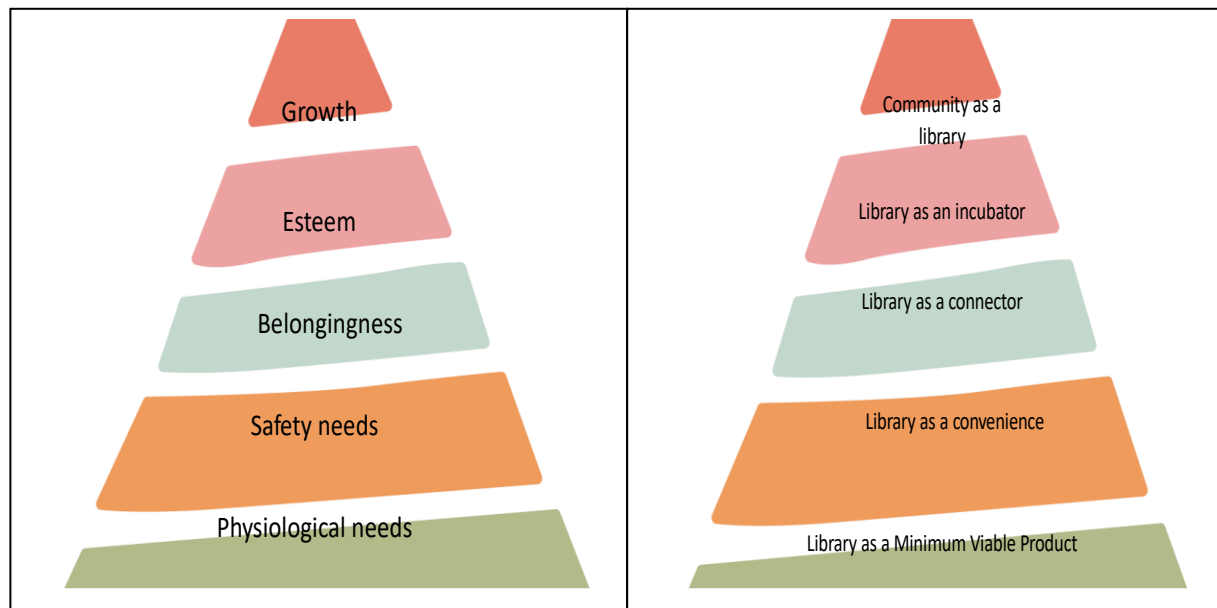
available elsewhere. The library serving its role as a connector and an incubator could also be described as being convenient. The term "convenience" can be subjective and varies depending on individual needs and preferences.

This portrayal can be misleading, eroding the distinct identity of libraries and reducing libraries to mere players in other people's social and economic agendas. Therefore, a question arises of what it is specifically that libraries do that cannot be done by any other institution. The mission and the means of the library must be distinguished one from each other (Ibid). The mission of the library, and the librarian, is to facilitate the creation of knowledge. It is not merely to provide access to knowledge. The means through which this can be done are endless (Ibid). Having this clear purpose gives libraries a steady foundation through the different eras and changing winds of time.

The preceding reflection reveals another reason that public libraries may be struggling, attracting dwindling public attention. This is the lack of a clear purpose for these institutions. Without a clear purpose, the means by which libraries deliver their services can become irrelevant to many people. To address this issue, public libraries should aim to define their purpose through a thorough understanding of the needs of their community. Once needs are clearly defined, they can be used to conceptualize a purpose that guides the services provided. Such services would be assured of user relevance. They would also be made accessible to all members of the community.

1.3.4 Theoretical Framework

The study posits that instead of a hierarchical pyramidal order of needs and services, the user needs-library relationship is a cyclic system. In this system, the needs of the community determine what services are provided in the library. On their part, community resources make the component of the Minimum Viable Product. The community's needs and the available resources dictate the library's mission and means respectively. Together, they therefore determine the Minimum Viable Product. Once the library fulfills this essential role, it can progress up the pyramid to address additional needs. These may include serving as a convenience, a connector, and an incubator. As these requirements are met, the community's resources may expand. With more resources, the nature of their needs may in turn shift. This cyclical process creates a positive feedback loop, perpetuating the library's mission to serve its community.



Figures 6 & 7: A distilled Maslow's Hierarchy of Needs and Logan and Everall Pyramid, Author¹, adapted to clarify parallel concepts from Logan, J., & Everall, K. (2019), *First Things First, Exploring Maslow's Hierarchy as a Service Prioritization Framework*. University of Toronto, 2(2). DOI: <https://doi.org/10.3998/weave.12535642.0002.201>;

1.3.5 Conceptual framework

The study sought to establish the fit of existing libraries with this conceptual framework. In so doing it identified points of intervention. These then pointed out the necessary levels of involvement of communities in the evolution or development of local libraries.

Each of the concepts featured was segmented into their constituent surrogates or attributes. These were further distilled down to measurement questions in the pre-coded checklists and questionnaires or structured interview schedules. This hierarchy of detailing assisted the study to narrow down to the very basic aspects and interactions of the issues under inquiry.

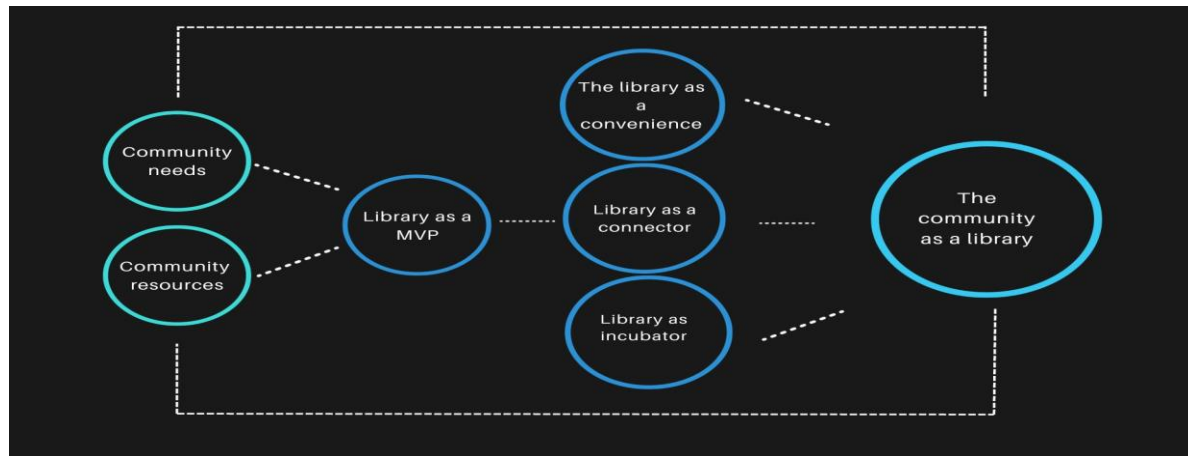


Figure 8: Conceptual framework. Source author¹, 2024, abstracted from Logan, J., & Everall, K. (2019), First Things First, Exploring Maslow's Hierarchy as a Service Prioritization Framework. University of Toronto, 2(2). DOI: <https://doi.org/10.3998/weave.12535642.0002.201>; (<https://quod.lib.umich.edu/w/weave/12535642.0002.201?view=text;rgn=main>).

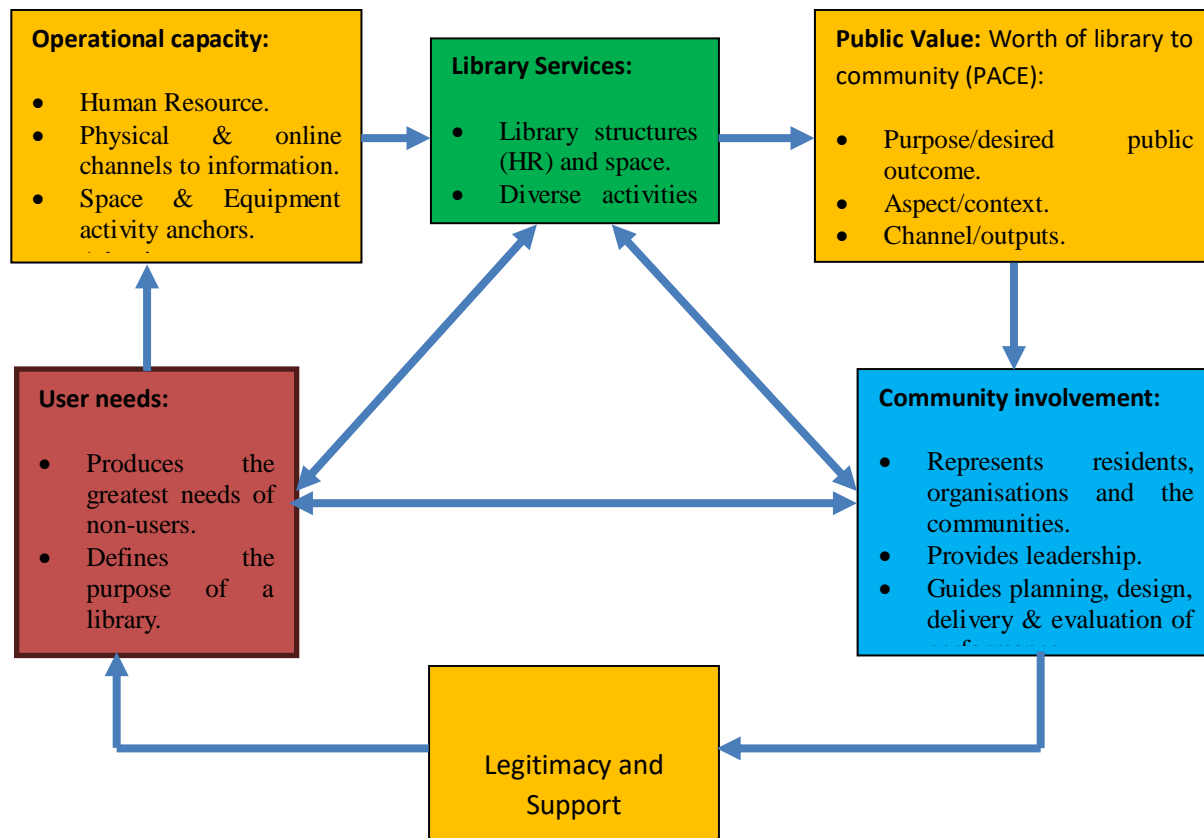


Figure 9: Idealised interaction of user needs, library services and community involvement. Source: Author¹, 2024, inspired by Moore, M., & Khgram, S. (2004)'s Strategic/Public Value, Strategic Triangle; and abstracted from related discussions on community library.

1.4 Objectives and their correspondence to the Research Design

Libraries are places that help people to figure out the complexities of life (Marchal, 2007; Collins 2015; Brookings, 2017; Programming librarian, 2023). It is a truism that the nature of people's needs continually changes. There is however no explicit direction for the role that will define next-generation libraries. This inquiry sought to close this gap by having an in-depth understanding of what libraries. It seeks determine what their current form and that for the years ahead, must consist of. Through refinement and redefinition of user needs, the study sought to outline meaningful recommendations for libraries. Libraries could then apply these to offer value to diverse groups of uses. These would include young children in their early development stage. It would also touch young adults who are in the growth phases of their careers. Adults who are in different professional fields, and the elderly would be embraced here too.

Such alignment would result in the patronage of library services and premises continuing to be high. A library-user-focused design philosophy would position the library as a place to improve the quality of life of individuals in a community. This transformation would then spread into the society at large leading to societal well-being and economic progress. In effect, the study will help the public library to become a key actor in socio-economic development.

1.4.1 Specific Objectives

1. To delineate contextual user needs of libraries.
2. To identify the contextual form and designs of libraries.
3. To evaluate the interplay between user needs and the architectural form and design of libraries.

1.4.2 Primary and Secondary Research Questions

1.4.2.1 What are the observed and declared needs of library users that emerge from their demographic and socio-economic contexts?

- What do the different ages, gender and income levels, cultural sets, occupations and educational levels of users need in libraries?
- What adaptations do users require of the physical spaces in libraries now that information can be accessed virtually for alternative use?
- What needs of social engagement, participation, self-improvement, and referencing do libraries fail to meet for non-users that keeps these potential users away?

1.4.2.2 What are the contextual forms and designs of libraries?

- What are the different types, scales and disposition of spaces were observed to have been provided in libraries?
- How are the library spaces adapted to meet the needs of different users in terms of configuration, adjacency, access, and overall building function?
- What programmes are offered in the libraries that adapt well to the spaces available and identified user or community needs?

1.4.2.3 What is the interplay between user needs and the architectural form and design of libraries?

- Do library designs with respect to spatial configuration, building function and forms match user expectations by offering sufficient, comfortable accommodation that users can identify with?
- How do the spatial configurations, building form and overall design of libraries reflect the local culture and context?

2. Method

The study selected one library each using judgemental sampling from the low-income, middle-income, and high-economic zones of the City County of Nairobi. Each of these libraries was then interrogated as a case studies. The study methodology and approach employed an inductive, descriptive, qualitative design. The principle of inductive reasoning used here aimed to form general conclusions based on specific observations. To this extent, this design is descriptive, addressing what, when, where, and how, but not why, of the phenomena under inquiry. It focused on judgmentally or purposively selected case studies. It therefore acquired data through surveys, interviews, and observations. Such data was thereafter analysed for patterns and themes. These then led to, findings or results that suggested necessary remedial or follow up actions. Emerging out of such findings would be theories, concepts, hypotheses or generalisations. To this extent, it generalized theory from specific observations.

The form and shape as well as the content of the field work was anchored on a comprehensive literature review. This review sought to discern the needs individuals exhibited across diverse developmental stages. Exploration of thought here provided valuable insights into the multifaceted dimensions of user requirements. Subsequently, a critical review was undertaken to unveil how libraries could effectively address these identified needs. The ensuing appraisal culminated in the formulation of a comprehensive checklist. Featured here was the key design concepts and considerations that libraries must embody. To ground these theoretical constructs in real-world scenarios, case studies of selected libraries were done, delving into how they operated. The observations made here were then cross-referenced against the previously established checklist, to reveal challenges and areas for improvement. Following this, a detailed analysis was conducted. It relied on the data from the observational study to identify key issues in current library practices. The insights elicited recommendations aimed at propelling libraries toward a more user-centric and effective operational model.

The case studies offered valuable real-world illustrations of how the theoretical framework explored in the literature review operates in practice. They were well selected to enable a thorough, in-depth review of the issues of interest in this study. Library services were categorized according to predefined needs, such as convenience, incubation, and connection, while the unique characteristics and active participation of the community were integrated into the concept of the community as a library. The likelihood of a data overload that is characteristic of case studies was countered by reliance on pre-coded checklists to guide all observations. The study did not seek generalisation given its reliance on case studies. It also did not seek to establish causal relations, but rather prioritised detection of patterns of behaviour and space use.

To prevent disruptions of library user activities, the level of interaction permitted with library users was limited. To mitigate this, sketches were used. Unstructured interviews were also preferred over structured ones. This shortened the interview process appropriately. Overt and naturalistic observations were made of space layouts and patterns of use in the case studies. Given the likely bias inherent in case studies of researcher opinions and preferences, complementation was sought from interviews. In this regard, unstructured interviews with library personnel serving this study as key informants were used. The latter category of respondents provided considerably more detailed information about library operations and user engagement. These discussions revealed important aspects such as the most frequented programmes. Here insights on the activities users engage in most frequently came into view. Also detected were the ongoing initiatives aimed at enhancing service delivery. Emerging findings are represented in the results and discussions as well as in the subsequent conclusions and recommendations.

A public survey was also deployed to gauge the preferences and expectations of the future that users had. This user-driven approach ensured that the study was not only grounded in theoretical constructs. Rather, it was also deeply attuned to the actual desires of the communities that libraries serve. The public sample survey was conducted with non-users particularly those with formal education, in order to explore their reasons for not utilizing library services. Such respondents could not be captured in a controlled physical setting like the library and were therefore not amenable to a case study method. The survey sought to determine whether barriers to access existed or if their needs were being met through alternative means. For cases where barriers were identified, respondents provided constructive suggestions for improving library services, offering a roadmap for making libraries more inclusive and responsive to a broader audience. The likely low validity and reliability of surveys where constructs were not accurately projected in questions and in instances when respondents gave misleading response were countered through careful construction of questions, use of control questions, and direct question administration to respondents.

2.2 Data collection Methods

2.2.1 Case Study Method

The case study method here embraced the following considerations (Groat, 2013):

- A focus on single or multiple cases in real-life contexts.
- A capacity to explain causal links.
- An emphasis on theory development in the research design phase.
- A reliance on multiple sources of evidence, with data converging in a triangular fashion.
- The power to generalize to theory where necessary and if possible.

The research examined libraries in diverse socio-economic urban contexts (low, middle and high income). It observed their operations, and thereafter provided recommendations for improving efficiency and alignment with user needs.

2.2.2 Observations

Case study site visits to the three libraries and review of drawings, provided insights into the various spaces and their adaptability to different age groups and special needs. These were documented through pre-coded checklists, notes, annotated sketches and photographs.

2.2.3 Interviews

Semi-structured schedules enabled interviews with technical and management staff members in order to gain insights into library usage and challenges. Unstructured interviews with library users revealed their motivations, confirming too the most utilized services.

2.2.4 Surveys

A public survey using guided interviews that relied on structured interview schedules investigated potential obstacles preventing library use and identified gaps in library services.

2.3 Target Population

The target population included all users and staff who meet the specified criteria for the research investigation (Willie, 2022). The fieldwork focused on public libraries in Nairobi, targeting libraries in residential areas. Public libraries were characterized by being publicly funded, open to all without discrimination, and providing free services.

2.4 Sampling Frame

The sampling frame was defined by the economic zone where a library was located. It issued out the following libraries from different income levels which were selected for study:

- Low-income: Kaloleni Library.
- Middle-income: Buruburu Library.
- High-income: Maktaba Kuu Library.

2.5 Secondary Data

A comprehensive analysis of census data was conducted to establish the general demographic characteristics of the community in each zone.

2.6 Data Processing and Analysis

Thematic analysis was used for data analysis, involving reading through the data to identify patterns and themes. This method emphasizes reflexivity, with the researcher’s subjective experience central to interpreting the data (QuestionPro, 2023).

3. Results & Discussions

3.1 Kaloleni Library

3.1.1 Demographic information

Kaloleni Library is located in Kaloleni constituency, City County of Nairobi. Based on a socio-economic profiles obtained, it emerged that the majority of Kaloleni's inhabitants were self-employed, with many working in the Jua Kali sector as plumbers, masons, and electricians.

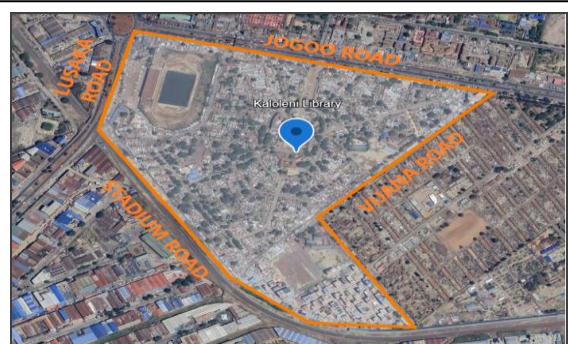


Figure 10: Location map of Kaloleni Constituency. Source- Author¹, 2024.

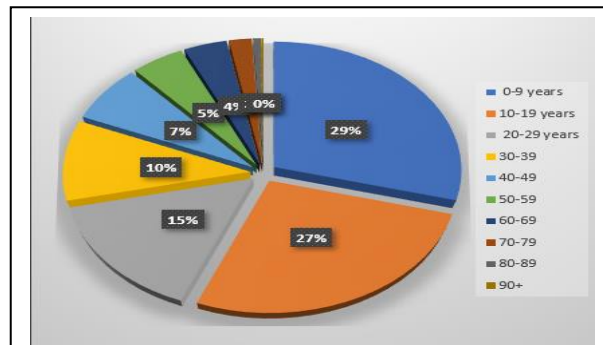


Figure 11: Age distribution in Kaloleni. Source- Author¹, 2024.

The average income in the area ranged from Kshs 6,000 to 15,000, primarily earned by watchmen and industrial workers. Additionally, a significant portion of the population engaged in odd jobs, earning around Kshs 300 per day. The most prevalent businesses in Kaloleni were general retail shops and M-Pesa vending. The latter is a mobile phone based money transfer service, payments and micro-financing services. Most community members were focused on meeting their basic physiological needs. Adults were therefore less likely to utilize library services. Therefore, libraries here should aim to enhance the convenience of its services to better serve the community.

3.1.2 The Library as a Convenience

3.1.2.1. Diversity of Spaces

The library is a versatile, one-story structure where all functions occur in a single open area, with bookshelves strategically placed to demarcate different sections. This flexible design allowed for easy adjustments to meet changing user demands.

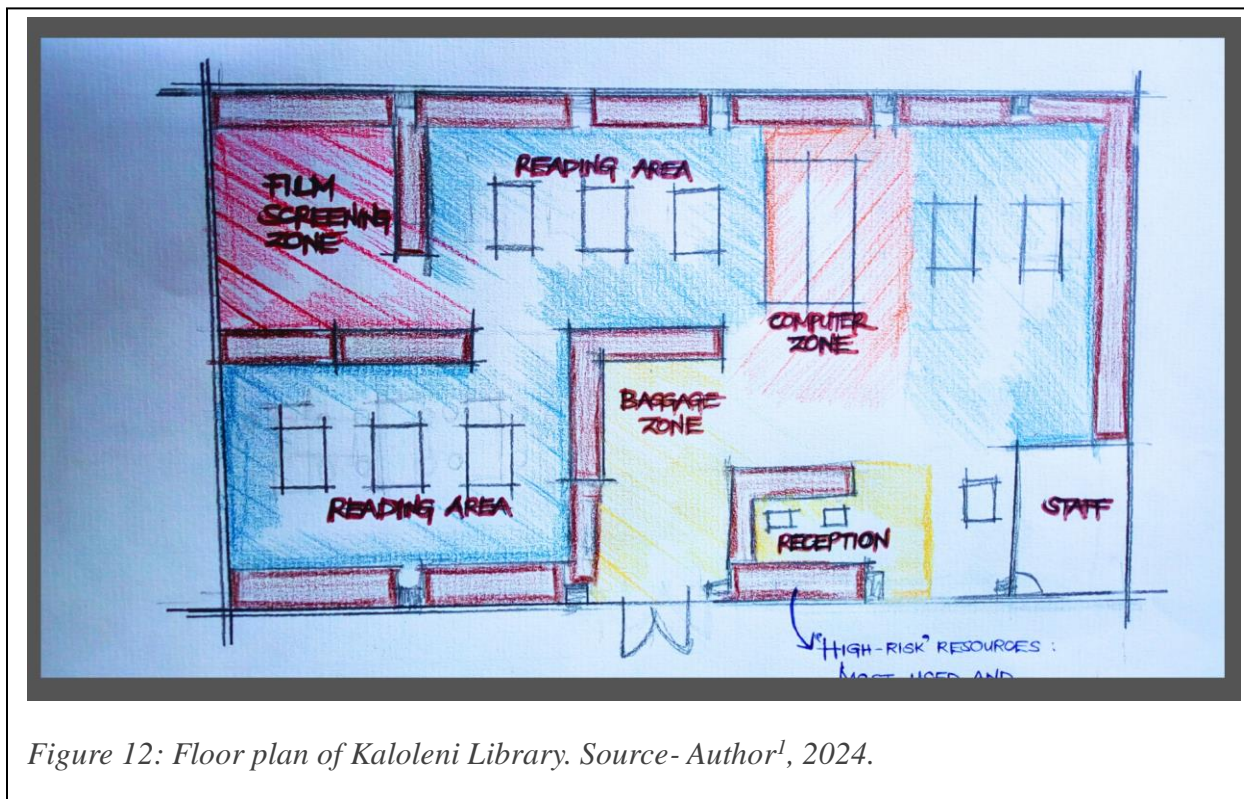


Figure 12: Floor plan of Kaloleni Library. Source- Author¹, 2024.

For instance, bookshelves could be conveniently relocated to create more space in areas experiencing higher traffic. The library featured several designated areas, each serving a specific function. Such for instance were a reception area, a luggage zone, a reading area, an e-resource zone, a film screening area, and an outdoor reading area.

3.1.2.2 The Library as an Incubator

The library plays a crucial role in children's education, providing additional learning resources that complement their school curriculum. It serves as an excellent incubator for young minds, fostering intellectual growth. However, for adults, the library's impact on fulfilling their esteem needs is less pronounced.



Figures 13-15: The different spaces are demarcated using bookshelves and different floor finishes at Kaloleni Library. Source: Author¹, site photographs, 2024.

3.1.2.3 The Library as a Connector

Through the Book Bunk Trust, the library offers various programmes for children that facilitate social connections. Notable ones here include:

- Dance Bunk: Choreographed dance sessions.
- Play Bunk: Table games such as scrabble, chess, and monopoly.
- Art Bunk: Various art techniques, including painting, sketching, and still-life drawing, culminating in an exhibition and certificate awards.
- Music Bunk: Professional tutelage in playing different instruments, ending with a performance and certificate awards.



Figure 16: Posters for the Book Bunk events. Source¹: bookbunk.org, 2023.

These programmes connect children and young adults and contribute to their esteem by teaching new skills and celebrating their achievements. Parents also find opportunities for bonding and socializing as they celebrate their children's successes.

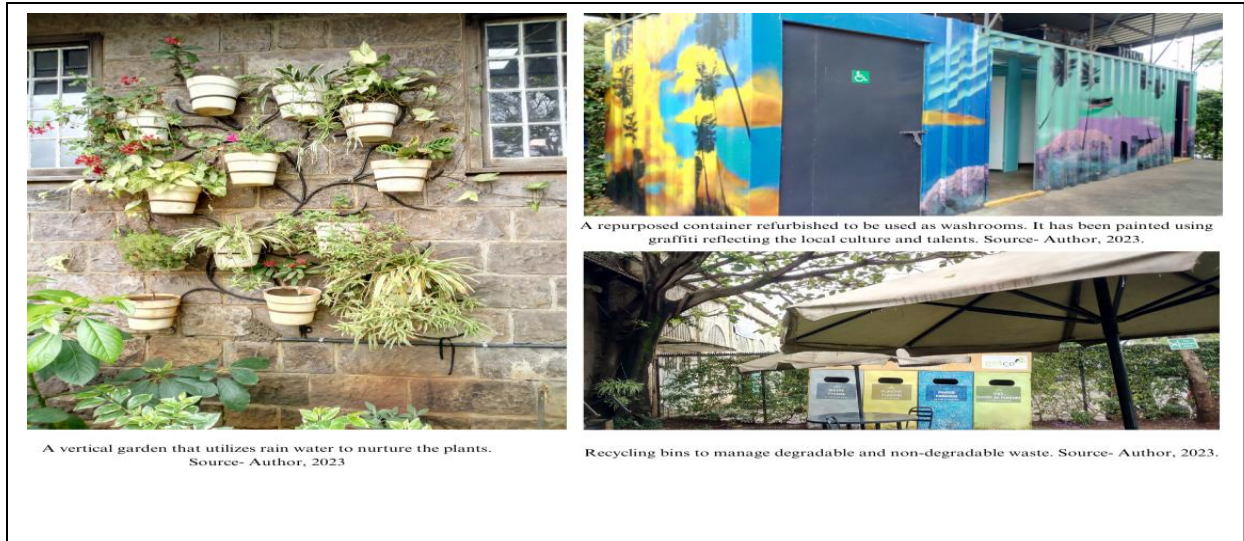
3.1.2.4 The Community as a Library

3.1.2.4.1 Community resources

The library is a testament to community involvement, with contributions in various forms:

1. **Manpower:** The community played a pivotal role in the library's restoration, forming the primary workforce for reconstruction and artistic design.
2. **Materials:** The washrooms, made from repurposed containers and in their adornment with graffiti, reflect the community's engagement in Jua Kali (informal manufacturing) and artistry.

3. Sustainability: Green Bunk's initiatives include rainwater harvesting, a vertical plant system maintained through a piping system, and ongoing waste recycling efforts.



Figures 17-19: Vertical garden decorated re-purposed container washrooms and attractive recycling bins. Source: Author¹, site photographs, 2024.

The library represents the community manifestly. Public meetings held before the restoration allowed community members to express their needs. They then pooled resources to bring the project to fruition. There clearly were close relationship between the librarians and users. There were also distinct ties between the local artwork, and the materials used. These links underscore the reality that this library was truly developed by the community, for the community.

3.2 Buruburu Library

3.2.1 Demographic information

The library is situated in Buruburu Estate, a popular residential area within Makadara Constituency, City County of Nairobi. Buruburu is easily accessible by road and rail and is conveniently located near Nairobi city center.

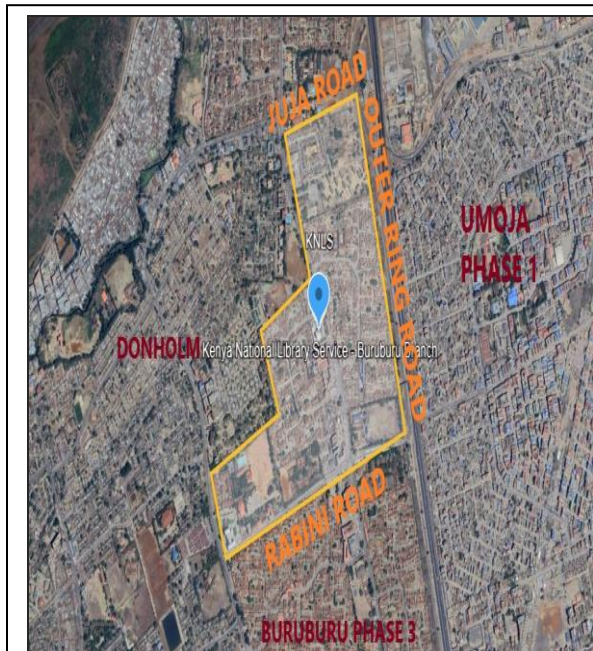


Figure 19: Buruburu Library Location

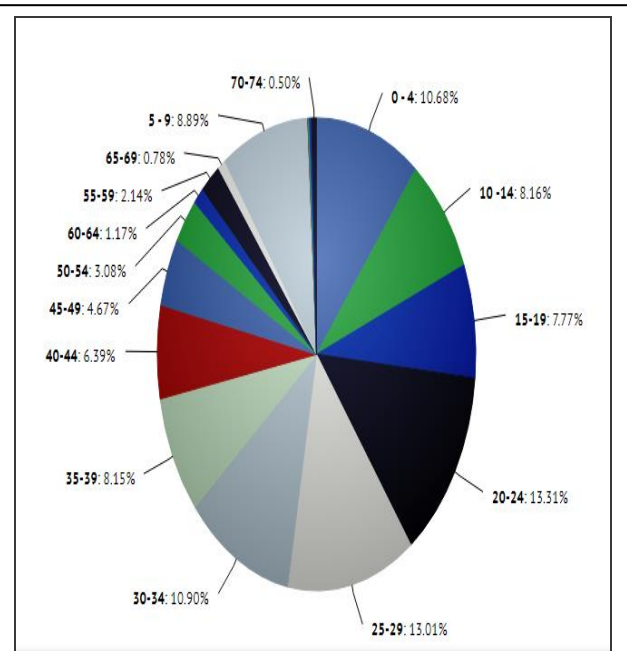


Figure 20: Age distribution in Makadara.

The estate boasts a large population and a variety of business ventures. These include residential flats, and matatu (minibus) transport services. There are also hotels, clubs, supermarkets, private primary and secondary schools, colleges, and a thriving furniture industry. Additionally, the area hosts numerous second-hand clothing and shoe vendors. Complementing these were also vegetable and fruit markets, guest houses, and technology service industries. Buruburu's population was fairly evenly distributed across age groups. It displayed a significant proportion of teenagers and young adults. Consequently, the library must cater to the diverse needs of its residents. It must offer study areas for older students and interactive learning spaces for younger children.

3.2.2 The Library as a Convenience

The library is a versatile, four-story structure designed to serve various functions across its different floors.

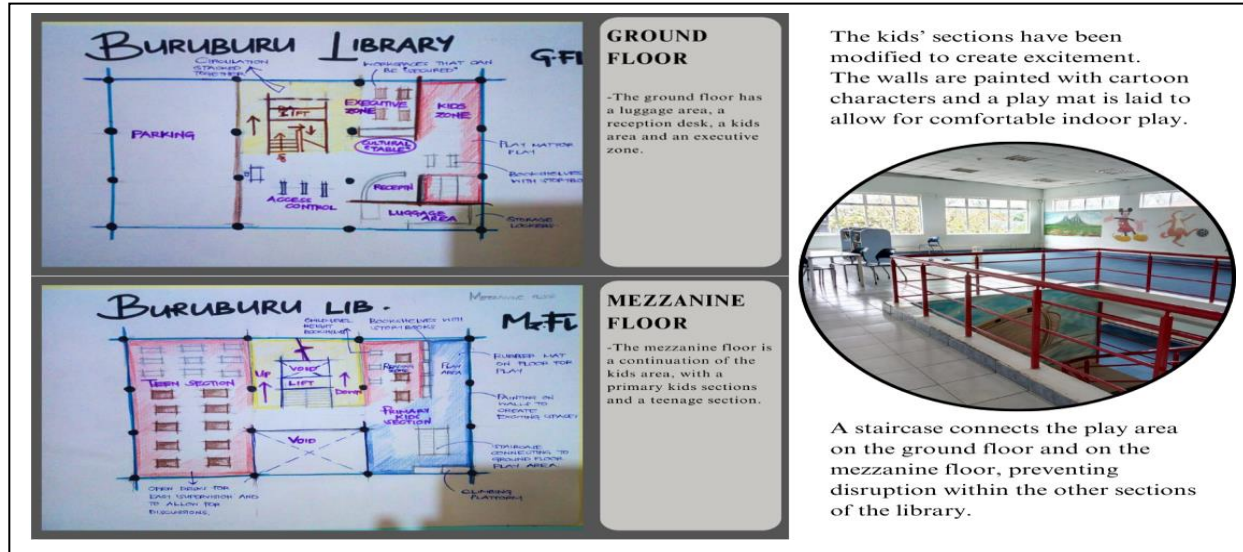


Figures 21-23: Spaces are defined using floor levels and wings. Source- Author¹, site photographs, 2024.

first two floors were dedicated to children and teenagers. The children's play area featured walls adorned with colourful cartoon murals and a carpeted floor for safety. A separate staircase connects the first floor to the mezzanine, combining two play areas. To ensure security and autonomy for the children, adults (except for tutors) were prohibited from using these sections.

3.2.2.2 First Floor Amenities

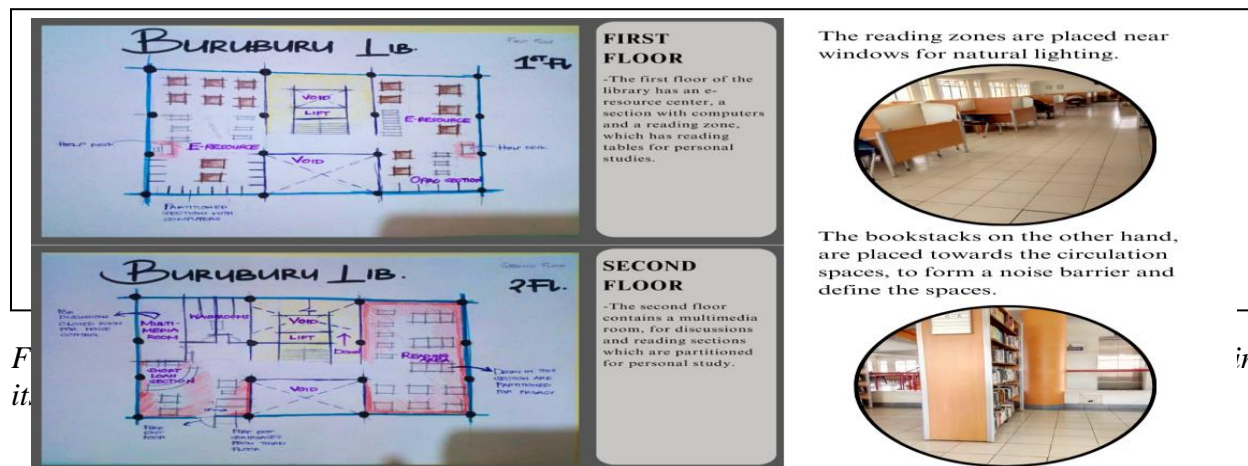
The first floor offered an e-resource zone, a multimedia room for discussions, and several personal reading areas, providing a range of options for users.



Figures 24-26: Buruburu library as a convenience embracing multiple well customised functions in its two-storey layout. Source- Author¹, 2024.

3.2.2.3 Administration

The topmost floor was dedicated to administration, ensuring privacy and preventing disruptions, as it was not accessible to the public. Overall, the library provided ample convenience for its patrons. It catered for the diverse needs of children, and teenagers, and administrative functions in a well-organized manner.



3.2.2.4 Accessibility

The library was equipped with a lift and a ramp, ensuring accessibility for all users. Overall, the library offered adequate convenience for its patrons.

3.2.3 The Library as an Incubator

The library provided financial literacy classes while it also supported children's educational advancement, making it a valuable incubator for young minds. It was also supportive of the endeavours of white-collar workers. To enhance its role as an incubator, the library could explore ways to support the growth and development of blue-collar workers.

3.2.4 The Library as a Connector

The library currently featured a multimedia room but lacked spaces to facilitate discussions or natural social interactions. Desks with partitions prioritized personal and quiet study. To become a better connector, the library should create more areas that encourage patron interaction.

3.2.5 The Community as a Library

The design of library primarily utilized steel, concrete, and glass, with little representation of the local culture. This lack of cultural reflection may have been due to the diverse and large base community. It possibly may have been challenging to pinpoint a defining cultural characteristic. Enhancing the library's representation of local culture could foster a stronger sense of community ownership and pride.

3.3 *Maktaba Kuu*

3.3.1 Demographic Information

The library is situated in the Community Area of Nairobi, surrounded by a demographic of young professionals working in various fields. It is located near numerous government and private offices as well as a variety of businesses.

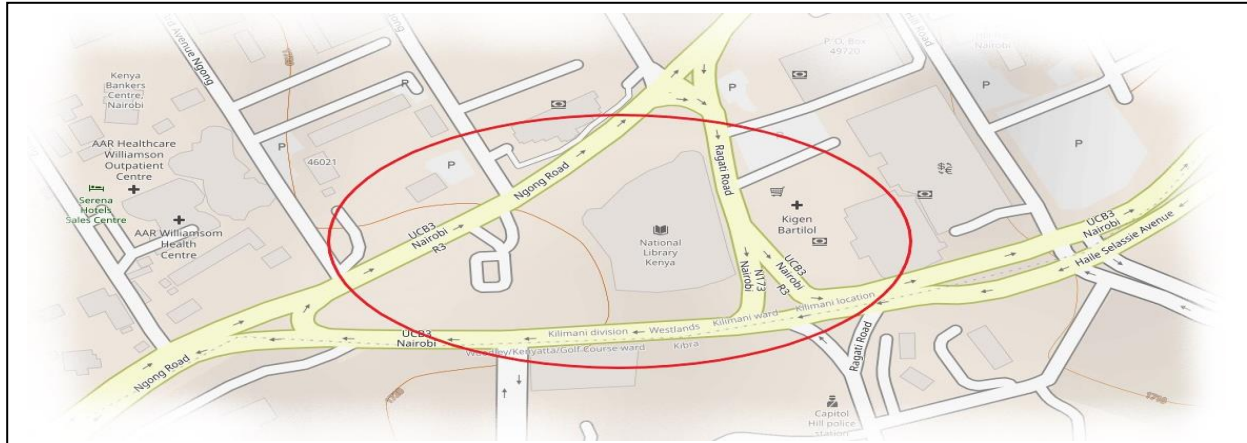
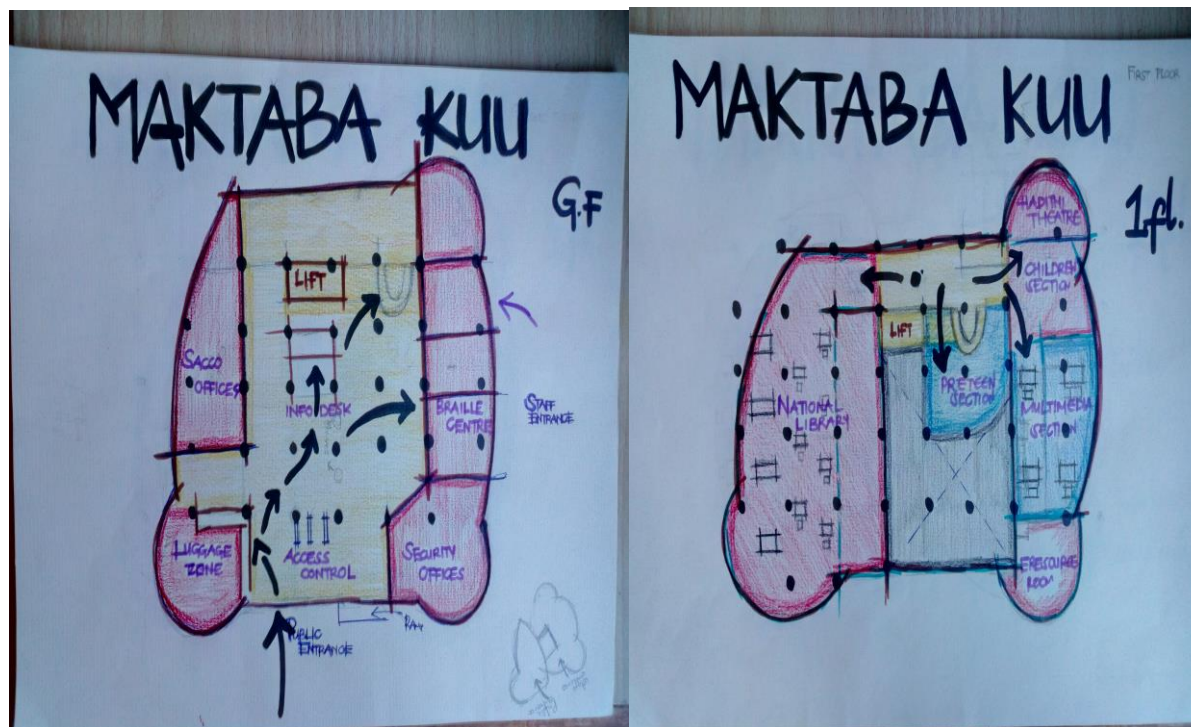


Figure 31: Location map of Maktaba Kuu. Source- Author¹, 2024.

3.3.2 The Library as a Convenience

3.3.2.1 Accessibility

The library was designed to be fully accessible, featuring ramps on every floor and a lift for wheelchair users. It also included a Braille room equipped with Braille books and screen readers to accommodate visually impaired patrons.



Figures 32 & 33: Ground floor and first floor plans. Source- Author¹, 2024.

3.3.2.2 Technology Provisions

The library offered reliable Wi-Fi and power outlets in every space. The computer room was temporarily closed due to water damage. Despite this, the virtual library provided access to a selection of books and reference materials. Similar to using the physical library, patrons could register as members and pay a fee to access the complete collection. The virtual library also catered to users with poor eyesight or low vision by offering image enlargement and an image reader. Most users brought their laptops to work within the library, making the availability of technology and connectivity essential.

3.3.2.3 Diversity of spaces

- Children's section: This area featured ergonomically adapted furniture, a collection of storybooks, and a play area designed for children.
- Elderly section: It was located in the quietest part of the building. This section included comfortable leather sofas, and games like scrabble and chess. Additionally, there was a book collection tailored to the elderly, such as those on retirement and health.
- Teen section: This area contained a variety of fictional novels across many genres.
- Pre-teen section: Currently an extension of the teen area, this space provided additional seating but lacked specific resources for pre-teens.

- Staff section: These areas were partitioned off from the rest of the library and included a separate entrance for staff.



Figures 34 & 35: Reading sections. Source- Author¹, 2024.

The library excelled in convenience by catering to all age groups, diverse study modes, and differently abled individuals. However, it could enhance services by further specializing in each space. For instance, the pre-teen section could include magazines, journals, and audio-visual materials of interest to pre-teens.

3.3.3 The Library as a Connector

The library was primarily adapted for personal study but included spaces for meetings and discussions, such as multimedia rooms. The outdoor breakaway areas were open-to-sky spaces that allowed users to take a break without leaving the library. They provided excellent opportunities for interaction.

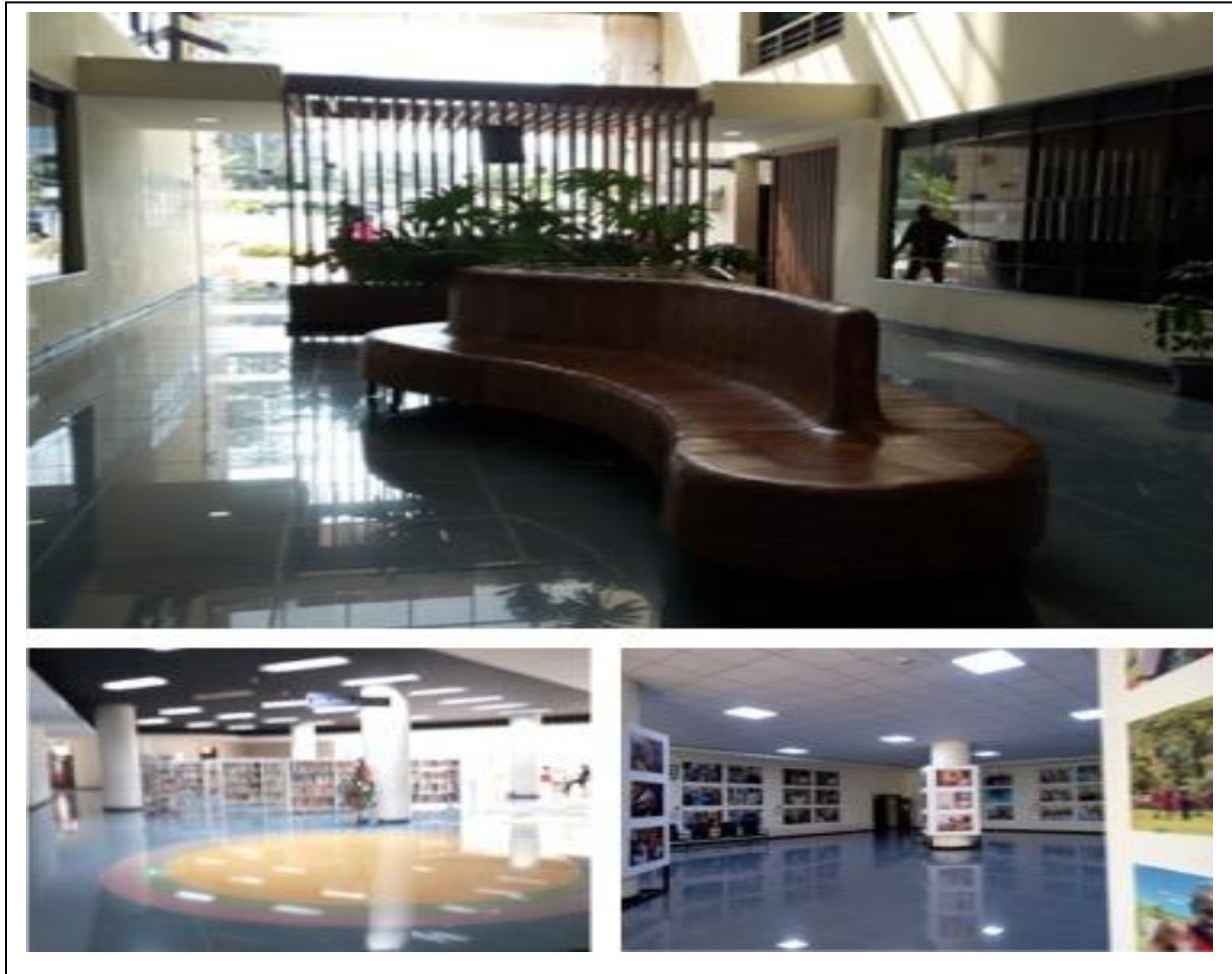


Figure 36: Breakaway area. Source - Author¹, 2024. Figure 37: Auditorium. Source - Author¹, 2024.

The library hosted a variety of programmes and events, including talent shows, story reading sessions, movies, spelling bees, poetry recitations, and art sessions. Auditoriums were specifically provided for these activities. Overall, the library effectively met the connection needs of its patrons.

3.3.4 The Library as an Incubator

The library offered carrels for a daily fee of 100 Kenya shillings, providing individual study spaces with heightened privacy. These were mostly used by higher education students and freelancers who needed focused study or meeting spaces. The auditoriums could also be rented, allowing individuals and start-up companies to hold professional meetings or events. Digital training was provided for the personnel to ensure they could assist patrons effectively. The library offered cloud services, co-location services, and virtual private services through the Uvumbuzi Centre. This supported the growth of organizations that lacked the required manpower. In these ways, the library served as an excellent incubator for both educational and professional growth.



Figures 38-40: Spaces are defined using floor levels, access control and different circulation routes. Source - Author¹, site photographs, 2024.

3.3.5 The Community as a Library

The library's design concept was inspired by African drums, historically used for communication by many African communities. Art was incorporated through murals and sculptures on columns, representing the African way of life. Outreach programmes, such as mobile library services and educational support for prisoners further strengthened the library's connection to the community. The library represented the nation by serving the community and incorporating African cultural elements into its design. This gave it an important regional context. It also fosters a sense of identity and pride.

3.3.6 Condensed space use, disposition and spatial configuration case study findings from observations




By virtue of existence, the libraries met the Minimum Viable Product. The illustrations included here below summarises this observed profile.

The Library as a Convenience

	Kaloleni Library		Buruburu Library		Maktaba Kuu Library	
Lighting	The library had both natural and artificial lighting	✓	The library had both natural and artificial lighting	✓	The library had both natural and artificial lighting	✓
Ventilation	The library had sufficient windows and air conditioning	✓	The library had sufficient windows and air conditioning	✓	The library had sufficient windows and air conditioning	✓
Technology	The library had an E-resource table with computers	✓	The library had an E-resource zone	✓	The library had an E-resource room	✓
Accessibility	The library had an outdoor ramp	✓	The library had an indoor ramp, and a lift	✓	The library had ramps on all floors, a braille centre	✓

Table 1: Performance of the three libraries surveyed on the convenience aspect libraries. Source - Author¹, field data.

The Library as a Connector

Kaloleni Library	Buruburu Library	Maktaba Kuu Library
 <p>Source: bookbunk.org,2024</p>	 <p>Source: Gatamu 2024, on-site photos</p>	 <p>Source: Gatamu 2024, on-site photos</p>
<p>Desks are partitioned Multimedia room was available</p>	<p>Breakaway areas are available</p>	<p>The library meets the expected connection needs of the population</p>
<p>The library does not offer ample opportunities for connection</p>	<p>The library offers opportunities for connection but there remains room for improvement e.g. by making the spaces more comfortable</p>	

Figures 41-43: Performance of the three libraries surveyed on the connector aspect libraries. Source - Author¹, field data.




The Library as an Incubator		
Kaloleni Library	Buruburu Library	Maktaba Kuu Library
 <p>Source: bookbunk.org,2024 Source: Gatamu 2024, on-site photos</p>	 <p>Source: https://www.nationalcareforum.org.uk/sustainability/green-funding-opportunities/</p>	 <p>Source: Gatamu 2024, on-site photos</p>
<p>The library meets the incubation needs of the children but none of the adult population which mainly consists of blue-collar workers</p>	<p>The library meets some incubation needs but has room for improvement</p>	<p>The library meets the incubation needs of the population</p>

Figure 44-46: Performance of the three libraries surveyed on the connector aspect libraries. Source - Author¹, field data, 2024.




Community as a Library		
Kaloleni Library	Buruburu Library	Maktaba Kuu Library
 <p>Source: Gatamu 2024, on-site photos</p>	 <p>Source: Gatamu 2024, on-site photos</p>	 <p>Source: Gatamu 2024, on-site photos</p>
<p>The community has ample representation in the library, it was heavily involved in the construction of it</p>	<p>The community has little representation in the library.</p>	<p>The design of the library is inspired by the African drum as a symbol of national unity.</p>

Figure 47-49: Performance of the three libraries surveyed on the connector aspect libraries. Source - Author¹, field data, 2024.

3.4 Survey Findings

A total of 39 respondents participated in the survey consistent with the threshold of the central limit theorem of N = 30. The information acquired from this sample is summarized here below:

3.4.1 Information acquisition preference

When asked to rank their preferred ways to acquire information, the respondents ranked them as follows, from most to least preferred:

1. Websites and mobile apps.
2. Documentaries and podcasts.
3. Online classes.
4. Study groups.
5. Libraries.
6. Workshops.
7. Seminars.

A good number of respondents (47%) visited the libraries to obtain reference materials for research or academic assignments. The libraries provided an extensive collection of books, journals, and other resources not readily available online. Additionally, the libraries offered a serene ambience conducive to studying. This was highly preferred by some visitors for concentration and focus. However, few respondents used digital resources in libraries, citing the lack of provision of these resources as a barrier. Libraries that offered digital resources provided a more convenient and efficient way of accessing information for those who preferred them.



Figure 50: Preferred ways of acquiring new information. Source - Author, field data, 2024

While most respondents (90%) felt they could readily acquire information online, they still considered libraries relevant to their needs. Fewer respondents (17%) cited operating hours and location as barriers. Some respondents avoided libraries due to discomfort, finding the environment stuffy, poorly ventilated, and lit. Prohibitions on food and drinks and issues with Wi-Fi buffering also deterred some users.

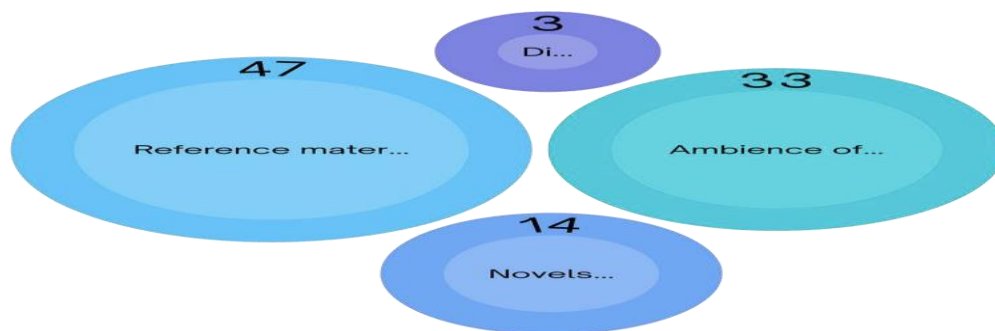


Figure 51: Reasons for using the library. Source - Author¹, field data, 2024.

3.4.2 Interest in Programmes

Most respondents (80%) expressed interest in cultural programmes such as art exhibitions, music performances, and film screenings. Fewer respondents (30%) were interested in educational programmes like author talks, workshops, and language learning clubs.

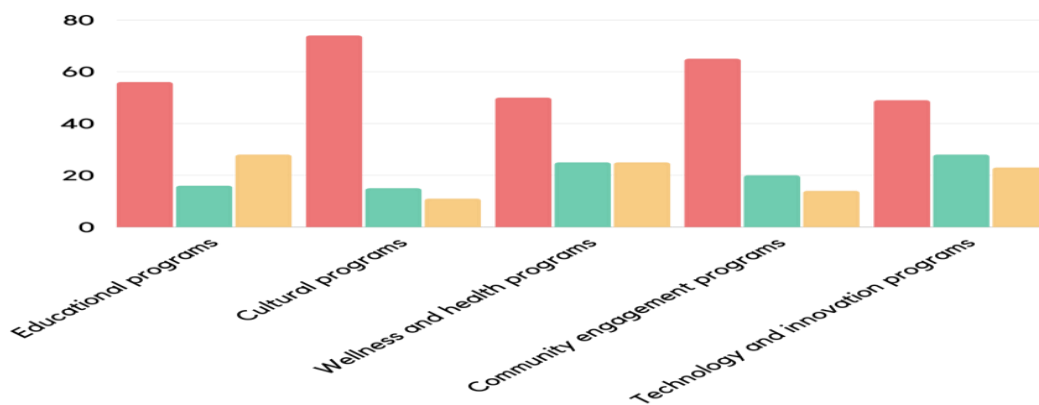


Figure 52: Reasons for using the library. Source - Author¹, field data, 2024.

3.4.3 The Library as a Convenience

Respondents suggested several improvements to enhance the library's convenience:

- Inclusion of "noisy spaces" for music and discussions without disturbing others.
- More break-away services, such as PlayStation areas, gaming zones, and food outlets for users to relax between study sessions.
- A more relaxed atmosphere with bean bag seats or swinging seats for leisure reading and a homely feel.

3.4.4 The Library as an Incubator

Suggestions for how libraries could support personal, and career development included:

- Hosting debating forums.
- Mentoring programmes and career guidance services.
- Innovation hubs.
- Virtual Reality learning environments.
- Plagiarism check services for researchers.

3.4.5 The Library as a Connector

Users suggested creating mixed lounges similar to cafés, with an ambient atmosphere and non-disruptive background music to foster social interaction.

3.4.6 The Community as a Library

The respondents expressed a strong interest in cultural programmes, including:

- Art exhibitions and galleries.
- Music sessions and live performances.
- Film screenings.

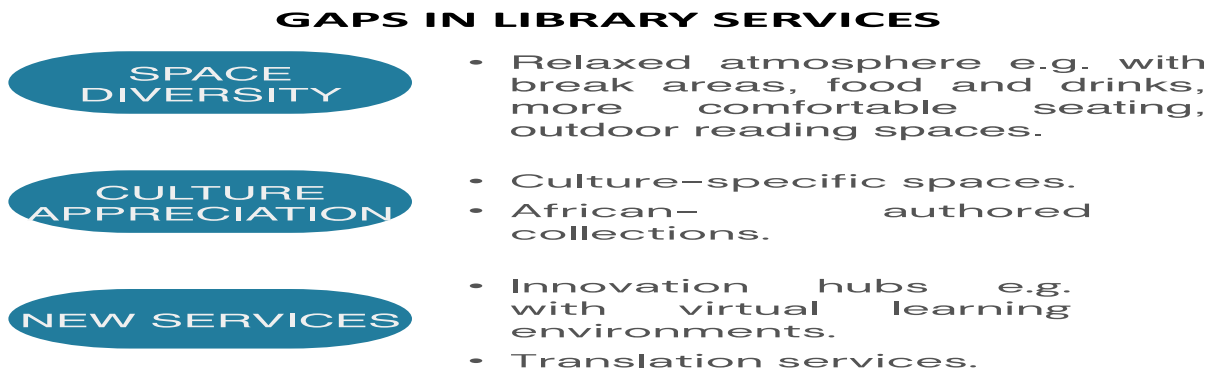


Figure 53: Gaps in library services identified by respondents. Source - Author¹, field data, 2024.

Educational programmes, such as author talks, book discussions, and language learning, were also of interest. Additionally, respondents showed enthusiasm for community engagement programmes, including volunteering opportunities, social events, and meet-ups. By implementing all these suggestions, libraries could better meet the diverse needs of their users. This made them more inclusive, engaging, and supportive of personal and professional growth.

Areas for improvement

		Kaloleni Library	Buruburu Library	Maktaba Kuu Library		
The library as a convenience	✓	Introduce relevant services for adults.	✓	Introduce services for the differently abled e.g., blind and deaf.	✓	Enhance the spaces provided. (customize the furnishing in different zones).
The library as a connector	✓	Introduce activities for adults (e.g., exhibitions for local art).	✗	Introduce break away areas.	✓	Make the breakaway areas more comfortable i.e. furnishing.
The library as an incubator	✗	Hold exhibitions and art shows to provide market for local art.	✓	Introduce programs for entrepreneurs (business expos).	✓	Create more awareness of the services offered through marketing.
The community as a library	✓	Provide flexibility in operating hours to accommodate daytime workers.	✗	Incorporate art in the spaces made by locals.	✓	Incorporate African art in all the spaces as opposed to just the ground floor.

Figure 54: Areas suggested by respondents where the three libraries can improve their service offer. Source - Author¹, field data, 2024.

4. Conclusions

General conclusions are drawn here from the findings acquired and these are ordered into the following different themes in which they arose most prominently.

4.1 The Library as a Minimum Viable Product

By existing, the libraries already met the minimum viable product, which is to provide books and the space to read them.

4.2 The library as a convenience

4.2.1 Diversity

All the libraries in the case studies had taken a proactive approach to ensure that their facilities were accessible to all users, regardless of age or physical ability. To achieve this, they had implemented a range of modifications designed to cater to different needs and purposes. For example, libraries had created designated spaces for quiet reading, collaborative group work, and technology usage. Many modifications had been focused on creating dedicated spaces for children. An associated recommendation was for libraries to consider providing a range of spaces for adults too. This could include areas for quiet work, collaborative projects, or simply for relaxing with a good book.

Among the libraries studied, only Maktaba Kuu had provisions for the elderly. The rest of the libraries did not have any special services or resources designed to cater to the needs of the elderly. Libraries could consider including services for the elderly ranging from providing reading materials with larger print, to offering audiobooks. Access to computers with assistive technologies was also important. Organizing reading clubs and events that catered to the interests of the elderly can add much value here too. Such initiatives would enhance the experience of the elderly at the library. It would also prove to be a much-needed resource for the elderly who relied on libraries for their intellectual and social engagement.

4.3 The library as a connector

4.3.1 Break-away areas

In general, the libraries did not have enough designated breakaway areas or different spaces for social connection. Even where provided for such as in the Maktaba Kuu, the lounge could benefit from additional furniture pieces like comfortable chairs that promoted relaxation and socialization. Adding seating spaces in the lounge area would encourage more informal discussions and collaboration among library patrons.

4.4 The library as an incubator

4.4.1 Digital services

The libraries needed to expand the range of the digital services they provided. In the current digital age, the provision of computers as a service was not enough. With the advent of artificial intelligence, libraries would stay ahead of the curve. They would target this by providing platforms for people to test and experiment with different AI tools. This could include access to AI-powered software, and resources for learning about AI. Additionally, they could provide opportunities for individuals to collaborate with others on AI-related projects. By incorporating AI into their offerings, libraries would manage to stay relevant in the digital age. They would play a vital role in helping individuals and communities adapt to the rapidly changing technological landscape.

4.4.2 Entrepreneurship

The community of Buruburu was largely comprised of residents who ran their businesses. In this area, the library's financial literacy programme was relevant and beneficial for these individuals. To further support the community's entrepreneurial spirit, the library could consider expanding its programme by organizing events such as business expos. Such events would provide community members with the opportunity to showcase their products and services. They would also build networks and gain valuable insights and knowledge from industry experts. By doing so, the library could contribute to the growth and success of the local business community in Buruburu.

On the other hand, Kaloleni Library, could potentially host exhibitions to showcase the various wares and artworks that the community had created. This would allow community members to gain recognition for their talents and hard work. It would also provide a platform for collectively advertising these goods to wider markets. The exhibitions could include a wide range of items, such as handmade crafts, paintings, sculptures, and other forms of artwork. Overall, this could help to boost the local economy and promote the unique creativity and skills of the Kaloleni community.

Maktaba Kuu had the potential to establish well-equipped Maker spaces or innovation hubs that could serve as a platform for individuals to explore their creativity and innovative ideas. These spaces could provide access to various tools, technologies, and resources. They in turn would be used to prototype, test, and refine new products, designs, or solutions. People from different backgrounds could benefit from these spaces by collaborating one with another. Such groups can include students, entrepreneurs, and general practitioners. They would share knowledge and gain hands-on experience. Ultimately, these Maker spaces could become a hub of innovation and a catalyst for economic growth and development.

5. Recommendations

5.1 The library as a convenience

The study concluded that convenience was the crucial aspect that makes the library a comfortable and accessible space for everyone. Some of the aspects that the study found as definitive of convenience are:

5.1.1 Accessibility

When considering the location of a library, it is important to ensure that it could be easily reached by both public and private transport. It should ideally be situated in a central location or at a spot that was easily accessible from different parts of the city. This ensured that users could easily access the library without having to travel long distances or face transportation challenges. In addition to the location, it was important to ensure that the library spaces were designed to facilitate easy navigation. Users should be able to move around the library with ease and locate the resources they need without any difficulty. This could be achieved through clear signage, well-designed interiors, and intuitive layouts. Finally, the library should be designed to meet the needs of differently abled people. This meant that they should be accessible to users with physical disabilities or impairments. Consequently, they should have facilities like ramps, elevators, and handrails. Additionally, they should have materials and resources that catered to users with visual or hearing impairments. This would gain them necessary access the library's resources on an equal footing with other users.

5.1.2 Visual and thermal comfort

This can involve things like selecting seating options that are ergonomically appropriate and supportive, as well as ensuring that the spaces were properly lit and ventilated. Good lighting can help reduce eye strain and fatigue, while good ventilation can help keep the air fresh and clean. The colours and materials used in the spaces could have a big impact on how comfortable and inviting the spaces felt. For example, warm colours like yellow and orange could help create a sense of warmth and positivity. Cool colours like blue and green could help create a calming atmosphere. Materials like wood, fabric, and carpets could also help create a sense of warmth and comfort. Harder materials like metal and glass could create a sleek and modern feel. The library spaces should be both functional and aesthetically pleasing. With them so disposed, users feel comfortable and motivated to engage with the material they were studying. Finally, libraries should also have charging points readily available to ensure that users could charge their devices as they studied. This would ensure that students could work on their laptops, tablets, or smartphones without worrying about running out of battery charge.

5.1.3 Diversity

A well-equipped library should provide its users with a conducive environment for both personal and group study. This includes ample space that can accommodate various seating arrangements such as individual study carrels, collaborative workspaces, and group meeting rooms. Additionally, the library should have a good range of furniture options that cater to the different preferences and needs of its users. This can vary from traditional office furniture to more relaxed and comfortable homely furniture, such as couches or bean bags. By offering a variety of options, the library can provide users with the flexibility to choose a workspace that best suits their needs.

5.1.4 Health

The library needs to prioritize the provision of proper sanitation facilities to ensure a hygienic and healthy environment for its users. This includes clean and well-maintained restrooms that are easily accessible and equipped with basic amenities such as soap and hand dryers. Moreover, unrestricted, designated areas for foods and beverages would further improve convenience. This could be in the form of a small café or a lounge area. Here individuals can relax and refresh themselves while engaging in academic pursuits. Such amenities would enhance the overall experience of the library users. It would also promote a sense of community and social interaction within the library.

5.2 *The Library as an Incubator*

One of the challenges faced by libraries is catering to the diverse interests and pursuits of people. Each person has unique hobbies, passions, and professional goals. Such diversity makes it challenging to create programmes that appeal to a large section of the population. However, libraries can help people meet their esteem needs through self-development. Libraries can

provide resources and opportunities for individuals to learn and grow. In so doing they would empower people to pursue their interests and passions and achieve personal and professional success. This can include access to educational materials, workshops, and mentorship programmes. It can also spread out to networking events, among other resources. Collectively these all would support individuals in their journey toward self-improvement.

5.3 The Library as a Connector

Despite being considered a place of solitude, libraries can also serve as a great socializing spot for people. Libraries have been trying to establish themselves as a third place after home and work. People however still tend to overlook them as a place for leisure. Coffee shops, for example, are popular third spaces that provide a cozy atmosphere. They do require customers to purchase items though, before they can use the space. Libraries can offer an alternative option for socializing by providing a space for clubs to meet or for events to be held. This can be done by creating an inviting and comfortable atmosphere. Libraries can also provide various facilities such as comfortable seating areas, tables and chairs, and even refreshments. Libraries can provide an ideal setting for people of different ages and backgrounds to come together and socialize. This could be in a book club, knitting group, or language exchange programme.

5.4 The Community as a Library

As the population of a certain area grows larger, the library serving that area must cater to a wider range of people with varying needs and interests. A bigger population means a more diverse audience, which in turn requires a more generic library collection. For instance, a library in a small town with a narrowly focused selection of books may be suitable for the local population. A library in a large city, however, must have a wider range of topics and genres to appeal to a broader range of readers.

Kaloleni Library was representative of a small community. The residents of the community played an active role in the reconstruction process by providing their valuable time and resources. One can witness the community's involvement in the materials used in the construction of the library. These were locally sourced. The community's involvement is also manifest in the art displayed inside and outside the library. In contrast, the Maktaba Kuu library symbolizes a larger community, the nation. The representation of the community here is attained through symbolism where drums were used as they were common in many African communities.

The narrower the focus of a library, the more precisely it can cater to the specific needs and interests of its users. A library can tailor its collection and services to a particular subject area or demographic. This would posture it well to have a more meaningful impact on the individuals within that community. On the other hand, a larger community can benefit from a wider range of resources and expertise that a library with a larger community can provide. In conclusion, good library meets the convenience, incubation, and connection needs of a population. To meet the said needs, the library must identify the users, study their habits. And priorities. It would then

use the information to determine what services to provide. It can be concluded, therefore, that the conceptual framework provided rings true in the context of the three libraries studied.

5.5 Implications of findings to theory and practice:

The recommendations that are suggested in this study are practical and easy to realise. The attributes and concepts of a needs-based library identified in this study, contribute significantly to two crucial areas:

5.5.1 Strategic Definition: Libraries can refine their purpose by identifying their target audience and aligning their services to meet the specific needs of these users. This clarity allows libraries to position themselves more effectively within their communities.

5.5.2 Service Improvement: The findings offer a framework of guidelines to enhance service delivery, ensuring that libraries remain relevant and responsive to evolving user expectations.

However, the successful implementation of these recommendations is likely to be encumbered by challenges that arise from three key factors:

5.5.3 Staff Structure: The organisational structure of libraries and their oversight authority can support efficiency or clutter decision-making and operations. Its disposition can either slow down or promote essential dynamism of a library system.

5.5.4 Systemic Policies: Constrained budgets and rigid or slow changing policies can stymie necessary change and adaptation if left unattended to.

5.5.5 Cultural Perceptions: The way libraries are perceived by their communities can influence user engagement and the adoption of new services. Transforming cultural values invite sensitive response in the service offer as reflected in form, function and character.

Acknowledging these potential limitations portends well for the development of practical, sustainable strategies with immediate and future relevance for continued development of libraries.

5.6 Comparison with previous research:

This study builds upon previous research. It fosters an understanding of the practical application of theoretical frameworks of library functions. Earlier studies primarily examined the adaptation of libraries to varying contexts. In contrast, this study carries out a deep dive into the alignment of library services and user needs. It offers theoretical validation while also providing implementable insights. Its unique contribution is manifested in terms of:

5.6.1 Offering a complex perspective of libraries:

Previous studies, like that by Kinya (2011), often emphasized student reliance on libraries due to inadequate school resources. This study moves beyond a single user demographic. It incorporates non-users and addresses barriers to access among individuals with formal education.

By exploring why these groups do not utilize libraries, it identifies gaps in service delivery and proposes solutions for inclusivity.

5.6.2 Triangulated research methods:

While prior research has heavily relied on statistical data or user interviews, this study employs a complementary methods, techniques and tools for field access. It combines case studies and observation methods, individual and focused group respondent staff interviews and public surveys. This blended approach is taken on board in pursuit of a deeper inquiry. It captures user preferences, space dispositions and use, and links these with libraries in communities well.

5.6.3 Recommendations that are easy to implement:

Unlike many earlier works whose focus is purely diagnostic, this study puts forward recommendations that can be realised. It addresses both service improvement and organizational adaptability to context and need. The resulting strategies that can be implemented with ease are proffered in the recommendations. They constitute practical guidelines for necessary library reform. The study corroborates prior findings while also addressing identified gaps. It proffers diverse perspectives for realisable change.

5.7 Areas for further study:

This research suggests several critical leads with which to improve knowledge of the workings and situational relevance or adaption of public libraries, vis:

1. From this study it is already apparent that varying economic contexts bring on board unique priorities of the hinterland user communities. They define the needs for the Minimum Viable Product (MVP), convenience, connection, incubation and community differently. Priorities here range from up-to-date technologies and specialised resources to basic learning resources, internet access and community support services. It therefore is important to conduct a more in-depth investigation of library needs across the urban hierarchy of social status and is implied urban social areas. These may range from low-income, through middle-income to high-income neighbourhoods. Peculiar essential adaptations of public libraries to specific communities would emerge here.
2. It is necessary to pursue further understanding of essential interactions of functions and users in public libraries. A more detailed survey of user needs across the age, gender, prestige value, family status and ethno-cultural mix, would be useful. These are basic hierarchies of demographics that define urban social status can support this intention well.
3. The connection between siting and therefore location, access and zoning in the city and the services needed in public libraries does also deserve to be interrogated.
4. Whereas this study focused on one type, the public library. There is value in exploring the peculiar user needs of, national, academic, and special types of libraries. A holistic understanding of the sector can then ensue to guide policy and resource allocation better.

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