

PROJECT TITLE

DESIGN, DEVELOPMENT AND EVALUATION OF CREATUNO: A
MOBILE-FIRST, LOW-BANDWIDTH DIGITAL PORTFOLIO AND
MENTORSHIP PLATFORM FOR EMPOWERING CREATIVE
PROFESSIONALS IN SIERRA LEONE'S EMERGING CREATIVE
ECONOMY

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Abstract

Sierra Leone’s creative economy represents a significant yet underutilized driver of economic diversification and youth employment, contributing an estimated 4.5% of national GDP and over 10% of formal employment (World Bank, 2025). Despite this potential, creative professionals face systemic barriers including limited access to

mentorship (78% lack formal mentorship), insufficient market exposure (85%), high data costs (59%), and poor internet connectivity (20.7% national penetration). Existing global portfolio platforms such as Behance and Dribbble remain largely inaccessible due to bandwidth constraints and lack of localization for Sierra Leone's linguistic and cultural context.

This dissertation proposes the design, development, and evaluation of Creatuno—a mobile-first, low-bandwidth digital platform engineered specifically for Sierra Leonean creatives. Utilizing Progressive Web App (PWA) technology with offline capabilities, the platform will provide comprehensive portfolio showcasing, structured mentorship matching, job and investor connections, and peer collaboration networks, all optimized for resource-constrained environments. The research employs mixed-methods methodology including stakeholder interviews, surveys, focus groups, iterative prototyping, and pilot evaluation to ensure the platform addresses authentic user needs.

Expected outcomes include measurable improvements in creative professionals' market visibility, access to mentorship, employment opportunities, and professional development. This work contributes to both the academic understanding of digital platforms for developing economies and practical solutions for strengthening Sierra Leone's creative sector as outlined in the National Development Plan 2024-2030.

1.0 Chapter 1: Introduction

1.1 Introduction/Overview

The creative and cultural industries have emerged as significant engines of economic diversification, employment creation, and youth empowerment globally, particularly across Africa. As nations explore pathways to sustainable development beyond

traditional extractive sectors, creative sectors, encompassing music, film, fashion, digital content, and visual arts, are increasingly positioned as strategic contributors to national growth and labour market resilience. Globally, creative goods and services accounted for an estimated \$592 billion in trade prior to the COVID-19 pandemic and continued to demonstrate resilience through subsequent economic shocks, with services exports showing strong performance relative to broader trade sectors. This resilience underscores the potential of the creative economy to contribute meaningfully to income generation and economic stability, especially in contexts where conventional employment pathways are constrained.

In Africa, the creative economy is recognised as a high-growth potential sector capable of generating millions of jobs and fostering regional integration. Continental analyses estimate that, with appropriate investment and policy support, Africa's creative industries could generate approximately 20 million jobs and contribute over \$20 billion annually to GDP by 2030, reflecting the sector's capacity to absorb youth labour and stimulate entrepreneurship across urban and rural areas. However, despite this promise, systemic challenges including limited access to finance, weak infrastructure, uneven digital connectivity, and skills gaps, persist, constraining the ability of creatives to fully leverage these opportunities.

Sierra Leone's creative economy has followed a similar trajectory. The country's first national Creative Economy Diagnostic Report, published in 2025, underscored the sector's emerging economic footprint, estimating that creative industries account for approximately 4.5 percent of gross domestic product (GDP) and contribute to over 10 percent of formal employment. This places the creative sector among the leading non-traditional contributors to the formal economy, alongside sectors such as wholesale and retail trade. Yet, the report also reveals persistent structural constraints, including limited creative and digital infrastructure, unequal geographic access to resources, weak copyright protections, and high barriers to market entry, which collectively limit the sector's ability to scale and generate broader socioeconomic impact.

In Sierra Leone, as in many other low-resource contexts, digital tools and platforms offer significant promise as enablers of creative productivity, visibility, and economic participation. Digital platforms have reshaped creative work globally by enabling direct

audience engagement, portfolio hosting, and monetisation opportunities previously unavailable to independent creatives. Nevertheless, existing global platforms such as Behance, Dribbble, and mainstream social networks are typically designed for high-bandwidth environments and lack features tailored to the professional needs of creatives in low-connectivity settings. Combined with the country's uneven internet penetration, estimated at just over one-fifth of the population, and concentrated infrastructure in urban centres, these barriers highlight the need for context-specific digital solutions that are optimized for local conditions.

Progressive Web Applications (PWAs) have emerged as a promising technological approach for bridging digital accessibility gaps. PWAs combine the responsiveness and interactivity of native mobile applications with the accessibility of web technologies, enabling features such as offline access, reduced data consumption, and cross-platform compatibility. In low-resource and low-connectivity settings, such characteristics are particularly valuable, as they mitigate many of the limitations associated with traditional app distribution and high data costs. PWAs have been successfully deployed in diverse sectors — including education, financial services, and e-commerce — within African contexts, demonstrating that lightweight, offline-capable applications can expand inclusion and usage among populations with constrained connectivity and device capabilities.

Within this broader economic and technological landscape, this dissertation focuses on the design, development, and evaluation of Creatuno — a Progressive Web Application tailored to the specific needs of Sierra Leonean creative professionals. Creatuno seeks to bridge existing digital and professional gaps by offering a platform that supports portfolio showcasing, networking, mentorship access, and localized marketplace engagement in ways that are sensitive to bandwidth constraints and ecosystem realities.

This chapter frames the foundational elements of the study, outlining the research context and rationale, establishing the problem statement, and defining the research aim and objectives. It subsequently presents the research questions guiding the investigation, articulates the significance and justification of the study, and clarifies its

scope and limitations. The chapter concludes with definitions of key terms to ensure conceptual clarity and facilitate shared understanding throughout the dissertation.

1.2 Background of the Study

The creative economy is widely recognised as an important contributor to economic growth, job creation, and cultural development in countries around the world. According to the United Nations Conference on Trade and Development (UNCTAD), creative industries globally accounted for approximately 3 percent of gross domestic product and over 30 million jobs prior to the COVID-19 pandemic, with trade in creative goods and services valued at more than \$250 billion annually. These figures highlight the scale and economic significance of creative sectors in the global economy.

In Africa, the creative economy is gaining increasing policy and academic attention due to its potential to generate employment, particularly among youth, and to catalyse digital innovation. The Mastercard Foundation estimates that the African creative economy could generate 20 million jobs and contribute \$20 billion to GDP by 2030, if supported by enabling policy environments, digital infrastructure, and access to finance. Initiatives such as the African Union's Agenda 2063 and the African Continental Free Trade Area (AfCFTA) creative industries protocols further illustrate continental recognition of culture and creativity as strategic economic drivers.

Sierra Leone's Creative Economy in Context

In Sierra Leone, the creative economy has emerged as a growing contributor to national development. The country's Creative Economy Diagnostic Report (2025), produced with support from the World Bank and national stakeholders, found that creative industries contribute an estimated 4.5 percent of GDP and account for over 10 percent of formal employment. This places the creative sector among the significant non-traditional sectors within the Sierra Leonean economy, alongside trade and services. The report underscores the sector's role in youth employment, cultural expression, and informal economic activities.

Despite this documented contribution, the report also identifies persistent structural challenges that hinder the sector's ability to scale and generate sustained economic returns. Key constraints include:

1. Limited access to finance: Creative enterprises often lack collateral and credit history, making formal financing difficult to obtain.
2. Weak infrastructure: Inadequate digital and physical infrastructure limits production capacity and market access.
3. Fragmented governance: The absence of coherent regulatory frameworks and institutional support results in inconsistent policy implementation.
4. Persistent data gaps: Limited availability of up-to-date sector data constrains evidence-based policy formulation and investment planning.

These structural constraints are compounded by rapidly evolving digital trends that offer both opportunities and challenges for creative practitioners.

Digital Transformation and Creative Work

Digital technologies have reshaped creative production and distribution worldwide. Platforms such as YouTube, Instagram, TikTok, and Spotify enable artists and content creators to reach broader audiences with fewer intermediaries. Worldwide, creators on these platforms can monetise their work through advertising, sponsorships, subscriptions, and e-commerce integrations. In Africa, estimates suggest that the digital creator economy — encompassing influencers, content producers, and digital artists — could reach \$17.8 billion in value by 2030, driven by increased internet adoption, mobile device penetration, and youth-led creativity.

However, Sierra Leone still faces significant barriers to digital inclusion. As of the most recent assessments, internet penetration in Sierra Leone stands at approximately 20.8 percent, significantly below the global average of over 65 percent. Mobile broadband coverage has expanded in urban areas but remains inconsistent in rural regions, leading to unequal access to digital platforms and opportunities. High data costs further impede regular online engagement, with many creatives reporting that data expenses limit their ability to upload, stream, or interact with online audiences.

The Role of Digital Platforms in Creative Economies

While digital platforms can democratise access to audiences, they also present limitations for creators in low-resource environments. Platforms such as Behance, Dribbble, and Vimeo offer portfolio hosting and community networking but are designed for high-bandwidth use and lack features tailored to mentorship, business management, or monetisation needs. Major social media platforms provide exposure but often lack structured mechanisms for portfolio presentation and revenue generation that align with professional development pathways. Furthermore, algorithmic visibility on global platforms is competitive and can disadvantage creators from regions with lower digital engagement metrics.

Progressive Web Applications (PWAs) as Context-Appropriate Solutions

Given these digital infrastructure and access constraints, alternative digital architectures such as Progressive Web Applications (PWAs) have grown in relevance. PWAs offer the advantages of both web accessibility and near-native app experiences, including:

1. Offline functionality through caching
2. Reduced data usage owing to lightweight frameworks
3. Cross-platform compatibility with minimal installation friction

These characteristics make PWAs particularly suited to low-connectivity environments, where traditional native apps — often requiring large downloads and frequent updates — are less practical. PWAs have been adopted in sectors such as mobile banking and public services in similar African markets, demonstrating their potential to expand digital inclusion and service delivery efficiency.

Situating Creatuno within this Landscape

Within this complex ecosystem of creative potential and digital constraint, Creatuno is conceptualised as a locally relevant PWA solution designed to address specific gaps identified in Sierra Leone's creative economy. By integrating professional portfolio tools, networking functionality, and mentorship support within a bandwidth-optimised

platform, Creatuno aims to enhance market visibility, reduce access barriers, and support creative professionals in navigating the challenges of the digital economy.

1.3 Statement of the Problem

Despite the growing recognition of the creative economy as a viable pathway for economic diversification and youth employment in Sierra Leone, creative professionals continue to operate within an ecosystem marked by structural, digital, and institutional constraints that significantly limit their professional development and economic contribution. While national and international policy frameworks increasingly acknowledge the sector's potential, the practical realities faced by creatives reveal a persistent gap between policy aspirations and lived outcomes.

Limited Access to Mentorship and Professional Development

One of the most critical challenges confronting creative professionals in Sierra Leone is the absence of structured mentorship and professional development systems. The World Bank's Creative Economy Diagnostic for Sierra Leone identifies weak institutional support, limited skills development pathways, and fragmented governance as major constraints affecting the sector's sustainability and competitiveness. Many creatives operate independently, without access to industry mentors who can provide guidance on business strategy, intellectual property management, pricing, branding, and market positioning.

This lack of mentorship disproportionately affects early-career creatives and youth entrants into the sector, who often rely on informal peer learning and trial-and-error approaches. In contrast, studies from other African creative hubs such as Nigeria and South Africa demonstrate that access to mentorship and incubator-style support significantly improves creative enterprise survival rates, income stability, and international market access. The absence of comparable structures in Sierra Leone limits the professionalization of creative practice and constrains long-term career development.

Insufficient Market Visibility and Professional Exposure

Market visibility remains a persistent challenge for Sierra Leonean creatives. Although digital platforms offer unprecedented opportunities for showcasing creative work,

access to professionally appropriate digital presentation tools remains limited. The majority of creatives rely heavily on general-purpose social media platforms such as Facebook and Instagram for self-promotion. While these platforms facilitate informal visibility, they are not designed to function as structured professional portfolios and provide limited mechanisms for long-term discoverability, credential presentation, or targeted industry engagement.

Furthermore, global portfolio platforms such as Behance and Dribbble, while effective in high-income contexts, are not optimized for the realities of Sierra Leone's digital environment. Their reliance on high-bandwidth connections, frequent media uploads, and continuous online engagement creates exclusionary barriers for creatives operating in bandwidth-constrained settings. As a result, many creative professionals remain digitally invisible to potential clients, collaborators, and investors both locally and internationally, reinforcing patterns of economic marginalization.

Digital Infrastructure and Connectivity Constraints

Sierra Leone's digital infrastructure presents a significant structural barrier to creative sector participation in the digital economy. Recent digital assessments indicate that internet penetration in Sierra Leone remains at approximately 20–21 percent, substantially below the global average. Connectivity is heavily concentrated in urban centres, particularly Freetown, while rural and peri-urban areas experience limited or unreliable access. High mobile data costs further restrict sustained online participation, especially for creatives whose work depends on uploading visual or audio content.

These infrastructural limitations have direct implications for the adoption and effective use of digital creative platforms. Applications that require continuous connectivity, large data transfers, or frequent updates are often impractical for many users. Consequently, existing digital tools — even when theoretically accessible — remain functionally inaccessible for a large segment of the creative population. This digital divide undermines equitable participation in the creative economy and exacerbates geographic and socioeconomic disparities.

Limited Employment, Monetisation, and Investment Pathways

Another critical problem facing Sierra Leonean creatives is the lack of structured pathways to employment, monetisation, and investment. The creative sector is characterised by high levels of informality, short-term contracts, and income volatility. While official unemployment statistics may appear relatively low, they mask widespread underemployment and dependence on informal economic activity, particularly among youth.

The World Bank diagnostic highlights limited access to finance as one of the most frequently cited challenges among creative professionals. Formal financial institutions often perceive creative work as high-risk due to irregular income streams and lack of collateral, while international monetisation platforms frequently exclude Sierra Leone from full participation due to regulatory, payment infrastructure, or eligibility constraints. As a result, many creatives struggle to convert talent and output into sustainable livelihoods, limiting the sector's broader contribution to economic development.

Youth Employment and Demographic Pressures

The problem is further compounded by Sierra Leone's demographic structure. Youth aged 18–35 constitute a significant proportion of the population and labour force, yet face limited formal employment opportunities. While the creative sector holds substantial potential as a youth-absorbing industry, systemic barriers — including weak skills pipelines, limited digital access, and absence of professional support structures — prevent the sector from fulfilling this role at scale. This disconnect represents a missed opportunity for leveraging creativity as a tool for inclusive growth and social stability.

Inadequacy of Existing Digital Solutions

Existing global digital solutions fail to adequately address Sierra Leone's contextual realities in three key dimensions. First, they are not technically optimized for low-bandwidth environments and intermittent connectivity. Second, they lack cultural and linguistic localization that reflects local creative practices and identities. Third, they

adopt a narrow functional focus on content display or social engagement without integrating mentorship, professional development, or localized market linkages.

As a result, creative professionals remain fragmented across platforms that do not fully support their holistic needs. The absence of a unified, accessible, and context-appropriate digital ecosystem perpetuates cycles of underutilization, limited visibility, and economic exclusion.

Problem Summary

In summary, despite the documented economic significance of the creative economy in Sierra Leone, creative professionals face interrelated challenges involving mentorship deficits, limited market visibility, infrastructural constraints, weak monetisation pathways, and inadequate digital solutions. These challenges collectively inhibit the sector's ability to generate sustainable livelihoods, attract investment, and contribute fully to national development goals. Addressing these systemic gaps requires a locally tailored, technologically appropriate, and professionally oriented digital intervention capable of operating effectively within Sierra Leone's resource-constrained environment.

1.4 Aim and Objectives of the Study

Aim of the Study

To design, develop, and rigorously evaluate Creatuno—a mobile-first, low-bandwidth digital platform that empowers Sierra Leonean creative professionals through enhanced portfolio visibility, structured mentorship access, collaborative networking capabilities, and direct connections to employment and investment opportunities, thereby catalyzing sustainable growth in Sierra Leone's creative economy.

Objectives of the Study

To achieve the stated aim, the study is guided by the following five specific objectives:

- **To conduct a comprehensive stakeholder and user requirements analysis** through a mixed-methods research approach, incorporating semi-structured interviews, quantitative surveys, and focus group discussions with creative professionals and ecosystem stakeholders, in order to identify key

functional requirements, usability expectations, and contextual constraints influencing platform adoption.

- **To design a mobile-first, bandwidth-optimized system architecture** using Progressive Web Application (PWA) technologies, incorporating offline functionality, data-efficient interaction patterns, and cross-platform compatibility that align with Sierra Leone’s internet penetration levels, device usage patterns, and connectivity limitations.
- **To develop a digital portfolio management system** that enables creative professionals to present their work through optimized multimedia galleries, supporting clear professional representation and incorporating bilingual interface elements (English and Krio) to enhance accessibility and local relevance.
- **To implement a structured mentorship matching and communication framework** within the platform, facilitating connections between emerging creatives and experienced industry professionals, and enabling knowledge transfer, career guidance, and professional development through digital interaction tools.
- **To design and integrate employment and investment linkage modules**, including a job opportunity board and investor engagement features, aimed at improving access to paid work, project collaborations, and funding opportunities for creative professionals operating within the Sierra Leonean creative economy.

Alignment with the Study

These objectives collectively ensure that the study moves beyond conceptual exploration to deliver a practical, evaluated digital solution. Each objective is directly linked to:

- The **problem statement**, addressing identified structural and digital gaps
- The **research questions**, guiding inquiry and evaluation
- The **methodology**, informing data collection and analysis strategies

- The **system implementation and evaluation**, ensuring traceability and coherence across the dissertation

This structured alignment enhances the study's academic validity and practical relevance.

1.5 Research Questions

This study is guided by a set of research questions formulated to address the core problems identified within Sierra Leone's creative economy and to evaluate the effectiveness of the proposed Creatuno platform as a technological intervention. The questions are derived directly from the study's aim and objectives, ensuring conceptual coherence and methodological traceability throughout the dissertation.

- **What are the key digital, professional, and structural challenges faced by creative professionals in Sierra Leone in relation to portfolio visibility, mentorship access, and employment opportunities?**

This question seeks to establish an empirical understanding of the lived experiences, needs, and constraints of creative practitioners, forming the foundation for system requirements and design decisions.

- **What functional and usability requirements should a digital platform satisfy to be effectively adopted by creative professionals operating in low-bandwidth and resource-constrained environments?**

This question focuses on identifying user-centred design requirements, including accessibility, performance expectations, and contextual constraints that influence technology adoption.

- **How can Progressive Web Application (PWA) technologies be leveraged to design a mobile-first, bandwidth-efficient platform suitable for Sierra Leone's digital infrastructure context?**

This question addresses the technical feasibility and architectural considerations of implementing PWAs as an alternative to conventional native or web-only solutions.

- **To what extent does the Creatuno platform enhance creative professionals' ability to present portfolios, access mentorship, and engage in professional networking?**

This evaluative question examines the platform's effectiveness in addressing the core functional gaps identified in the problem statement.

- **How do users perceive the usability, performance, and overall value of the Creatuno platform in supporting professional growth and economic participation within the creative economy?**

This question supports post-implementation evaluation by capturing user satisfaction, perceived usefulness, and areas for improvement.

1.6 Significance of the Study

This research extends beyond the development of a software artifact. It represents a targeted intervention at the intersection of technology, economic development, and human capital growth in Sierra Leone. Its significance is multi-layered and impactful for distinct audiences, as detailed below.

For Sierra Leonean Creative Professionals: A Pathway to Economic Empowerment

For the primary users, Creatuno is designed as a direct tool to dismantle the barriers of invisibility, isolation, and inaccessibility.

- **From Informal Showcasing to Professional Discovery:** By moving creative work from transient social media feeds to a structured, searchable digital portfolio, the platform transforms how talent is discovered. This is critical in a market where 85% of professionals report limited exposure. A well-architected PWA can significantly boost engagement; industry data shows that PWAs can increase mobile sessions by 80% and page views by approximately 134% compared to traditional mobile sites. For a creative professional, this heightened visibility directly translates to more client inquiries and job opportunities.

- **Structured Skill and Career Development:** The integrated mentorship system addresses the critical 78% mentorship gap. It moves beyond ad-hoc advice to structured, goal-oriented relationships, a model proven to increase professional efficacy. By facilitating connections with experienced local and diaspora mentors, the platform provides guided pathways for business skill development—such as pricing, contracts, and intellectual property—which are frequently cited as major growth constraints.
- **Optimized for Real-World Constraints:** The commitment to a low-bandwidth, mobile-first PWA is not just a technical choice but a core element of its significance. It ensures the tool is usable in the context of 20.7% internet penetration and high data costs. Examples like Uber and Twitter Lite demonstrate that PWAs can provide full-featured experiences on 2G/3G networks and basic devices, reducing data barriers to entry. For the creative professional, this means reliable access to opportunities regardless of connectivity quality or device capability.

For Policymakers and Government: An Evidence-Based Tool for National Development

For agencies like the Ministry of Tourism and Cultural Affairs, Creatuno serves as an operational instrument to achieve strategic goals.

- **Implementing the National Development Plan (2024-2030):** This project directly translates the Plan's priority on the creative and tourism sectors into a functional, scalable digital public good. By providing the infrastructure for creatives to formalize, network, and grow, the platform actively works to increase the sector's contribution beyond the current 4.5% of GDP, supporting economic diversification.
- **Data-Driven Policy and Investment:** The platform will generate valuable, real-time data on the creative sector—tracking employment trends, in-demand skills, geographic distribution of talent, and economic activity. This data can inform more effective policy-making, targeted funding initiatives, and

infrastructure development, moving beyond reliance on periodic diagnostic reports.

- **Catalysing Formalization and Job Creation:** By connecting creatives to structured job postings and investor pitches, Creatuno helps transition work from the informal to the formal economy. This supports the government's goals of reducing youth underemployment and creating sustainable, quality jobs within a high-potential national industry.

For Academic Research: Advancing HCI4D and ICT4D Praxis

This work contributes original knowledge to the fields of Human-Computer Interaction for Development (HCI4D) and Information and Communication Technologies for Development (ICT4D).

- **A Case Study in Contextualized Platform Design:** It provides an empirical, in-depth case study on designing a holistic socio-technical system for a low-resource, high-potential environment. It moves beyond isolated studies on mobile usability or mentorship theory to examine their integration within a specific cultural (Sierra Leonean) and economic (creative sector) context.
- **Validating PWA Efficacy for Development Goals:** While PWAs are praised for their technical advantages, there is limited published research on their long-term efficacy as engines for professional empowerment and micro-entrepreneurship in West Africa. This dissertation will contribute evaluative data on adoption, engagement, and economic outcomes from a real-world deployment, enriching the global discourse on appropriate technology.
- **Bridging Disciplinary Silos:** The project synthesizes knowledge from software engineering (PWA architecture), design (low-bandwidth UX), and social science (mentorship models, creative economy). This interdisciplinary approach offers a replicable methodological framework for similar initiatives in other developing regions and sectors.

For Technology Practitioners: A Blueprint for Inclusive, Performance-Centric Development

For developers and entrepreneurs in Sierra Leone and across Africa, this project offers practical, proven insights.

1. **Demonstrating High-Performance PWA Architecture:** The project will serve as an open-source reference implementation for building complex, data-driven applications that must perform under severe network constraints. It will document best practices in asset optimization, intelligent caching strategies, and offline functionality—skills in high demand across emerging markets.
2. **Prioritizing Accessibility and Inclusion from the Start:** By adhering to Progressive Enhancement principles and WCAG guidelines, the project models how to build for the widest possible audience, including those with older devices, limited data plans, or disabilities. This is a crucial lesson in user-centered design often overlooked in commercial projects.
3. **Validating a Sustainable Tech-for-Good Model:** The research into partnership frameworks and sustainability strategies provides a roadmap for how similar platforms can be developed and maintained through collaboration between technologists, NGOs, and government entities, rather than relying solely on volatile venture funding.

The table below summarizes key industry metrics that underscore the technical and strategic significance of the PWA approach for a context like Sierra Leone:

Industry Example	PWA Impact Metric	Relevance to Creatuno's Goals
Twitter Lite	75% increase in Tweets sent; 65% increase in pages per session.	Demonstrates potential for significantly boosting user-generated content and platform engagement.

Industry Example	PWA Impact Metric	Relevance to Creatuno's Goals
Forbes	Increased mobile sessions and time on site.	Validates the model for improving user engagement with content-rich platforms.
Uber	Core app functional on 2G networks; small file size for quick download.	Directly proves feasibility of a reliable, complex service in low-bandwidth environments.
Starbucks	Offline functionality allowing menu browsing and cart building.	Model for enabling critical user actions without a live connection, crucial for unreliable networks.

In summary, the significance of developing and evaluating Creatuno is that it simultaneously addresses an urgent practical need for Sierra Leonean creatives, provides a policy implementation tool for the government, generates novel academic knowledge for the HCI4D community, and delivers a practical technical blueprint for African developers. It is a project firmly rooted in local context but designed to yield insights with global applicability.

1.7 Justification of the Study

The pursuit of the Creatuno project is not merely an academic exercise but a necessary and timely intervention. Its justification is built upon a solid convergence of national economic strategy, documented sectoral gaps, appropriate and proven technology, and validated grassroots demand.

Alignment with National Strategic Priorities

This project is a direct operational response to Sierra Leone's documented development agenda. The National Development Plan (NDP) 2024-2030 explicitly

prioritizes the creative and tourism sectors as engines for economic diversification, job creation, and youth empowerment. Creatuno functions as a digital enabler for these policy goals. By providing the digital infrastructure for creatives to formalize, scale, and connect with markets, the project actively works to implement the NDP's vision. It transforms a broad strategic priority into a tangible tool that can be deployed, measured, and scaled, offering the government a concrete platform to support a sector already contributing an estimated 4.5% to national GDP and over 10% of formal employment.

Addressing a Critical and Quantified Economic Gap

The creative sector's potential is currently constrained by well-defined barriers, making targeted intervention both logical and urgent.

- **The Efficiency and Visibility Gap:** The World Bank's 2025 diagnostic identifies "limited market access" and "fragmented value chains" as key constraints. With 85% of creatives lacking sufficient exposure and 81% having no structured access to jobs or investors, there is a massive inefficiency in connecting talent with opportunity. Creatuno justifies its development by aiming to plug this leak, creating a centralized, low-friction marketplace that can increase the sector's overall transaction volume and efficiency.
- **The Youth Employment Imperative:** Sierra Leone faces a significant youth employment challenge, with a large percentage of youth engaged in vulnerable or informal work. The creative sector, heavily youth-driven, offers a viable pathway. By digitally formalizing connections and skills, Creatuno can help transition creative work from informal hustles to recognized, sustainable professions, directly contributing to national economic stability.

Technological Appropriateness and Proven Efficacy

The selection of a Progressive Web App (PWA) as the core technology is a critical, justifiable decision based on the specific constraints of the Sierra Leonean context. Alternative approaches (native mobile apps or traditional websites) are less suitable.

1. **Overcoming Connectivity and Cost Barriers:** PWAs are uniquely architected for environments with expensive data and unreliable networks.

Their use of service workers enables robust offline functionality and intelligent caching, drastically reducing data consumption. For example, Twitter Lite (a PWA) reduced data consumption by over 70% and increased engagement by 65% in similar markets. This directly addresses the barrier faced by 59% of Sierra Leonean creatives who cite high data costs as a limiting factor.

2. **Accessibility and Reach:** PWAs are installed directly from a browser, requiring no app store account, download from a slow store, or high-end smartphone. They are discoverable via the web yet provide an app-like experience (push notifications, home screen icon). This "low-friction" access is crucial for maximizing adoption across diverse device and literacy levels.
3. **Economic and Operational Sustainability for Developers:** For the development team, a PWA is justified by its single codebase for all platforms, drastically reducing development and maintenance costs compared to building separate iOS and Android native apps. This makes the project more feasible for a university team and more sustainable for long-term upkeep by local stakeholders.

Validated User Demand and Co-Design Foundation

The project is grounded in evidence of clear need, moving from assumption to validated requirement.

- **Quantified Interest and Feature Prioritization:** Preliminary surveys indicate overwhelming interest (**96%**), with specific, high-priority demand for a portfolio builder (**93%**), job board (**92%**), and mentorship features (**89%**). Crucially, **95%** emphasized the need for a mobile-first, low-data solution, directly informing the core technological choice.
- **Human-Centered Design Justification:** The planned mixed-methods requirements gathering (interviews, focus groups) ensures the platform is not built in isolation. This commitment to co-design with Sierra Leonean creatives justifies the project's potential for real-world adoption and impact, as it will be shaped by the authentic needs, workflows, and cultural contexts of its end-users.

The table below summarizes how key PWA capabilities directly solve identified Sierra Leonean constraints:

Sierra Leonean Contextual Constraint	Relevant PWA Capability	Justification for Use
High Data Cost, Low Bandwidth	Service Workers for caching & offline use; Minimal data transfer.	Reduces recurring user cost , enables core functionality on 2G/3G. Critical for adoption.
Predominance of Basic Android Phones	Runs in standard mobile browser (Chrome, etc.); No app store needed.	Maximizes compatibility with the existing device ecosystem in the target market.
Low Storage Space on Devices	Very small footprint; Functions primarily via browser.	Removes a barrier to installation for users who cannot afford large app downloads.
Need for Simple Maintenance	Single codebase; Updates instantly via web.	Justifies long-term sustainability for a small team or local NGO managing the platform post-graduation.

1.8 Scope and Limitations

A clear articulation of scope and limitations is essential to define the boundaries of this research, manage expectations, and provide context for interpreting the findings. This section details what the project will deliver (scope) and acknowledges the inherent constraints that may influence the process or outcomes (limitations).

Scope of the Study

The scope of this research is deliberately focused to ensure depth, feasibility, and clear relevance to the Sierra Leonean context.

- **Target User Demographic:** The platform specifically targets **Sierra Leonean creative professionals aged 18-35**. This age bracket represents a critical cohort, constituting a significant portion of the national population and labour force. Census data indicates that youths (15-35) make up a substantial segment of Sierra Leone's population, facing higher rates of underemployment. Focusing on this group allows the project to directly address national youth empowerment goals. The included disciplines—photography, graphic design, music, film, fashion, visual arts, and digital media—were identified in the World Bank diagnostic as core, active components of the formal and informal creative economy.
- **Geographical Focus and Pilot Strategy:** The primary phase of requirements gathering, development, and initial testing will be concentrated in Freetown. This is justified by its status as the capital and primary urban hub, containing the highest density of creative professionals, institutional partners, and digital infrastructure. For the pilot evaluation, the scope will expand to include Bo, Kenema, and Makeni. These cities are major regional capitals outside the Western Area, allowing the research to test platform usability and value in diverse urban contexts with varying levels of internet service and creative community organization. This tiered approach ensures manageable logistics while gathering crucial data on broader applicability.
- **Technological Framework and Core Features:** The project is scoped to deliver a fully functional Progressive Web App (PWA). This is a definitive technical boundary. The platform will not be developed as a native iOS or Android application, nor as a desktop-only website. Its core feature set, derived from prior requirement analysis, is bounded to:
 - **Portfolio Management:** Image/video upload, project categorization, and public profile generation.

- **Mentorship Matching:** A algorithm-based or searchable system connecting mentees and mentors with structured communication tools.
- **Opportunity Boards:** Listings for jobs, gigs, and collaboration projects.
- **Community Networking:** Basic forum structures and user discovery features.
Advanced features like integrated e-commerce payments, complex project management tools, or AI-based content recommendation are explicitly out of scope for this initial development and research phase.
- **Linguistic and Cultural Localization:** The platform's linguistic scope is defined as launching with full support for **English and Krio**. English is the official language of business and education, while Krio is the most widely spoken *lingua franca*, crucial for accessibility and trust. The system architecture will be designed with **localization frameworks** (e.g., using i18n libraries) that make adding Mende and Temne in a future phase technically straightforward, but their full translation and implementation are beyond the current project timeline.

Limitations of the Study

This research openly acknowledges several constraints that may impact the development, deployment, or generalizability of its findings.

- **Infrastructure Dependency:** A fundamental limitation is the platform's partial dependence on internet connectivity. While the PWA will use service workers to cache core assets and enable offline viewing of portfolios, actions like uploading new work, sending messages, or browsing latest job posts require a connection. In a country with only 20.7% internet penetration and unreliable service in many areas, this will inevitably restrict usage patterns. *Mitigation:* The design will prioritize "offline-first" principles, allowing users to draft content and queue actions for when connectivity is briefly available.
- **Mentor Network Viability Risk:** The success of the mentorship module is contingent on recruiting and retaining a sufficient pool of qualified mentors.

There is a risk of an imbalance between eager mentees and available, committed mentors, which could degrade the feature's value. *Mitigation:* The project will proactively partner with organizations like Creative Hub Africa, the Freetown Music Hub, and diaspora networks to formally recruit mentors, and will explore non-monetary incentive structures like professional recognition and networking benefits.

- **Digital Literacy and Onboarding Hurdles:** The research assumes a baseline level of smartphone literacy. However, some target users, particularly in less urban pilot areas, may struggle with tasks like account creation, photo compression, or navigating multi-step flows. This could skew initial adoption towards already digitally-literate creatives. *Mitigation:* The User Interface (UI) will adhere to stringent usability heuristics, and the pilot will include the creation of simple video tutorial guides in Krio to support onboarding.
- **Pilot Scale and Generalizability:** The evaluation phase will be limited to a pilot group of approximately 100-150 users due to time, resource, and support constraints. While this will yield rich qualitative and preliminary quantitative data, findings regarding economic impact, long-term engagement, and platform-driven income generation cannot be broadly generalized to the entire national creative sector at this stage. This pilot is designed to prove concept viability and usability, not measure nationwide economic impact.
- **Technology Access Bias:** By focusing on a mobile digital solution, the project inherently excludes creative professionals who have no access to a smartphone or cannot afford even minimal data packages. This means the research findings and the platform itself may not address the needs of the most economically marginalized segment of the sector.

The table below summarizes key demographic and infrastructural data that informs the project's scope:

Scope Parameter	Supporting Data/Context	Implication for Project
Target Age (18-35)	Youth constitute a large portion of Sierra Leone's population and are central to creative sector growth and employment strategies.	Focuses intervention on the cohort with highest potential for long-term career impact and alignment with national youth policies.
Initial Focus on Freetown	As the capital, it has the highest concentration of creatives, institutions, and relatively better internet infrastructure.	Provides a viable environment for intensive development, testing, and partnership building in the first phase.
PWA as Core Technology	Internet penetration is 20.7%; mobile data is expensive; Android devices dominate.	PWA's offline features and low-data design are non-negotiable for meaningful accessibility.

1.9 Definition of Key Terms

1. **Creative Economy:** The system of economic activities based on the generation and exploitation of creativity, ideas, intellectual property, and cultural capital. It encompasses sectors where value is derived from individual creativity and skill, such as visual arts, performing arts, design, music, and digital media
2. **Progressive Web Application (PWA):** A type of web application built using standard web technologies (HTML, CSS, JavaScript) but designed to provide a user experience comparable to a native mobile app. Key characteristics include reliability on poor networks, installability on a device's home screen, and capability to work offline through the use of a service worker.
3. **Low-Bandwidth Environment:** A suite of design and development techniques aimed at minimizing the data requirements of a digital application. This includes asset compression, efficient caching, code minification, and simplified interfaces to ensure functionality and acceptable performance on slow or unreliable internet connections
4. **Digital Portfolio:** A curated, online collection of an individual's creative work and professional accomplishments, designed to systematically showcase skills, style, and expertise to potential clients, employers, or collaborators.
5. **User Experience (UX):** The overall experience of a person using a product, particularly in terms of ease of use, accessibility, and satisfaction.
6. **Mentorship Platform:** A digital system designed to facilitate structured developmental relationships. It typically provides functionality for matching mentors and mentees based on defined criteria, supporting goal setting, and enabling communication and progress tracking within the relationship.
7. **Portfolio Builder:** A software tool or module that provides users with an interface and templates to create and manage their digital portfolio without needing to write code.

8. **Mentorship Matching Algorithm:** A set of computational rules designed to automatically pair mentors with mentees based on compatibility factors like skills, goals, and experience.
9. **Stakeholder:** Any individual, group, or organization that can affect or is affected by a project (e.g., creative professionals, mentors, government bodies, NGOs).

2.0 Chapter 2: Literature Review

2.1 Introduction

This chapter synthesizes contemporary literature to establish the technological, socio-economic, and theoretical landscape for the development of "Creatuno." The review critically examines the current state of Sierra Leone's digital and creative economies, evaluates existing models for digital portfolios and mentorship, and analyses appropriate technological frameworks for low-resource environments. By integrating findings from development reports, academic research, and regional case studies, this chapter identifies the specific gaps that Creatuno aims to address. The synthesis demonstrates that while the creative sector holds significant economic promise, its growth is stymied by a convergence of digital access barriers, a lack of integrated professional tools, and low digital literacy. This justifies the need for a context-specific, mobile-first platform that combines portfolio showcasing with structured mentorship.

2.2 Conceptual Review (Existing Systems, Technologies, and Models)

The Digital and Creative Economy Context of Sierra Leone

The creative economy, defined by the United Nations as the interface between creativity, culture, economics, and technology, has evolved into a major global economic force. It generates approximately \$2.25 trillion annually and supports nearly 50 million jobs worldwide, with growth rates often surpassing traditional industries. In Africa, this sector holds "outsized potential," driven by a young, digitally-engaged population. Sierra Leone's recent, evidence-based embrace of this sector marks a critical policy shift. The launch of the nation's first Creative Economy Diagnostic Report in September 2025 provides a foundational analysis, quantifying the sector's contribution at an estimated 4.5% of national GDP and more than 10% of formal employment. This positions the creative economy as the country's second-largest employer after agriculture, with strongholds in audiovisual media, music, performing arts, and crafts.

This diagnostic, developed under the World Bank's CreatiFi initiative, transcends mere measurement; it is a strategic blueprint for national development. The report aligns with the government's 2024-2030 National Development Plan, which elevates creative and tourism sectors as critical enablers for economic diversification and job creation. As Minister of Tourism and Cultural Affairs Nabeela Tunis stated, "The creative industry is now part of Sierra Leone's development blueprint". The diagnostic identifies systemic barriers—limited finance, weak infrastructure, data gaps, and fragmented governance—that constrain growth despite this potential. Notably, 91% of creatives cite limited access to finance as their primary challenge, highlighting a critical market failure. Initial interventions, such as the Creative Accelerator Pilot Program that supported 25 women-led businesses and created 65 jobs, demonstrate the tangible impact of targeted support and the need for scalable solutions.

Mentorship Platforms and Models

Modern digital mentorship platforms provide a blueprint for structured, scalable professional guidance. Leading platforms such as MentorcliQ, Chronus, and Together offer key features that are relevant to adapt for the creative sector:

- **Intelligent Matching:** Using algorithms to pair mentors and mentees based on skills, goals, and interests.
- **Goal Setting and Tracking:** Providing tools to define objectives and monitor progress within the mentoring relationship.
- **Integrated Communication:** Facilitating communication within the platform to maintain structure and record insights.
- **Administration and Analytics:** Reducing manual overhead for program managers and providing data on participation and outcomes.

However, these platforms are primarily designed for formal, corporate environments within organizations. Their models often assume high connectivity, digital fluency, and a context where professional development is institutionalized. The challenge and opportunity for Creatuno lie in adapting these proven features for an informal, entrepreneurial sector in a low-resource setting, where mentorship may be peer-driven and focused on practical business survival as much as creative growth.

Progressive Web App (PWA) Technology

For the Sierra Leonean context, Progressive Web App technology presents a strategically optimal technical architecture. PWAs are web applications that use modern web capabilities to deliver an app-like user experience. Their core advantages align directly with identified constraints:

- **Offline Functionality and Low Data Usage:** Through service workers and caching, PWAs can work reliably on poor or non-existent networks, a critical feature given that more than half of the adult population lacks reliable mobile network access.
- **Cross-Platform and Installable:** They run on any device with a modern web browser (Android, iOS, basic smartphones) and can be installed on the home screen without app store distribution, bypassing data-heavy downloads and storage limitations.
- **Discoverability and Linkability:** As websites, they are easily shareable via URL and indexable by search engines, aiding in the discoverability of creative professionals.

This architecture directly addresses the "high data cost" barrier by allowing users to access core portfolio content offline and interact with the platform in a data-light manner.

2.3 Theoretical Framework

This research is grounded in two interconnected theoretical paradigms:

- **Human-Computer Interaction for Development (HCI4D):** This framework prioritizes designing technology with and for underserved populations, emphasizing deep contextual understanding, participatory design, and evaluating socio-economic impact over mere usability. Creatuno is an HCI4D intervention, as its design is driven by the specific infrastructural (low connectivity), economic (informality, high data cost), and literacy constraints of Sierra Leonean creatives.

- **Financial and Digital Capability Theory:** Moving beyond simple access, this theory focuses on an individual's ability to effectively use financial and digital tools to improve their well-being. The platform aims to build digital capability by simplifying complex online tasks (portfolio creation, professional networking) and financial capability by facilitating secure transactions and connecting users to financial tools, thereby addressing the low digital and financial literacy scores documented nationally.

2.4 Empirical Review (Related Studies and Findings)

Empirical evidence from related technological deployments in Sierra Leone and similar regions strongly informs the proposed technical architecture and implementation strategy.

- **Evidence for PWA Efficacy in Low-Bandwidth Settings:** Industry case studies are compelling. Twitter Lite, a PWA, demonstrated a 70% reduction in data consumption and significant increases in user engagement in emerging markets by employing aggressive caching and data-savvy loading strategies. This directly validates the technical premise that a well-optimized PWA can overcome connectivity barriers.
- **Lessons from Tech-Supported Professional Development in Sierra Leone:** A critical parallel exists in the education sector. The EdTech Hub's sandbox project for Teacher Continuous Professional Development (TCPD) in Sierra Leone tested a model using Android tablets with digital resources to facilitate teacher learning circles. Key, transferable findings include:
 - **Peer-Driven Adoption:** Teachers spontaneously used devices to record and critique each other's work, stating, "The video is like a mirror... you learn from each other". This mirrors the desired peer-review function within Creatuno.
 - **The Vital Role of Mediators:** Success depended on supported peer facilitators and district officers, highlighting that technology alone is insufficient. This underscores the need for community management and onboarding support within Creatuno.

- **Content Format Preferences:** Teachers strongly preferred audio and video for learning but valued mixed formats, noting print's reliability without electricity or internet. This informs Creatuno's content strategy, emphasizing media optimization while considering fallback options.

2.5 Comparative Analysis of Existing Systems

This section provides a critical evaluation of the digital tools currently available to Sierra Leonean creative professionals, contrasting them with the proposed Creatuno platform. The analysis focuses on four key dimensions critical for success in the local context: technical efficiency and accessibility, comprehensiveness of professional features, cultural and contextual relevance, and overall barriers to adoption.

Technical Efficiency and Accessibility

The most immediate barrier for Sierra Leonean users is technical. Global portfolio platforms like Behance and Dribbble are engineered for high-bandwidth environments, featuring high-resolution image galleries and complex interfaces that consume significant data and perform poorly on unreliable connections. Similarly, while more accessible, social media platforms like Instagram and Facebook utilize data-heavy auto-playing videos and continuous feed refreshes. In contrast, Creatuno is conceived as a Progressive Web App (PWA), an architecture specifically chosen to overcome these constraints. By employing service workers for offline functionality, lazy loading for images, and aggressive data compression, it prioritizes minimal data consumption and core usability on basic smartphones and 2G/3G networks, directly addressing the infrastructural realities highlighted in national reports.

Comprehensiveness of Professional Features

Existing systems offer fragmented solutions that address only part of a creative professional's needs. Global portfolio platforms excel at visual presentation to a worldwide audience but lack integrated tools for finding local work, securing mentorship, or managing client relationships specific to the Sierra Leonean market. Conversely, social media and messaging apps like WhatsApp are used ubiquitously for networking and client communication but are not designed for professional showcasing, lack structured job markets, and expose users to financial and intellectual

property risks due to their informal nature. Creatuno aims to synthesize these functions into a holistic professional ecosystem. It integrates a dedicated portfolio builder with a structured, algorithm-assisted mentorship matching system, a verified local job and gig board, and community collaboration tools, creating a single destination for end-to-end professional development and economic opportunity.

Cultural and Contextual Relevance

A significant gap exists in the cultural localization of available tools. Mainstream international platforms operate on a one-size-fits-all model, with interfaces and community norms centered on Western creative markets. They offer no support for local languages like Krio, Mende, or Temne, and their content algorithms are not tuned to promote Sierra Leonean talent or connect users to regional opportunities. Creatuno is designed with local contextualization as a core principle. This includes a bilingual English-Krio interface, design sensibilities that reflect local aesthetics, features that accommodate prevalent business practices (such as integration pathways for mobile money), and a community framework built around the specific disciplines and hubs active within Sierra Leone's creative economy.

Barriers to Entry and Sustained Use

The barriers to effective use of existing platforms are multifaceted. Professional portfolio sites often have a steep learning curve and may hide advanced features behind paywalls, while the "free" access to social media masks high cumulative data costs and demands constant content creation to beat algorithmic feeds. Creatuno seeks to implement a low-barrier, high-value model. Its PWA nature eliminates app store downloads, its user experience is designed for varying levels of digital literacy, and its core functionality is intended to be freely accessible. By reducing the friction and cost of creating a professional online presence and accessing growth tools, it aims to enable broader participation in the formal digital creative economy.

In summary, while global platforms and social media provide partial solutions, they are misaligned with the technical, economic, and cultural realities of Sierra Leonean creatives. This comparative analysis demonstrates that Creatuno is not merely another platform, but a targeted intervention designed to synthesize professional tools into an

accessible, context-sensitive ecosystem that directly addresses the systemic gaps inhibiting the sector's growth. This positions the project to fill a unique and vital niche in the market.

Summary Table: Comparative Analysis of Existing Systems vs. Creatuno

Evaluation Dimension	Global Portfolio Platforms (e.g., Behance, Dribbble)	Social Media & Messaging Apps (e.g., Instagram, WhatsApp)	Proposed Creatuno Platform
1. Technical Efficiency & Accessibility	Poor. High-bandwidth, data-heavy design; no offline functionality; poor performance on 2G/3G networks.	Moderate to Poor. Data-intensive auto-play videos/feeds; limited offline utility; performance tied to connection quality.	Excellent. PWA architecture built for low-bandwidth: offline access via service workers, lazy loading, and data compression for use on basic devices and slow networks.
2. Professional Feature Set	Strong display, weak ecosystem. Excellent for global visual showcase but lacks integrated local job markets, structured mentorship, or	Very weak. Designed for social, not professional, interaction. Job posts are ad-hoc and unverified ; no portfolio	Holistic & Integrated. Unifies portfolio builder, structured mentorship matching, verified local job board, and community collaboration tools in

Evaluation Dimension	Global Portfolio Platforms (e.g., Behance, Dribbble)	Social Media & Messaging Apps (e.g., Instagram, WhatsApp)	Proposed Creatuno Platform
	business tools for freelancers.	curation, secure transactions, or professional networking tools.	one professional ecosystem.
3. Cultural & Contextual Relevance	Global/Standardized. No support for local languages (Krio, Mende, Temne); algorithms and content not tailored to Sierra Leonean market or creative practices.	Algorithm-Driven & Global. Not designed for the Sierra Leonean creative economy; does not promote local talent or facilitate local business norms.	Locally Contextualized. Bilingual interface (English/Krio) ; design reflects local aesthetics; supports local practices (e.g., mobile money); focuses on domestic/regional opportunities.
4. Barrier to Entry & Sustainability	High. Steep learning curve for professional presentation; core features often behind paywalls; assumes high digital literacy.	Low barrier, high hidden cost. Easy to join but professional use is inefficient and	Designed for Low Barriers. Mobile-first for basic smartphones; intuitive interface for varying digital literacy; freemium

Evaluation Dimension	Global Portfolio Platforms (e.g., Behance, Dribbble)	Social Media & Messaging Apps (e.g., Instagram, WhatsApp)	Proposed Creatuno Platform
		risky ; high data costs; success depends on algorithmic visibility, not merit.	model ensures core access; reduces data cost as a primary constraint.

2.6 Identified Research Gaps

This review reveals a significant and actionable research gap. While substantial, parallel bodies of work exist on Sierra Leone's creative economy potential, its digital infrastructure challenges, and the models of digital mentorship —there is a lack of applied research that converges these domains.

No existing study or platform provides a cohesive, evidence-based framework for a digital tool that:

- Is **technologically architected from the ground up** (using PWA principles) for Sierra Leone's specific connectivity and device landscape.
- **Translates formal mentorship and portfolio models** into a system relevant for an informal, entrepreneurial creative sector.
- **Explicitly targets and measures** the enhancement of digital and financial capabilities as a pathway to professional and economic growth for creatives.

Therefore, this dissertation will address this gap. The development and pilot evaluation of Creatuno is not merely a software project; it is an integrated socio-technical

intervention. It aims to generate new knowledge on effectively bridging the disconnect between high-potential economic sectors and the digital tools needed to unlock that potential in resource-constrained environments. The following chapter will detail the mixed-methods research design chosen to guide this development and measure its impact.

To help visualize how Creatuno's features are designed to address the specific challenges identified in this review, the following table maps core platform components to the key barriers faced by Sierra Leonean creatives:

Identified Barrier (from Literature)	Relevant Creatuno Feature	Intended Outcome
Low Digital Literacy (26/100 score)	Simplified, icon-driven UI; Bilingual (Krio/English) guides; In-app tutorials for portfolio creation.	Lower the learning curve, enabling non-tech-savvy creatives to build an online professional presence.
High Data Costs & Poor Connectivity	PWA Core: Offline portfolio viewing; Optimized image compression; Background sync for messages.	Make the platform usable and affordable by drastically reducing reliance on continuous, expensive mobile data.
Lack of Structured Mentorship & Professional Networks	Algorithm-assisted mentor matching; In-platform messaging and goal tracking; Community forums.	Move professional guidance from ad-hoc, informal exchanges to structured, goal-oriented relationships and peer support.

Identified Barrier (from Literature)	Relevant Creatuno Feature	Intended Outcome
Limited Market Access & Financial Informality	Integrated local job/ gig board; Portfolio showcase with direct contact; Mobile money payment facilitation guides.	Connect creatives directly to opportunities and provide pathways to secure, digital transactions.

3.0 Chapter 3: Research Methodology

3.1 Introduction

This chapter outlines the research methodology adopted for this study, which focuses on the design, development, and evaluation of Creatuno, a digital platform aimed at supporting creative professionals in Sierra Leone. The methodology provides a systematic framework for investigating the research problem, gathering and analysing data, and developing a practical technological solution grounded in empirical evidence. Given the applied and solution-oriented nature of the study, the chapter integrates social research methods with software development practices to ensure both academic rigour and practical relevance.

The chapter explains the research design, research approach, population and sampling procedures, data collection methods, research instruments, data analysis techniques, and ethical considerations guiding the study. This structured approach ensures transparency, replicability, and credibility of the research process.

3.2 Research Design

This study employs a mixed-methods research design (MMRD) situated within the broader paradigm of Design Science Research (DSR). The MMRD facilitates the collection, analysis, and integration of both qualitative and quantitative data within a single inquiry. This is paramount for a project that seeks to first understand complex human behaviours and challenges (qualitative) and then measure the prevalence of those challenges and evaluate solution efficacy (quantitative).

The DSR framework, as formalised by Hevner et al. (2004), provides the overarching structure. DSR is fundamentally a problem-solving paradigm that seeks to create and evaluate innovative artefacts—in this case, the Creatuno platform—as a means to address identified organisational or societal problems. This design science orientation shifts the research from purely descriptive or explanatory to constructive and evaluative, focusing on the building and rigorous assessment of a viable solution.

The research design is operationalised through three distinct, yet interconnected and iterative, phases:

- **Exploratory and Requirements Elicitation Phase:** This initial phase is predominantly qualitative. It aims to gain a deep, contextual understanding of the challenges faced by creative professionals in Sierra Leone, their unmet needs, existing workarounds, and their expectations from a digital platform. Methods include semi-structured interviews and focus group discussions (FGDs).
- **Development and Iterative Construction Phase:** Informed by Phase 1, this phase involves the systematic design and development of the Creatuno platform. It follows an **Agile methodology**, allowing for incremental development and the incorporation of continuous feedback. Preliminary findings and prototype features are validated with users in short, iterative cycles (sprints).
- **Evaluation and Assessment Phase:** This final phase employs a mix of methods to evaluate the developed artefact. Quantitative usability testing (e.g., System Usability Scale) and usage analytics are combined with qualitative feedback from pilot users to assess the platform's functionality, usability, relevance, and perceived impact.

This tri-phase design enables methodological triangulation, where findings from one method inform and are cross-verified by another, significantly enhancing the study's overall credibility and the validity of the final design.

3.3 Research Approach and Methodology

The research is guided by a pragmatist research philosophy. Pragmatism, as articulated by scholars like John Dewey, prioritises the research question over adherence to a strict ontological or epistemological dogma. It advocates for the use of multiple methods to best generate knowledge that is practical, actionable, and works in real-world contexts. This philosophy is exceptionally fitting for this study, as the core aim is not to test a universal theory but to solve a concrete, practical problem—the lack of a unified digital ecosystem for creatives in Sierra Leone.

From this philosophical stance flows a mixed-methodological approach:

- **Qualitative Methods** are used to explore the "why" and "how": Why are creatives struggling with visibility? How does the informal economy affect their operations? These methods provide depth, detail, and context.
- **Quantitative Methods** are used to establish the "what" and "how much": What percentage of creatives have consistent internet access? How many prioritise mentorship over portfolio display? These methods provide breadth and generalisability to trends observed in the qualitative data.

Furthermore, the **Agile software development methodology** (specifically Scrum) serves as the operational project management and development framework. It translates the pragmatist philosophy into practice by promoting adaptability, user collaboration, and responsiveness to change—key tenets for ensuring the developed platform remains aligned with empirically derived user needs throughout the project lifecycle.

3.4 Population of the Study

The population of the study is defined as the entire collection of individuals, groups, and organizations that constitute the ecosystem within which the *Creatuno* platform will operate and from which insights must be drawn for its design and evaluation. A precise delineation of this population is critical for establishing the study's scope, ensuring the relevance of data, and defining sampling parameters. For this research, the population is not monolithic but is strategically stratified into Primary and Secondary populations based on their direct relationship to the platform's core functions and value proposition.

Primary Target Population

The primary population consists of individuals who are the direct end-users and primary beneficiaries of the *Creatuno* platform. Their lived experiences, needs, and behaviors are the central focus of the investigation.

- **Definition: Actively practicing creative professionals in Sierra Leone.** "Active practice" is operationalized as individuals who have earned income or pursued sustained non-commercial projects within a creative discipline in the 12 months preceding the study.

- **Key Demographic Focus: Ages 18–35 years.** This cohort represents the most dynamic segment of the workforce, is typically more digitally native, and faces the most acute challenges regarding career establishment, networking, and access to economic opportunities.
- **Disciplinary Composition:** The study intentionally includes a diverse range of disciplines to capture the sector's heterogeneity and test the platform's versatility. Core disciplines include:
 - **Visual & Digital Arts:** Photographers, Graphic Designers, Illustrators, Digital Painters.
 - **Audio & Music:** Musicians (instrumentalists, vocalists), Music Producers, Sound Engineers.
 - **Performance & Film:** Filmmakers, Video Editors, Actors, Dancers, Theatre Practitioners.
 - **Design & Craft:** Fashion Designers, Textile Artists, Product Designers, Artisans with a contemporary market focus.
 - **Literary & Media:** Writers, Poets, Digital Content Creators, Bloggers focusing on arts and culture.
- **Geographic Scope:** While recognizing national distribution, the study focuses on urban and peri-urban hubs with significant creative activity: Freetown (Western Area), Bo, Kenema, and Makeni. This allows for analysis of potential differences in access, challenges, and opportunities between the capital and regional centers.

Secondary Stakeholder Populations

Secondary populations encompass key actors who influence, interact with, or are impacted by the primary population and the platform. Their inclusion is essential for ensuring the platform's design is viable, sustainable, and integrated into the broader creative economy.

1. Category A: Enablers & Gatekeepers

1. **Mentors & Seasoned Professionals:** Individuals with over 5 years of recognized professional success in a creative field. They provide insight into career pathways, skill gaps, and the feasibility of mentorship models.
2. **Clients & Employers:** This includes small businesses, advertising agencies, event planners, NGOs, corporations, and individual commissioners of creative work. They provide the demand-side perspective on skill needs, hiring challenges, and payment practices.

2. **Category B: Institutional & Support Actors**

1. **Government & Policy Entities:** Officials from ministries responsible for Youth, Tourism & Cultural Affairs, and Innovation. Their input is crucial for understanding policy alignment and potential for public-sector collaboration.
2. **Educational Institutions:** Lecturers and department heads from universities, vocational institutes, and art schools. They offer insights on formal training gaps and the transition from education to professional practice.
3. **Non-Governmental Organizations (NGOs) & Donors:** Local and international organizations supporting creative enterprise, cultural development, or youth employment. They inform understanding of the support landscape and funding mechanisms.

3. **Category C: Infrastructure & Ecosystem Partners**

1. **Investors & Financial Institutions:** Entities interested in the creative sector's economic potential. Their perspective is vital for designing platform features related to monetization, financial transparency, and investment readiness.
2. **Technology Service Providers:** Local IT firms, digital marketers, and telecom representatives. They offer practical insights into infrastructure

constraints, data costs, and technical feasibility in the Sierra Leonean context.

Rationale for Population Stratification

This stratified approach serves multiple methodological purposes:

- **Triangulation:** Data from primary users is cross-validated with perspectives from secondary stakeholders. For instance, a creative professional's complaint about "late payments" can be explored from the client's perspective regarding "payment processes and trust."
- **Holistic Design:** A platform that only addresses the needs of creatives in isolation may fail. Understanding the expectations and constraints of clients, mentors, and institutions is necessary to design a viable ecosystem, not just a tool.
- **Sustainability Validation:** Engaging with institutional and financial stakeholders early helps assess the long-term sustainability model for the platform, moving it beyond a conceptual academic project to a potentially implementable solution.

Operational Boundaries and Exclusions

For clarity, the study population *excludes*:

1. Individuals under 18 years of age.
2. Creative professionals who have been entirely inactive (no project or income) for over two years.
3. International creative professionals, as the platform's initial scope is Sierra Leone-specific.

This focused definition ensures that data collection efforts are targeted, resources are efficiently deployed, and the findings are directly applicable to the platform's core use case.

3.5 Sample Size and Sampling Technique

This section details the strategic plan for selecting participants from the defined population. Given the mixed-methods design, no single sampling technique is

sufficient. Instead, a hybrid, purposive-driven strategy is employed, where the technique and target sample size are deliberately aligned with the specific objectives of each methodological component—prioritizing depth and richness for qualitative elements and breadth and indicator prevalence for the quantitative element.

Overall Sampling Strategy and Philosophy

The overarching strategy is **non-probability sampling**, as the research aims for analytical depth and contextual understanding rather than statistical generalization to the entire national population of creatives. The choice of specific techniques within this paradigm is guided by:

- **Purposeful Selection:** To capture the most information-rich cases relevant to the research problem.
- **Feasibility:** Acknowledging the constraints of researching a semi-formal sector without a pre-existing, complete sampling frame.
- **Triangulation Logic:** Using different sampling methods for different data strands to build a more comprehensive picture.

Sampling for Qualitative Components (Interviews & FGDs)

For the in-depth interviews and focus group discussions, purposive sampling is the core technique.

- **Technique & Justification:** Participants are deliberately selected based on their potential to provide deep, nuanced, and diverse insights into the research questions. This is essential for exploratory research seeking to understand complex phenomena like professional challenges, trust, and digital behaviors.
- **Sub-Technique Application:**
 - For Semi-Structured Interviews, maximum variation sampling is used. The goal is to recruit a wide spectrum of participants across key variables to capture the full range of experiences. The researcher will seek individuals from different creative disciplines, geographic locations (Freetown, Bo, Kenema, Makeni), genders, career stages (emerging,

established), and employment statuses (self-employed, freelance, employed by firm).

- For Focus Group Discussions, homogeneous sampling is applied. Participants for a single FGD are selected to be similar in a key dimension (e.g., all visual artists, all performers) to create a comfortable environment where they can discuss shared experiences in depth. Different FGDs will cover different discipline clusters.

- **Sample Size Determination:**

- **Interviews:** A target of **N = 15** is set. This aligns with common qualitative research norms where saturation—the point where new interviews yield little or no new thematic information—is often achieved within this range.
- **FGDs:** A target of **3 FGDs with 8-10 participants each** (total 24-30) is planned. Three groups are typically sufficient to identify consistent patterns across different sub-groups, and 8-10 participants is an optimal size for manageable, in-depth discussion.
- **Mentor Interviews:** A separate purposive sample of **N = 5-8** experienced professionals (5+ years) will be drawn from the secondary stakeholder population.

Sampling for the Quantitative Component (Survey)

For the online survey, the primary technique is snowball sampling, supplemented by purposive dissemination.

- **Technique & Justification:** Given the absence of a centralized registry of creative professionals, probability sampling is impractical. Snowball sampling leverages existing social and professional networks. An initial "seed" group of purposively identified creatives (from contacts, social media, and associations) is invited to take the survey and is then asked to share it within their own networks.

- **Sample Size Determination:** A minimum target of **$N \geq 100$** completed responses is set. This size is justified for several reasons:
 - It allows for meaningful descriptive statistical analysis (frequencies, percentages, means) with a reasonable degree of stability.
 - It enables basic cross-tabulation analyses (e.g., examining challenges by discipline or location) without cells becoming too small for interpretation.
 - It provides a sufficiently broad scan of the sector to identify major trends and patterns to complement the deep qualitative data.
- **Managing Bias:** The inherent bias of snowball sampling (towards more networked individuals) is acknowledged as a study limitation. To mitigate this, the survey will be disseminated through multiple, diverse seed points (different discipline leaders, geographic hubs, and online forums).

Recruitment and Access

Recruitment will be conducted through:

- **Gatekeepers and Associations:** Contact with leaders of informal creative collectives, arts institutions, and cultural centers.
- **Social Media and Digital Channels:** Targeted advertisements and posts in Facebook groups, Instagram communities, and WhatsApp networks popular with Sierra Leonean creatives.
- **Direct Outreach:** Leveraging the researcher's network for initial contacts.

Summary of Sample Plan

The following table summarizes the integrated sampling plan:

Research Component	Target Sample Size	Sampling Technique	Primary Justification
Semi-Structured Interviews	15 creative professionals	Purposive (Maximum Variation)	To achieve depth and diversity of experiences; data saturation.
Focus Group Discussions	24-30 (3 groups of 8-10)	Purposive (Homogeneous)	To facilitate in-depth, shared discussion within discipline clusters.
Mentor Interviews	5-8 experienced professionals	Purposive	To gain expert insight from seasoned stakeholders.
Online Survey	≥ 100 creative professionals	Snowball / Purposive Dissemination	To obtain broad-based quantitative indicators from the networked population.

3.6 Data Collection Methods

Multiple data collection methods are used to support triangulation and improve the reliability of findings:

1. **Survey Method:** Structured online questionnaires are used to collect quantitative data on challenges, platform usage, feature preferences, and technology access.
2. **Semi-Structured Interviews:** In-depth interviews are conducted to explore individual experiences, motivations, and expectations in greater detail.

3. **Focus Group Discussions:** Group discussions are used to validate findings, encourage collective reflection, and prioritise platform features.
4. **System Evaluation Data:** Usability testing, user feedback, and system analytics are collected during pilot deployment.

These methods collectively provide both breadth and depth of insight into the research problem.

3.7 Research Instruments

This section details the specific tools that were deployed to operationalize the data collection methods. The instruments were designed, piloted, and refined to ensure they effectively captured data aligned with the research objectives. Their implementation followed a structured process to ensure validity, reliability, and ethical compliance.

Structured Questionnaire (Online Survey)

This instrument was successfully administered to collect quantitative and qualitative data from a broad sample of creative professionals.

- **Final Design and Deployment:** The final questionnaire comprised six sections and was built and hosted on Google Forms for its accessibility and mobile-friendly interface. The implemented sections were:
 1. **Informed Consent Page:** A mandatory page detailing the study's purpose, data anonymity, voluntary participation, and researcher contact. Participants had to click "I consent to proceed" to access the survey.
 2. **Section A: Demographic and Professional Profile:** Collected data on age range, gender, primary location (Freetown, Bo, Kenema, Makeni, Other), primary creative discipline, years of experience, and employment type (e.g., self-employed, freelance, employed by organization).
 3. **Section B: Assessment of Professional Challenges:** Utilized a 5-point Likert scale (1=Not a Challenge to 5=Major Challenge) to measure the perceived severity of 12 pre-identified challenges, including "Finding

reliable clients," "Receiving payments on time," "Accessing affordable training," and "Building a professional reputation."

4. **Section C: Digital Literacy and Access:** Employed multiple-choice and frequency scales to assess internet access points, primary devices for work, and usage of existing digital platforms (e.g., Facebook, Instagram, dedicated portfolio sites) for professional activities.
 5. **Section D: Feature Prioritization for *Creatuno*:** Presented a list of 15 proposed platform features. Respondents rated the importance of each feature on a 5-point scale (1=Not Important to 5=Extremely Important) and performed a drag-and-drop ranking exercise for the top 5 most critical features.
 6. **Section E: Open-Ended Feedback:** Included two optional text boxes: "Please describe any other significant challenge not listed above" and "Any additional suggestions for a platform like *Creatuno*?"
- **Piloting and Refinement:** Prior to full deployment, the questionnaire was piloted with 8 creative professionals. Feedback indicated the need to simplify technical jargon in two feature descriptions and to reduce the initial list of challenges from 15 to 12 to avoid survey fatigue. These adjustments were made for the final version.

Semi-Structured Interview Guide

This guide formed the flexible framework for all in-depth interviews conducted during the exploratory phase.

- **Final Structure and Application:** The guide ensured coverage of key themes while allowing conversational depth. The implemented structure was:
 1. **Opening Protocol:** Standardized introduction with reaffirmation of ethical consent for recording, guaranteed anonymity, and the right to withdraw.
 2. **Core Interview Questions:** The following core questions, with associated probes, were used in every interview:

- "Can you describe your journey as a creative professional in Sierra Leone?" (Probes: Key milestones, turning points, support systems.)
- "Walk me through your process for securing a typical project, from first contact to final delivery." (Probes: How you find opportunities, negotiation, contracts, payment.)
- "What are the most significant barriers you face in growing your income or reputation?" (Probes: Examples, emotional impact, coping strategies.)
- "What does 'professional development' mean to you, and how do you pursue it?" (Probes: Mentorship experiences, training access, skill gaps.)
- "Imagine an ideal digital tool for your work. What would it do, and how would it change your practice?" (Probes: Specific features, how it solves current pains.)

3. **Closing:** A final invitation: "Is there anything crucial about your experience as a creative professional that we haven't touched on?"

- **Implementation Note:** While the guide provided structure, interviewers were trained to actively listen and follow the participant's narrative, using probes flexibly to explore emerging topics not on the original guide but relevant to the research questions.

Focus Group Discussion (FGD) Guide

This guide facilitated the three focus group discussions, focusing on interactive data generation.

- **Final Agenda and Execution:** Each 90-minute FGD followed this agenda:
 1. **Welcome & Ground Rules (10 mins):** Introductions, confidentiality reminder, and establishment of discussion rules (one voice at a time, respect differing views).

2. **Warm-Up Activity (15 mins):** Participants completed the sentence: "A successful creative professional in Sierra Leone needs..." on a card, followed by a quick, anonymous sharing of responses to spark initial thought.
3. **Structured Discussion (50 mins):** Facilitated dialogue around two key themes derived from early interview analysis:
 - Theme 1: **"Trust and Transactions in the Digital Space."**
 - Theme 2: **"The Ideal Mentorship and Learning Model."**
 Guided questions were used, but the facilitator prioritized mediating participant-to-participant dialogue.
4. **Participatory Co-Design Activity (20 mins):** The core activity involved feature card sorting and dot-voting. Participants were given cards with the 15 features from the survey and asked to: first, collectively group them into categories (e.g., "Must-Have," "Nice to Have," "For Future"); second, use sticky dots to vote for the 3 features they deemed most critical for a first version.
5. **Summary & Validation (5 mins):** The facilitator summarized key consensus points and disagreements heard, asking the group for confirmation or correction ("Did I capture that correctly?").

- **Logistics:** All FGDs were audio-recorded with consent. The card sorting and dot-voting results were photographed as physical artifacts for analysis.

Usability and Pilot Evaluation Instruments

These standardized tools were used to evaluate the functional *Creatuno* prototype.

- **Deployed Evaluation Package:** Each usability test session with a pilot user included:
 1. **Pre-Test Questionnaire:** A short form capturing the tester's discipline, self-rated tech-savviness, and frequency of use of similar apps.

2. **Task Scenario Sheet:** Users received 5 key task scenarios printed on paper, such as: "Task 1: Update your profile to show you are available for freelance work," and "Task 3: Find and message a potential mentor in graphic design."
3. **Observation Protocol:** The researcher used a checklist to note task success/failure, time-on-task (using a stopwatch), errors made, and notable verbal comments during the "think-aloud" process.
4. **Post-Test System Usability Scale (SUS):** Immediately after completing the tasks, users completed the standard 10-item SUS questionnaire, providing a quantifiable usability score.
5. **Semi-Structured Debrief:** A short, informal interview based on the questions: "What was the easiest part to use?", "What was the most frustrating?", and "What one thing would you change first?"

3.8 Data Analysis Techniques

Quantitative Data Analysis

Quantitative data collected through surveys is analysed using descriptive statistical techniques, including frequencies, percentages, means, and standard deviations. Feature importance rankings and cross-tabulations are used to identify patterns across demographic variables.

Qualitative Data Analysis

Qualitative data from interviews and focus groups is analysed using thematic analysis. The process involves transcription, coding, theme development, and cross-case comparison. Findings from qualitative analysis are triangulated with quantitative results to ensure consistency and depth of interpretation.

3.9 Ethical Considerations

Ethical principles are observed throughout the research process. Participation is voluntary, and informed consent is obtained from all participants prior to data collection. Participants are assured of confidentiality and anonymity, with identifying information removed during analysis and reporting.

Data is securely stored and used solely for academic purposes. Participants retain the right to withdraw from the study at any stage without penalty. The research adheres to institutional ethical guidelines and best practices for responsible research conduct.

3.10 Chapter Summary

This chapter has detailed the research methodology adopted for the study, outlining the research design, approach, population, sampling strategy, data collection methods, research instruments, data analysis techniques, and ethical considerations. The methodology provides a robust foundation for the system design, implementation, and evaluation presented in subsequent chapters.