Harnessing Indigenous Knowledge Systems for Infopreneurship: Reposition Library and Information Science Professionals for Sustainable Economic Empowerment in Zamfara State, Nigeria

By

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Abstract

Rising unemployment among Library and Information Science (LIS) graduates and the persistent marginalization of indigenous knowledge (IK) in Northern Nigeria demand innovative approaches to repositioning the profession for sustainable relevance. This paper examines how LIS professionals in Zamfara State can leverage indigenous knowledge and local content to develop viable infopreneurial ventures for economic empowerment. Anchored on the Resource-Based View and Social Capital Theory, the study adopts a qualitative case study design. Data were gathered through in-depth interviews with 15 LIS professionals, 10 IK custodians in agriculture, traditional medicine, and crafts, and 3 practising infopreneurs operating in Gusau, Anka, and Talata Mafara, alongside focus group discussions with final-year LIS students at Federal University Gusau and Zamfara State College of Education, Maru. The study investigates: (1) types of IK with commercial potential in Zamfara, (2) infopreneurial models for packaging and monetizing IK such as digital archives, documentaries, e-books, and community radio content, (3) the roles of LIS professionals as IK brokers and curators, and (4) socio-cultural, policy, and infrastructural barriers. Findings reveal significant IK assets in farming calendars, gold processing techniques, leatherwork, and medicinal plants that remain largely undocumented and under-commercialized. LIS professionals currently lack training in IK documentation, digital storytelling, and intellectual property rights, yet pilot initiatives demonstrate high market demand for Hausa-language digital content on traditional agriculture and health. The paper proposes a Zamfara IK Infopreneurship Framework linking libraries, IK custodians, and digital platforms, concluding that IK infopreneurship can reduce graduate unemployment, preserve cultural heritage, and diversify the state economy. Recommendations include curriculum reform, state-level IK policy, and incubation hubs in public libraries.

Keywords: *indigenous knowledge; infopreneurship; Library and Information Science profession; economic empowerment; Zamfara State; digital content*

Introduction

The persistent challenge of graduate unemployment in Nigeria, particularly among Library and Information Science (LIS) professionals, has compelled scholars and practitioners to seek alternative paradigms for professional relevance and economic sustenance. According to the National Bureau of Statistics (2022), Nigeria's youth unemployment rate stands at approximately 33.3 percent, with graduates in the humanities and information fields disproportionately affected. In Zamfara State, where formal employment opportunities in the information sector remain scarce, the need for innovative professional repositioning has never been more urgent. The conventional model of LIS practice, which centres on traditional library services such as cataloguing, reference work, and circulation, is increasingly insufficient to address the economic realities facing graduates and practising professionals alike.

Simultaneously, the vast reservoir of indigenous knowledge (IK) in Zamfara State continues to be marginalized in formal development discourse. The state is home to rich traditions in artisanal gold processing, leatherwork, traditional medicine, and agricultural practices that have sustained communities for centuries (Ezeanya-Esiobu, 2019). These knowledge systems, however, remain largely undocumented, uncommercialized, and vulnerable to extinction as younger generations migrate to urban centres in search of formal employment. The paradox of sitting on a goldmine of knowledge while experiencing acute economic deprivation underscores the need for a bridge between indigenous knowledge custodians and information professionals capable of packaging, preserving, and monetizing such knowledge.

Infopreneurship, defined as the entrepreneurial practice of identifying, packaging, and marketing information products and services for profit (Aregbesola, Van der Walt, Owolabi, Idiegbeyan-Ose, Okocha, & Eyiolorunshe, 2019), offers a compelling framework for bridging this gap. LIS professionals possess unique competencies in information organization, digital content management, and knowledge dissemination that position them as ideal intermediaries between indigenous knowledge holders and market opportunities. The concept of infopreneurship extends beyond traditional librarianship by encouraging professionals to create value from information assets, thereby generating income while simultaneously serving community development goals (Friday & Sawyer-George, 2023).

This paper argues that by harnessing indigenous knowledge systems for infopreneurial ventures, LIS professionals in Zamfara State can achieve sustainable economic empowerment while contributing to the preservation and commercialization of cultural heritage. The study examines the types of indigenous knowledge with commercial potential, explores viable infopreneurial models for their monetization, identifies the roles LIS professionals can play as knowledge brokers and curators, and assesses the barriers that must be overcome. Anchored on the Resource-Based View and Social Capital Theory, the investigation adopts a qualitative case study approach that captures the lived experiences and perspectives of LIS practitioners, IK custodians, and successful infopreneurs in the study area.

Conceptual Clarifications

Indigenous Knowledge Systems

Indigenous knowledge systems (IKS) refer to the cumulative body of knowledge, practices, and beliefs evolved through adaptive processes and handed down through generations by cultural transmission, pertaining to the relationship of living beings with one another and their environment

(Warren, 1991). Unlike Western scientific knowledge, which tends to be codified, universal, and transmitted through formal institutions, indigenous knowledge is typically tacit, context-specific, and communicated through oral traditions, apprenticeship, and communal practice (Sillitoe, 1998). In the African context, IKS encompasses a wide range of domains including agriculture, medicine, crafts, governance, conflict resolution, and environmental management (Dei, Hall, & Rosenberg, 2000).

In Zamfara State specifically, indigenous knowledge manifests in several economically significant domains. Artisanal gold processing techniques, which have been practised for centuries in areas such as Anka and Maru, represent a sophisticated body of metallurgical knowledge that predates colonial mining operations (Dooyema, Neri, Lo, Durant, Dargan, Swarthout, Bieler, Sandberg, Carter, Dickey, & Obiorah, 2012). Traditional agricultural practices, including rain prediction methods, pest management using local botanicals, and crop rotation systems tied to lunar cycles, constitute a comprehensive ecological knowledge system. Leatherwork, particularly the tanning and embroidery traditions of Gusau and Talata Mafara, has historically served both domestic and commercial purposes across the Sahel region. Medicinal plant knowledge, held predominantly by traditional healers, encompasses the identification, preparation, and administration of remedies for ailments ranging from malaria to gastrointestinal infections (Sofowora, 2008).

Despite their economic potential, these knowledge systems face existential threats. Globalization and the spread of Western education have diminished the prestige and transmission of indigenous knowledge among younger populations (Battiste, 2002). The absence of systematic documentation means that much of this knowledge resides exclusively with elderly custodians, creating a risk of irreversible loss. Furthermore, the lack of intellectual property protections leaves indigenous knowledge vulnerable to appropriation by external commercial interests without fair compensation to the originating communities (Agrawal, 1995). The persistence of this divide between indigenous and scientific knowledge systems highlights why professional intervention in documentation, preservation, and strategic commercialization of IKS is so urgently needed (Brokensha, Warren, & Werner, 1980).

Infopreneurship

Infopreneurship is a portmanteau of "information" and "entrepreneurship" that describes the practice of creating, packaging, and selling information-based products and services for profit (Aregbesola et al., 2019). The concept emerged in the late twentieth century as the information economy created new opportunities for individuals and organizations to generate revenue from knowledge assets. Infopreneurs operate at the intersection of information science, business strategy, and technology, leveraging their ability to identify, organize, and deliver information in formats that meet specific market demands (Kuny & Cleveland, 1998).

In the context of LIS, infopreneurship represents a paradigm shift from the traditional service-oriented model to a market-oriented approach. While conventional librarianship focuses on providing free or subsidized access to information, infopreneurship encourages professionals to identify information gaps and develop marketable solutions. Examples include creating specialized databases, publishing industry reports, developing digital content platforms, offering information brokerage services, and producing educational materials (Friday & Sawyer-George, 2023). The World Bank has identified entrepreneurship as a driver of economic empowerment in developing economies where formal employment opportunities are limited, particularly for knowledge workers whose skills remain underutilized (Auriol, 2013; World Bank, 2011).

The relevance of infopreneurship to the Nigerian LIS context cannot be overstated. With the proliferation of mobile technology and internet connectivity, even in semi-urban and rural areas, the market for packaged digital content has expanded significantly. The Nigerian Communications Commission (2023) reported that Nigeria had over 220 million active mobile subscriptions, with internet penetration reaching 55.4 percent. This digital infrastructure creates unprecedented opportunities for LIS professionals to develop and distribute information products, particularly in local languages that serve populations with limited access to English-language content. For Zamfara State, where Hausa is the lingua franca and digital content in the language commands substantial audiences, infopreneurship built around indigenous knowledge represents a particularly promising avenue.

LIS Professionals and Knowledge Brokering

The role of LIS professionals has evolved significantly beyond the traditional confines of library management. Contemporary information science recognises the LIS professional as a knowledge broker, a mediator who facilitates the flow of information between knowledge producers and knowledge consumers (Kaniki & Mphahlele, 2002). This brokering function is especially critical in the context of indigenous knowledge, where the gap between knowledge holders and potential users is often vast. LIS professionals possess competencies in information needs assessment, knowledge organization, metadata creation, digital preservation, and user engagement that are essential for translating raw indigenous knowledge into accessible and marketable information products.

In Africa, several scholars have advocated for an expanded role for LIS professionals in indigenous knowledge management. Ngulube (2002) argues that information professionals have a professional and ethical obligation to ensure that indigenous knowledge is documented, preserved, and made accessible to both local communities and the broader society. Mutula (2008) contends that libraries and information centres should serve as repositories and dissemination points for indigenous knowledge, thereby contributing to both cultural preservation and economic development. Moahi (2012) further suggests that the integration of indigenous knowledge into library collections and services is not merely an option but a necessity for the relevance and sustainability of the LIS profession in African settings.

However, the capacity of LIS professionals to serve effectively as indigenous knowledge brokers is constrained by several factors. Training programmes in Nigerian library schools continue to emphasise Western models of information management, with limited attention to indigenous knowledge documentation, oral history methods, or community engagement strategies (Makinde & Shorunke, 2013). The intellectual property dimensions of indigenous knowledge, which differ significantly from conventional copyright frameworks, are rarely addressed in LIS curricula. Additionally, the technological infrastructure required for digital documentation and content distribution remains inadequate in many parts of Northern Nigeria, including Zamfara State (Makinde & Shorunke, 2013). These capacity gaps highlight the need for both curriculum reform and institutional investment to enable LIS professionals to fulfil their potential as IK brokers and infopreneurs.

Theoretical Framework

This study is anchored on two complementary theoretical perspectives: the Resource-Based View (RBV) and Social Capital Theory (SCT). Together, these frameworks provide a robust analytical lens for understanding how indigenous knowledge can serve as a strategic resource for

infopreneurial ventures and how social relationships facilitate the mobilization and commercialization of such knowledge.

Resource-Based View

The Resource-Based View, originally articulated by Barney (1991), posits that an organization's sustained competitive advantage derives from resources that are valuable, rare, inimitable, and non-substitutable (VRIN). When applied to the present study, the RBV framework suggests that indigenous knowledge constitutes a strategic resource that meets the VRIN criteria. Indigenous knowledge is valuable because it addresses real needs in agriculture, health, and craftsmanship that remain unmet by imported solutions. It is rare because it is held by specific communities and individuals in particular geographic contexts. It is inimitable because it is embedded in cultural practices, oral traditions, and tacit understandings that cannot be easily replicated by external actors. And it is non-substitutable because Western scientific alternatives often fail to account for the local ecological and cultural specificities that indigenous knowledge addresses (Agrawal, 1995; Brokensha, Warren, & Werner, 1980).

From an infopreneurial perspective, the RBV framework highlights the competitive advantage that LIS professionals can gain by developing unique information products based on indigenous knowledge. Digital archives of traditional farming calendars, documentaries on gold processing techniques, and e-books on medicinal plants represent information products that cannot be readily replicated by competitors who lack access to the source communities and the professional competencies to document and package such knowledge. The RBV thus provides a theoretical justification for the proposition that IK-based infopreneurship can generate sustainable economic returns for LIS professionals who invest in the documentation and commercialization of these resources (Barney, 1991).

Social Capital Theory

Social Capital Theory, associated with the works of Bourdieu (1986), Coleman (1988), and Putnam (2000), emphasises the productive value of social relationships and networks. Social capital refers to the resources embedded in social structures that individuals and groups can access and mobilize for purposive action. Three dimensions of social capital are commonly distinguished: bonding social capital (strong ties within homogeneous groups), bridging social capital (weaker ties across diverse groups), and linking social capital (vertical connections between individuals and institutions of unequal power) (Szreter & Woolcock, 2004).

In the context of IK infopreneurship, Social Capital Theory illuminates the critical role of relationships in accessing and commercializing indigenous knowledge. LIS professionals must develop bonding social capital with IK custodians through trust-building, cultural sensitivity, and demonstrated commitment to community benefit. This is essential because indigenous knowledge is often regarded as sacred or proprietary, and its sharing with outsiders is governed by cultural protocols and social norms (Briggs, 2005). Bridging social capital enables LIS professionals to connect IK custodians with market opportunities, technology partners, and distribution channels. Linking social capital facilitates access to institutional resources, policy support, and funding mechanisms that can scale up infopreneurial ventures.

The synergy between RBV and SCT is particularly instructive for this study. While the RBV explains why indigenous knowledge constitutes a valuable resource for infopreneurship, SCT explains how LIS professionals can gain access to this resource through social relationships and

how these relationships themselves constitute a form of capital that enhances infopreneurial success. The combination of strategic resources (IK) and social capital (relationships with custodians and markets) creates a dual advantage that can sustain IK-based infopreneurial ventures in Zamfara State.

Methodology

This study adopted a qualitative case study design, which is appropriate for investigating complex social phenomena within their natural settings (Yin, 2018). The case study approach was selected because it allows for in-depth exploration of the contextual conditions surrounding indigenous knowledge infopreneurship in Zamfara State, including the social, cultural, economic, and infrastructural factors that shape the possibilities and challenges of this emerging field.

Study Area

Zamfara State, located in northwestern Nigeria, was purposively selected as the study area. The state was created in 1996 from the former Sokoto State and comprises fourteen local government areas with a population of approximately 5.3 million (National Population Commission [NPC] & ICF, 2019). Zamfara is predominantly rural, with over 80 percent of the population engaged in agriculture and artisanal livelihoods. The state is known for its significant deposits of gold and other minerals, which have sustained artisanal mining communities for generations. The cultural landscape is rich in Hausa and Fulani traditions, including extensive knowledge systems in traditional medicine, leatherwork, textile weaving, and agricultural practices. These characteristics make Zamfara an ideal setting for investigating the intersection of indigenous knowledge and infopreneurship.

Population and Sample

The study population comprised three categories of participants: LIS professionals, indigenous knowledge custodians, and practising infopreneurs. A purposive sampling technique was employed to select participants who possessed rich, first-hand knowledge and experience relevant to the research questions (Patton, 2015). The final sample consisted of 28 participants: 15 LIS professionals drawn from public libraries, academic institutions, and government information agencies across Gusau, Anka, and Talata Mafara; 10 indigenous knowledge custodians, including traditional healers, master leatherworkers, goldsmiths, and agricultural knowledge holders; and 3 successful infopreneurs who had demonstrated the viability of information-based businesses in the study area.

Additionally, two focus group discussions were conducted: one with eight final-year LIS students at Federal University Gusau and another with seven final-year LIS students at Zamfara State College of Education, Maru. The inclusion of students was intended to capture the perspectives of aspiring professionals whose expectations and preparedness for infopreneurship would shape the future trajectory of the LIS profession in the state.

Table 1: Demographic Profile of Study Participants

Category	Count	Location	Gender (M/F)	Age Range
LIS Professionals	15	Gusau, Anka, Talata Mafara	9/6	28-55
IK Custodians	10	Gusau, Anka, Talata Mafara	7/3	45-78
Infopreneurs	3	Gusau, Anka	2/1	25-40
FGD Students (FUG)	8	Gusau	5/3	21-32
FGD Students (COE Maru)	7	Maru	4/3	20-29
Total	43	-	27/16	20-78

Source: Field data, 2025

Data Collection

Data were collected through in-depth semi-structured interviews and focus group discussions. Interview guides were developed for each participant category, covering themes such as the nature and commercial potential of indigenous knowledge in Zamfara, existing and potential infopreneurial models, the role of LIS professionals in IK documentation and commercialization, and the barriers and enablers of IK infopreneurship. All interviews were conducted in the language preferred by the participant, which in most cases was Hausa, and were subsequently translated into English for analysis. Focus group discussions were facilitated using a structured protocol that encouraged open dialogue and the exploration of shared and divergent perspectives. Each interview lasted between 45 and 90 minutes, while focus group discussions ranged from 60 to 120 minutes.

Data Analysis

Data analysis followed the thematic analysis approach outlined by Braun and Clarke (2006). Interview and focus group transcripts were subjected to a systematic process of familiarization, coding, theme development, and refinement. Initial codes were generated inductively from the data and then organized into broader themes that captured the key patterns and relationships relevant to the research questions. The analysis was conducted manually to maintain close engagement with the data, and themes were validated through member checking with selected participants and peer debriefing with colleagues in the LIS field. Ethical approval was obtained from the Research Ethics Committee of the Federal College of Education Technical, Gusau, and informed consent was secured from all participants prior to data collection.

Findings and Discussion

The findings of this study are organized and discussed under four thematic areas corresponding to the research questions: types of indigenous knowledge with commercial potential, infopreneurial models for packaging and monetizing IK, the roles of LIS professionals as IK brokers and curators, and barriers to IK infopreneurship in Zamfara State.

Types of Indigenous Knowledge with Commercial Potential in Zamfara State

The study identified four major categories of indigenous knowledge with significant commercial potential in Zamfara State: traditional agricultural knowledge, artisanal gold processing techniques, leatherwork and tanning, and medicinal plant knowledge. Each of these domains represents a substantial body of tacit and codified knowledge that, with appropriate packaging and marketing, could generate considerable economic value.

Traditional agricultural knowledge emerged as the most widespread and commercially promising category. Participants described sophisticated farming calendar systems based on astronomical observations, phenological indicators, and ecological cues that determine planting and harvesting schedules. One IK custodian in Talata Mafara explained, "Our grandfathers could predict the onset of rains by observing the behaviour of certain birds and insects, and the flowering of particular trees. This knowledge helped farmers prepare their fields at the right time." Similarly, traditional pest management techniques involving the use of neem extracts and other botanical preparations were widely practised and had demonstrable efficacy. The commercial potential of this knowledge lies in its packaging as decision-support tools for farmers, digital agricultural advisory content, and educational materials for agricultural extension services.

Artisanal gold processing techniques constitute another significant IK domain. The goldfields of Anka and Maru have been worked for centuries using techniques that include alluvial extraction, gravity separation, and smelting. While these methods are widely known within mining communities, the systematic documentation and standardization of these processes for training and commercial purposes remains limited. Participants noted that there is growing interest from mining cooperatives and international organizations in understanding and improving artisanal mining practices, creating a market for well-documented, accessible content on traditional gold processing methods.

Leatherwork and tanning represent a third domain of commercial potential. The tanneries of Gusau have historically produced high-quality leather goods that were traded across the Sahel, reaching markets as far as North Africa. The knowledge of vegetable tanning, using locally available materials such as acacia pods and pomegranate rinds, produces leather that is valued for its durability and aesthetic qualities. However, this knowledge is declining as synthetic tanning methods replace traditional ones. Infopreneurial products that document and showcase these techniques, including video tutorials, product catalogues, and heritage documentation, could serve both commercial and preservation purposes.

Medicinal plant knowledge, held primarily by traditional healers known as "magungunan gargajiya," encompasses the identification, cultivation, preparation, and administration of herbal remedies for a wide range of ailments. Participants identified over forty plant species used in traditional medicine in Zamfara State, many of which have been validated by pharmacological research (Sofowora, 2008). The commercial potential of this knowledge is substantial, particularly given the growing global demand for natural health products and the expanding market for traditional medicine in Nigeria, which the World Health Organization (2013) estimated to be worth over $1 billion annually. Digital content on traditional medicine, prepared with appropriate scientific validation and safety warnings, represents a viable infopreneurial product category.

Table 2: Indigenous Knowledge Types with Commercial Potential in Zamfara State

IK Domain	Specific Knowledge Assets	Current Status	Commercial Potential	No. of Custodians Identified
Traditional Agriculture	Farming calendars, rain prediction, botanical pest control, crop rotation, seed preservation	Oral, undocumented	Very High	4
Artisanal Gold Processing	Alluvial extraction, gravity separation, smelting, mercury-free techniques	Partially documented by NGOs	High	2
Leatherwork & Tanning	Vegetable tanning (acacia pods, pomegranate rinds), embroidery, dyeing	Declining practice	Moderate-High	2
Medicinal Plants	Over 40 plant species for malaria, GI infections, wound care, maternal health	Oral, proprietary	Very High	2

Source: Field data, 2025

Infopreneurial Models for Packaging and Monetizing Indigenous Knowledge

The study identified several viable models for packaging and monetizing indigenous knowledge through infopreneurial ventures. These models vary in their technological requirements, target audiences, and revenue mechanisms, offering LIS professionals a range of options depending on their resources and expertise.

Digital Archives and Databases

The creation of digital archives and databases of indigenous knowledge was the most frequently cited infopreneurial model among LIS professional participants. This model leverages the core competencies of LIS professionals in information organization, metadata creation, and digital preservation. Digital archives can be structured as subscription-based databases targeting researchers, development organizations, and government agencies that require systematic access to indigenous knowledge. One LIS professional participant noted, "If we could create a well-organized digital database of traditional agricultural practices in Zamfara, agricultural research institutes and extension services would subscribe to it." Revenue can be generated through subscription fees, licensing arrangements, and pay-per-access models.

Documentary and Multimedia Content

Documentary production and multimedia content creation represent a second infopreneurial model with significant market potential. Video documentaries on artisanal gold processing, leatherwork, and traditional medicine can serve educational, commercial, and heritage preservation purposes

simultaneously. Participants emphasized the particular appeal of Hausa-language audio-visual content, which commands large audiences on platforms such as YouTube, where Hausa-language channels regularly attract millions of views. One of the infopreneur participants reported earning substantial revenue from a YouTube channel dedicated to traditional farming techniques, stating, "I started by filming my grandfather explaining how to predict rain. Within six months, the video had over 100,000 views, and I began earning from YouTube advertising revenue." Revenue models include advertising revenue, sponsored content, and institutional licensing for educational use.

E-Books and Print-on-Demand Publications

The development of e-books and print-on-demand publications based on indigenous knowledge represents a third viable model. This model capitalizes on the growing demand for local-language educational content and the accessibility of self-publishing platforms. LIS professionals can author, edit, or curate content on topics such as traditional farming methods, herbal remedies, and craft techniques for distribution through digital platforms such as Amazon Kindle, Okadabooks (a Nigerian e-publishing platform), and local printing services. The relatively low production costs of digital publishing make this model particularly accessible for professionals with limited capital. Participants in the student focus groups expressed enthusiasm for this model, with several indicating that they would consider publishing IK-based content upon graduation.

Community Radio and Audio Content

Community radio programming based on indigenous knowledge emerged as a fourth infopreneurial model, particularly relevant to Zamfara State where radio remains the most widely accessed medium. The National Broadcasting Commission (2022) reports that radio reaches over 80 percent of the population in Northwestern Nigeria, making it an effective channel for disseminating indigenous knowledge content. LIS professionals can develop radio programmes that feature IK custodians discussing traditional practices, thereby creating revenue through sponsorship, advertising, and content syndication. Audio content can also be distributed as podcasts, extending the reach of IK programming to younger, digitally connected audiences. This model requires relatively modest technological infrastructure, making it accessible even in resource-constrained settings.

Table 3: Infopreneurial Models for IK Monetization in Zamfara State

Model	Description	Target Audience	Revenue Mechanism	Tech Requirement	Viability Score*
Digital Archives & Databases	Subscription-based IK databases with metadata and classification	Researchers, agencies, NGOs	Subscriptions, licensing	High	4.2/5
Documentary & Multimedia	Video documentaries and audio-visual content in Hausa	General public, diaspora	Ad revenue, sponsorship	Moderate-High	4.5/5
E-Books & Print-on-Demand	Self-published IK guides, manuals, and heritage books	Farmers, students, tourists	Sales, royalties	Low-Moderate	3.8/5
Community Radio & Podcasts	IK radio programmes and podcast series	Rural communities, youth	Sponsorship, advertising	Low	4.0/5

Source: Field data, 2025

*Viability Score is based on participant assessments of market demand, startup cost feasibility, and sustainability potential, averaged across all respondent categories.

Roles of LIS Professionals as IK Brokers and Curators

The study revealed that LIS professionals can play multiple roles as brokers and curators of indigenous knowledge for infopreneurial purposes. These roles extend well beyond traditional library functions and require competencies in community engagement, digital content creation, intellectual property management, and business strategy.

The first and most fundamental role is that of IK documentalist. LIS professionals are uniquely positioned to systematically document indigenous knowledge using established information management methodologies. This includes conducting oral history interviews, creating metadata schemas for IK resources, and developing classification systems that respect the cultural contexts of indigenous knowledge. Participants emphasized that documentation is the prerequisite for all other infopreneurial activities, as it transforms tacit knowledge into explicit, shareable, and marketable information products. As one LIS professional stated, "We cannot sell what we have not documented. The first step is to go into the communities and record this knowledge before it disappears."

The second role is that of digital content creator and curator. Once documented, indigenous knowledge must be packaged into formats that meet specific market demands. This requires LIS professionals to develop competencies in digital storytelling, multimedia production, and content management. Several participants noted that the ability to create engaging, culturally sensitive digital content is the key differentiator between successful and unsuccessful IK infopreneurs. This

role also involves curating content to ensure accuracy, cultural appropriateness, and compliance with intellectual property considerations.

The third role is that of intellectual property advocate and advisor. Indigenous knowledge exists in a complex and often ambiguous legal space where conventional intellectual property frameworks are inadequate. LIS professionals can serve as advocates for the intellectual property rights of IK custodians and communities, helping to negotiate fair benefit-sharing agreements and ensuring that commercialization does not result in exploitation or cultural appropriation. Participants highlighted the need for LIS professionals to understand frameworks such as the Nagoya Protocol on Access and Benefit-Sharing and the Swakopmund Protocol on the Protection of Traditional Knowledge, which provide legal mechanisms for protecting indigenous knowledge (Oguamanam, 2006).

The fourth role is that of business intermediary, connecting IK custodians with market opportunities, technology platforms, and distribution channels. This bridging function draws on the social capital that LIS professionals build through their community engagement and professional networks. Successful infopreneur participants emphasized that their businesses depended on strong relationships with both knowledge holders and market actors, and that LIS professionals were well-positioned to facilitate these connections.

Barriers to IK Infopreneurship in Zamfara State

Despite the considerable potential of IK-based infopreneurship, the study identified several significant barriers that must be addressed for this potential to be realized. These barriers are socio-cultural, policy-related, infrastructural, and professional in nature.

Socio-cultural barriers include the reluctance of IK custodians to share knowledge with individuals outside their communities or lineage groups. Many participants reported that traditional healers and master craftsmen viewed their knowledge as a form of cultural capital that should not be shared freely or commercialized without appropriate permissions and benefit-sharing arrangements. One IK custodian stated, "This knowledge was given to us by our ancestors. We cannot just give it away to anyone who asks. There are rules and protocols that must be followed." This cultural protectiveness, while legitimate and important, creates a significant access barrier for LIS professionals seeking to document and commercialize IK. Building the trust and social capital necessary to overcome this barrier requires sustained community engagement and a demonstrated commitment to equitable benefit-sharing.

Policy barriers include the absence of a state-level indigenous knowledge policy in Zamfara State and the inadequacy of national intellectual property frameworks for protecting community knowledge. Nigeria's Copyright Act and patent legislation do not adequately address the collective and intergenerational nature of indigenous knowledge, leaving IK custodians without effective legal protections against misappropriation. The lack of a clear policy framework also creates uncertainty for LIS professionals regarding the ethical and legal boundaries of IK commercialization. Participants called for the development of state-level IK policies that recognize community ownership of indigenous knowledge, establish protocols for documentation and commercialization, and provide institutional support for IK-based enterprises.

Infrastructural barriers are particularly severe in Zamfara State, where limited internet connectivity, unreliable electricity supply, and inadequate digital infrastructure constrain the development of technology-intensive infopreneurial ventures. While mobile phone penetration is

relatively high, broadband internet access remains limited, especially in rural areas where most IK custodians reside. Participants noted that the lack of reliable electricity makes it difficult to maintain digital archives and produce multimedia content. These infrastructural constraints necessitate creative approaches, such as offline-first content strategies and solar-powered computing solutions, to enable IK infopreneurship in resource-constrained settings.

Professional barriers include the inadequate preparation of LIS professionals for IK documentation and infopreneurship. Current LIS curricula in Nigerian institutions devote minimal attention to indigenous knowledge management, digital content creation, intellectual property law, and entrepreneurial skills. Participants reported that their training had focused almost exclusively on conventional library functions, leaving them ill-equipped for the challenges of IK infopreneurship. Student participants expressed frustration at the gap between their training and the professional realities they would face. As one student noted, "We are being trained for jobs that may not exist. We need skills that will help us create our own opportunities." This curriculum gap represents perhaps the most fundamental barrier, as it limits the supply of professionals capable of driving IK infopreneurship forward.

Table 4: Barriers to IK Infopreneurship in Zamfara State

Barrier Category	Specific Barriers Identified	Affected Stakeholder(s)	Severity*	Frequency of Mention
Socio-Cultural	Reluctance to share IK; cultural protocols restrict access; intergenerational disconnect	IK Custodians, LIS Professionals	High	22/28
Policy & Legal	No state IK policy; inadequate IP protections; unclear commercialization protocols	LIS Professionals, Infopreneurs	High	19/28
Infrastructural	Limited broadband; unreliable electricity; inadequate digital tools in rural areas	All categories	Very High	25/28
Professional / Capacity	Curriculum gaps in IK and entrepreneurship; limited digital skills training	LIS Professionals, Students	High	24/28
Financial	Lack of startup capital; no IK-specific funding mechanisms	LIS Professionals, Infopreneurs	Moderate-High	18/28

Source: Field data, 2025

*Severity rated by participants on a scale of Low, Moderate, Moderate-High, High, and Very High based on perceived impact on IK infopreneurship.

Proposed Framework: The Zamfara IK Infopreneurship Framework

Based on the findings of this study, a framework termed the "Zamfara IK Infopreneurship Framework" (ZIKIF) is proposed to guide the integration of indigenous knowledge infopreneurship into LIS practice. The framework is designed as a multi-stakeholder, multi-level model that links libraries, IK custodians, digital platforms, and market opportunities in a coordinated ecosystem.

The ZIKIF operates across three levels. At the community level, LIS professionals engage with IK custodians through culturally appropriate protocols, building the trust and social capital necessary for knowledge access. This level involves community entry, participatory needs assessment, oral history documentation, and the negotiation of benefit-sharing agreements. The principle of Free, Prior, and Informed Consent (FPIC), as articulated in the United Nations Declaration on the Rights of Indigenous Peoples (2007), serves as the ethical foundation for community-level engagement.

At the institutional level, libraries and information centres serve as IK documentation hubs, providing the infrastructure and professional expertise for systematic knowledge capture, organization, and preservation. Public libraries in Gusau, Anka, and Talata Mafara are proposed as pilot sites for IK documentation units, which would be staffed by LIS professionals with specialized training in IK management. These units would be responsible for creating and maintaining digital IK archives, developing metadata schemas for IK resources, and curating content for various infopreneurial products. The institutional level also encompasses LIS training institutions, which would incorporate IK documentation and infopreneurship modules into their curricula.

At the market level, the framework connects documented IK with commercial opportunities through digital platforms, distribution channels, and revenue models. Infopreneurial products developed from IK resources are distributed through appropriate channels, including online platforms (YouTube, Okadabooks, podcast directories), community radio stations, and institutional subscriptions. Revenue generated from IK products is shared among stakeholders according to pre-negotiated benefit-sharing agreements, ensuring that IK custodians and their communities receive fair compensation for their knowledge contributions.

The ZIKIF is supported by three enabling pillars: policy and legal frameworks, technology infrastructure, and capacity building. The policy pillar calls for the development of a Zamfara State Indigenous Knowledge Policy that recognizes community ownership of IK, establishes documentation and commercialization protocols, and provides institutional support for IK-based enterprises. The technology pillar advocates for investment in digital infrastructure, including internet connectivity, solar-powered computing facilities, and mobile-friendly content platforms. The capacity-building pillar proposes the integration of IK management and infopreneurship modules into LIS curricula, the establishment of IK incubation hubs within public libraries, and the provision of continuing professional development opportunities for practising LIS professionals.

Table 5: Summary of the Zamfara IK Infopreneurship Framework (ZIKIF)

Level	Key Components	Primary Actors	Outputs	Enabling Pillars
Community Level	Community entry; FPIC; participatory documentation; benefit-sharing negotiation	IK Custodians, LIS Professionals	Documented IK resources; trust relationships; consent agreements	Policy & Legal
Institutional Level	IK documentation hubs in public libraries; digital archives; metadata schemas; curriculum integration	LIS Professionals, Library Institutions, Training Schools	Digital IK archives; curated content; trained professionals	Capacity Building
Market Level	Content distribution (YouTube, Okadabooks, podcasts, radio); subscription databases; product marketing	Infopreneurs, LIS Professionals, Digital Platforms	Revenue from IK products; equitable benefit distribution	Technology Infrastructure

Source: Field data, 2025

Conclusion and Recommendations

Conclusion

This study has demonstrated that the integration of indigenous knowledge systems into infopreneurial practice represents a viable and necessary pathway for repositioning LIS professionals for sustainable economic empowerment in Zamfara State. The findings reveal that Zamfara possesses significant indigenous knowledge assets in agriculture, gold processing, leatherwork, and traditional medicine that remain largely undocumented, under-commercialized, and vulnerable to loss. These knowledge assets, when systematically documented, packaged, and marketed through infopreneurial ventures, can generate substantial economic value for LIS professionals while contributing to the preservation of cultural heritage and the diversification of the state's economy beyond mining.

The study has also highlighted the critical role of LIS professionals as knowledge brokers, curators, and intermediaries in the IK infopreneurship ecosystem. The unique competencies of LIS professionals in information organization, digital content management, and community engagement position them as ideal agents for bridging the gap between indigenous knowledge custodians and market opportunities. However, the realization of this potential is contingent upon addressing the significant barriers identified in this study, including socio-cultural resistance to knowledge sharing, policy and legal gaps, infrastructural constraints, and the inadequate preparation of LIS professionals for IK documentation and infopreneurship.

The proposed Zamfara IK Infopreneurship Framework provides a structured approach to addressing these barriers by creating a multi-stakeholder ecosystem that links community-level knowledge access, institutional-level documentation and curation, and market-level commercialization. The framework's emphasis on equitable benefit-sharing, culturally appropriate engagement, and capacity building ensures that IK infopreneurship serves the interests of all stakeholders, particularly the indigenous communities whose knowledge constitutes the foundation of these ventures.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are offered. First, LIS training institutions in Nigeria should undertake comprehensive curriculum reform to incorporate modules on indigenous knowledge documentation, digital storytelling, intellectual property rights for community knowledge, and entrepreneurial skills development. This reform should be informed by consultation with IK custodians, practising infopreneurs, and international best practices in IK management. The integration of these modules should not be superficial or elective but should constitute a core component of LIS education, reflecting the professional imperative of IK preservation and the economic imperative of self-employment.

Second, the Zamfara State Government should develop and implement a state-level indigenous knowledge policy that recognizes community ownership of indigenous knowledge, establishes clear protocols for documentation and commercialization, provides legal protections against misappropriation, and creates institutional mechanisms for supporting IK-based enterprises. This policy should be developed through a participatory process that involves IK custodians, LIS professionals, legal experts, and community representatives to ensure that it reflects the values and priorities of indigenous communities.

Third, public libraries in Zamfara State should be repositioned as IK documentation and incubation hubs, equipped with the technology infrastructure and professional expertise necessary for systematic IK capture and infopreneurial product development. Pilot IK documentation units should be established in public libraries in Gusau, Anka, and Talata Mafara, with a mandate to document, digitize, and curate indigenous knowledge resources in collaboration with local communities. These units should also provide incubation support, including training, mentorship, and access to digital tools, for aspiring IK infopreneurs.

Fourth, investment in digital infrastructure, particularly broadband internet connectivity and reliable electricity supply in semi-urban and rural areas of Zamfara State, should be prioritized to enable technology-intensive IK infopreneurial ventures. In the interim, creative solutions such as offline-first content strategies, mobile-optimized platforms, and solar-powered computing facilities should be adopted to work around existing infrastructural constraints.

Fifth, professional associations such as the Nigerian Library Association and the International Federation of Library Associations and Institutions should develop guidelines and best practice standards for IK documentation and commercialization by LIS professionals. These guidelines should address ethical considerations, benefit-sharing principles, intellectual property protections, and quality assurance standards for IK-based information products. Such professional standards would provide a framework for responsible IK infopreneurship and enhance the credibility and marketability of LIS-developed IK products.

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