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ISAR Journal of Multidisciplinary Research and Studies
Abbriviate Tittle- ISAR J Mul Res Stud
ISSN *(Online)*- 2583-9705
https://isarpublisher.com/journal/isarjmrs

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A CONCEPTUAL STUDY ON INDIGENOUS KNOWLEDGE MANAGEMENT

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Article History
Received: 09.08.2023
Accepted: 28.08.2023
Published: 16.09.2023

Abstract: *The information that local residents have accumulated over time and are still developing is called indigenous knowledge. It is based on experience, has been used frequently over many years, is dynamic and ever-changing, and has been adapted to the culture of the area. People are intimately familiar with a variety of facets of their surroundings and daily activities. Over the years, people have developed the skills necessary to produce food and survive in the wild. They are aware of which plants are harmful, which plants can be used to treat illnesses in people, animals, and plants, and when to sow and weed. They are also aware of the best crops to plant. Indigenous knowledge has served as the cornerstone for a variety of endeavours that support a society and its environment in many parts of the world, including agriculture, food preparation and conservation, health care, education, and more. Usually, it is passed down from one generation to the next through cultural customs and oral tradition. This paper thus discusses. benefits of Indigenous knowledge for local people, methods for recording indigenous knowledge, concerns about documenting indigenous knowledge systems, the steps that go into Indigenous Knowledge Management (IKM), the challenges that come with it, the ways that indigenous knowledge (IK) can be shared and communicated, and indigenous knowledge strategies.*

Keywords: *Indigenous Knowledge Management, Community, Intellectual Property Rights, indigenous knowledge approaches, culture and cultural rituals*.

INTRODUCTION

Indigenous knowledge encompasses all aspects of a particular way of life, including spiritual, economic, political, and social facets. Knowledge of indigenous peoples is one component of a dynamic system that is influenced by kinship, local politics, and other factors. Through traditional education and adult practice of culture through traditional songs, stories, legends, dreams, village gatherings, and taboos, the majority of indigenous peoples transmit particular human aspects of their traditional knowledge from generation to generation. It can occasionally be retained in artifacts passed down from mother to daughter or father to son. Information is transmitted directly from one person to another in almost all of these systems. Peweward (2002) explained that indigenous learning styles include imitation, collaboration, storytelling, and observation, which is in line with Peweward's viewpoint. According to Bates et al. (2009), there is a serious risk that traditional methods of transmitting indigenous knowledge are leading to the loss of valuable knowledge regarding sustainable living practices.

Benefits of Indigenous Knowledge for Local People

It is crucial that locals gain from the documentation of their expertise. Beyond advancing project objectives, Locals can benefit from independent knowledge documentation and storage in the following ways:

a. Elderly knowledge can be preserved for future generations, preventing it from being lost.
b. Indigenous knowledge can be presented in a way that puts it on an equal footing with the international knowledge system that younger generations are exposed to on radio, television, and in state-run schools.
c. In schools and other settings, Indigenous knowledge is frequently taught to younger generations.
d. A community's least knowledgeable members can gain access to Indigenous Knowledge.
e. Study or personal experience can be used to improve Indigenous Knowledge, which can then be shared. Issues and solutions can be identified by analysing Indigenous Knowledge, which can lead to additional projects that can assist the community.

Indigenous Knowledge must first be documented before it can be used, and researchers must be mindful of the ethical and methodological concerns involved in conducting research in local communities. For instance, participatory rural appraisal (PRA) techniques are widely recognized as a successful strategy for integrating locals in the study process. In this method, PRA

researchers use strategies that require little assistance from outsiders to let locals record their own knowledge.

Researchers need to be mindful of the problem of knowledge's intellectual property rights. The local population is worried that information is being "taken" and used without their consent or a chance to gain financially from the creation of associated commercial products. As a result, a strategy for safeguarding research-generated knowledge must be taken into account.

Methods for recording Indigenous Knowledge

IK researchers employ a variety of techniques to make it possible for locals to meaningfully share their expertise. The resources that researchers can utilize to gather IK on the ground are discussed in the paragraph that follows. Prior to or during the recording of indigenous knowledge, the planning process should be identified. The stages of planning are:

- Background investigation: choose the people and/or the place to plan with; examine secondary sources of data.
- Get to know the locals well and establish trust-based relationships.
- Deciding on the appropriate course of action after jointly identifying opportunities and difficulties.
- Create a draft project proposal, defining the process, goals, and objectives.
- Meet with community members and leaders to fully explain the proposed research plans and secure approval for the project. A village assembly is a sensible strategy.
- Rework the proposal in light of community comments.
- Pick your strategies carefully and get ready for each one.
- Locals should be trained as facilitators to conduct the field research.
- Field data collecting and analysis with these locals.
- Activities that are jointly evaluated and replanned.

Types of Indigenous Knowledge:

Tavana (2002) mentions indigenous knowledge can be divided into two groups: indigenous knowledge, both explicit and implicit. On the other hand, very little research has been done on specific IKs. These are discussed in greater depth below:

Explicit Indigenous Knowledge:

Wyatt argues (2001, p.g.6): Facts, rules, relationships, and regulations that can be accurately defined in written or electronic form and communicated without discussion constitute explicit knowledge. The following definition of explicit knowledge is added by Smith (2001): academic knowledge or "know-what" that is described in formal language, printed or electronic media, and frequently based on established work processes employing a people-to-documents approach

Traditional knowledge that is straightforward to articulate, express, transmit, and record is referred to as explicit indigenous knowledge. In accordance with Tavana (2002), the names of reef fish, the mating seasons of birds, and instructions on how to use particular plants as medicines are examples of explicit Samoan IK. Because of its inherent simplicity, explicit knowledge is simple to preserve, share, and transmit. Due to the decline in explicit Indigenous Knowledge (IK) and indigenous communication (Mehta, Alter, Semali, & Maretzki, 2013) among indigenous people, the need to share, store, and preserve this knowledge is greater than ever. (Kama and Tikai, 2010).

Tacit Indigenous Knowledge:

"Practical, action-oriented information" or "know-how" based on practice, acquired by personal experience, rarely communicated openly, and frequently resembling intuition are terms used to describe tactic knowledge as opposed to explicit knowledge (Smith, 2001, p.g.314) Because it involves doing something without thinking about it, like riding a bicycle, it is frequently challenging to verbally communicate tacit knowledge. People struggle to get tactic knowledge out of their heads as a result. Because it is created from mental models, values, ideas, perceptions, insights, experiences, and assumptions, it rarely appears in books, manuals, databases, or files (Smith, 2001).

Indigenous knowledge is deemed tacit if it is difficult for outsiders to understand or communicate (Tavana, 2002). The majority of tacit Indigenous Knowledge is derived from a person's feelings, experiences, insights, observations, and perceptions. The Samoan people's respect for their elders and the procedure for reaching a unanimous decision in a village fono are two examples of tacit IK. But those who study sustainable development have noticed that the following IK categories are particularly interesting:

i. resources management expertise and tools,
ii. the laws, practices, and methods of pastoralism,
iii. collecting wild foods, agroforestry, water management, and agriculture.
iv. classification systems for the weather, soils, plants, and animals
v. empirical data on the uses of flora, fauna, and inanimate resources
vi. the local group's worldview, or how they see their relationship to the natural world.

According to the United Nations Environment Programme, IK can be generically categorized depending on its nature and holders as follows:

Community Indigenous Knowledge:

It implies knowledge that is only known by a select few people rather than everyone, such as tribal knowledge. Only the community members typically receive verbal transmission of this knowledge.

Publicly known Indigenous Knowledge:

This refers to knowledge that individuals have in common and utilize, with or without record. Examples of this class include the usage of neem, mahogany, and other trees for medicine.

Individual Indigenous Knowledge:

This can only be accessed by an individual or a specific member of the family. This information is typically conveyed orally by the elder to his successor. Indigenous knowledge that has been thoroughly documented and made public is referred to as "documented indigenous knowledge."

Indigenous Vocal Knowledge:

It includes information that has not been written down but has been spoken about through the generations.

Sacred Indigenous Knowledge:

Both sacred material and sacred intangible rights are included in this. Sacred tangible rights alludes to ownership of material possessions that are either a part of something sacred or are utilized in connection with it. This type of thing includes sacred places in the community. In addition, community-owned traditional sacred dance costumes, choreography, and other items are protected by sacred intangible rights, which include intellectual property rights and other intangible rights.

Indigenous Secular Knowledge:

Refers to the ownership rights of communities to arts and crafts. It includes things that can be profitably exploited in this context, such as family crests worn on apparel, masks, dance screens, etc. during ceremonial occasions. It also covers the rights to images, dance routines, musical compositions, and audiovisual works utilized in secular events and ceremonies.

How to Protect the Indigenous Knowledge

Bring Attention to

It is necessary to raise the community's awareness of the significance of its indigenous knowledge. Music, art, puppetry, storytelling, theatre, films, and other conventional or contemporary forms of communication can be used to document and disseminate IK success stories. Village libraries can do a lot to help with this by organizing events that will bring the locals together and allow them to discuss IK practices. There should be awareness raising campaigns about IK and problems with intellectual property rights. It is important to involve all parties, including local residents, IK practitioners, policymakers, librarians, and documentarians. To make sharing IK easier, a free and welcoming environment should be established.

Documentation

Libraries ought to document and record Indigenous Knowledge. Because it is essential to growth, IK must be gathered, organized, and disseminated in the same systematic manner as Western knowledge (Warren et al.). 1993). Community IK databanks or libraries should be established to assist community members in capturing and documenting their IK. It is crucial that local communities record their indigenous knowledge, give it the respect it deserves, and give them the authority to preserve and apply this information. Local content, which is an expression of a community's locally owned and adapted knowledge, will be included in community databanks or libraries.

This recorded IK may then be disseminated by newsletters, books, videos, radio, newspapers, telephones, the Internet, and other conventional or contemporary media such as drama, music, and visual art. It is possible to promote indigenous methods of record keeping. The availability of IK is also crucial. To avoid using IK techniques that could be hazardous to individuals, accuracy of IK should first be verified by an expert. In light of this, indigenous knowledge storage and retrieval systems should be developed.

Electronic libraries

It is also possible to create digital libraries based on IK while improving Indigenous Knowledge documentation. These are renowned for protecting indigenous culture and disseminating pertinent information locally. They allow for more active participation by indigenous people in the preservation and dissemination of their own culture and open up the prospect of flexible and coherent multimedia collections that are completely searchable and browsable in various dimensions. Managing and protecting IK will encourage its application in development initiatives, which will reduce poverty, improve equity, and stop environmental deterioration, resulting in sustainable development and more local involvement in the process. The management of IK resources should heavily include information professionals. Libraries should come up with methods for making IK knowledge and information available by:

- creating inventories and registers for IK databanks while considering the implications for intellectual property;
- Increasing community access to IK through marketing techniques;
- creating collection development policies for IK while considering how the storage media would affect the preservation of the collection;
- creating tools that are standardized for cataloging and indexing Indigenous Knowledge systems;
- Compiling lists of references for Indigenous Knowledge materials.

Determine the Indigenous Knowledge experts.

Additionally, it's important to find indigenous experts. Indigenous experts are individuals of the community with unique abilities or knowledge in one or more subject areas or who are engaged in a vocation (e.g., healers). Decision-makers, inventors, and political opinion leaders who in some way influence management and use of indigenous knowledge in development initiatives are additional relevant individuals to identify. These people's data should be kept in databases for easy access and distribution in the event that their Indigenous Knowledge is needed.

Determining the worth of Indigenous Knowledge

Libraries should establish metrics for evaluating each form of Indigenous Knowledge practice, technology, organizational structure, human resource, etc. in collaboration with development workers. The effectiveness of IK, its value for money, availability, comprehensibility, cultural suitability, impact on various community groups, and environmental soundness, as well as its limitations, as well as whether and how they can be handled, may all be considered. Such standards would make it easier to determine the worth of Indigenous Knowledge and how easily it may be used in development initiatives. Recognizing the context in which IK was produced and where it is applied is necessary to increase the economic value of IK**.** To account for the unique characteristics of IK, standards should be created. Libraries and all stakeholders involved must also determine the norms and parameters by which locals evaluate IK. It may be difficult, but it is important, to find out what features people look for when testing a technology, as well as what people value most in a particular IK, why they chose it, what they think its strengths and weaknesses are, what they believe would happen if the IK were not available, who would be most affected by it, and why. This suggests that it is important to understand how individuals feel about IK. We won't be able to recognize and better comprehend the worth and utility of IK in development until we mix both insiders' and outsiders' assessments.

Capacity Building

Training IK specialists who will integrate IK in development projects and who are also knowledgeable about IK recording,

storage, distribution, and matching IK to development projects is necessary to establish the necessary capacity. Libraries should train their staff in local settings so that they may become accustomed to the requirements of the community and truly understand how to work with IK there and its significance. Finally, rather than merely observing our information society from a distance, libraries should work to ensure that developing nations actively participate in it. Every effort ought to be made to ensure that IK is recorded, preserved, accessible, and shared in order to guarantee that it is properly implemented in development projects. Libraries can play a significant role in making this happen.

Steps in Indigenous Knowledge Management (IKM)

According to Mabawonku (2002), the key steps in the administration of Indigenous Knowledge are as follows:

i. Gathering

When collecting IK, it is necessary to specify the information that needs to be gathered as well as any potential stumbling blocks. It is necessary to identify the culture and knowledge systems and take taboos into account. It is necessary to identify the resource person (IK holder) and employ medium for documentation. The main player in capturing IK is the resource person or IK holder. Not only must they be knowledgeable, but they must also be regarded as a trustworthy source. This is done to guarantee the authenticity and accuracy of the gathered IK.

It might be beneficial to have many resources, especially if there are conflicting viewpoints, missing key connections, or knowledge that has been corrupted in some way (Mabawonku, 2002). Some IK should be gathered during particular occasions or seasons. For example, since the only time IK from ceremonies may be collected is during the ceremony, so it should be collected then. (Mabawonku, 2002).

ii. **Organizing**

If the IK was captured on video cassette or cassette, the next step is to edit the cassettes and create visuals and graphics. After the recording is complete, the data should be condensed in writing in a different language, like English, on a computer or in a notepad. According to Mabawonku (2002), tapes must be labeled with the subject classification and bibliographic description of the content.

iii. Storage

it is best to store the collected IK in a large, air-conditioned cabinets in a suitable storage space. According to Mabawonku (2002), additional audio and/or video cassette copies of the IK ought to be made available to other departments so that they can borrow them in the event of a need.

iv. Dissemination

IK management greatly depends on its dissemination. This, according to Mabawonku (2002), is due to the wastefulness of knowledge that is acquired but not shared with others. The first stages in IK dissemination should be giving the gathered IK to the relevant indigenous groups (IK holders) and giving other people hand copies of their recordings. It is necessary to compile and make available abstracts and indexes to raise awareness of the gathered IK (Mabawonku, 2002).

Challenges Associated with Indigenous Knowledge Management (IKM)

One of the key problems with indigenous knowledge management, according to Barnhardt and Kawagley (2005), is the "lack of indigenous personnel with advanced indigenous competence and experience in western research to balance the indigenous knowledge business." Indigenous knowledge is classified as tacit knowledge and is primarily stored in human brains. As a result, it's hard to record, transfer, and spread. Additionally, Native Americans are reluctant to share their knowledge. There are not enough effective intellectual property protections. Additionally, traditional knowledge is frequently dismissed as anti-science or pseudo-science.

a. Accessibility of Information

According to Afolabi (2003), "it is evident in all aspects of human endeavors that it cannot be achieved without it." Information is therefore a prerequisite for progress in social, economic, industrial, political, and technological fields. African rural residents "are increasingly appreciating the usefulness of relevant information to their development, like their urban counterparts," according to Sturges and Neil (1990). African rural residents increasingly recognise the value of pertinent information for their growth, much like their metropolitan counterparts. The world is entering “a time when information and human mental innovation are replacing physical resources as the source of wealth and power,” states Opeke (2000). "The world has entered a period."

b. Intellectual property

According to BusinessDictionary.com, ownership is the "ultimate and exclusive right to enjoy, occupy, hold, rent, sell, use, give away, or even destroy an item of property, bestowed by a legitimate claim or title, and subject to certain limits." In other words, determining ownership entails identifying who is responsible for a certain piece of property. "A community's relationship to its knowledge or information," according to Schnarch (2004), is the definition of ownership. A community or a group "owns information collectively," just as an individual "owns their personal information." he claims, quoting the principle of ownership. Therefore, one way to assert ownership is through the management or accumulation of knowledge through a body that is answerable to the group (Schnarch, 2004).

c. Motivating Indigenous

People The right of Native Americans to self-determination must be protected. Another way of putting it is that people are free to choose their political affiliation and to advance their own personal, social, and cultural interests. In order for the native population to engage in hunting, fishing, and other activities, environmental security is required. The adage "health is riches" is very common. The native population must be ensured to be in great health. All community stakeholders must have equal access to the pertinent local knowledge. Once indigenous people have ownership protection over their knowledge and have received fair compensation for the knowledge that has been released, they will continue to take initiative.

Sources of Indigenous Knowledge were identified by Different Scholars

According to Akullo et al. (2007), the principal sources of Indigenous Knowledge include the following:

i. Contact with senior citizens, parents, grandparents, family members, and friends.

ii. visits to places where one becomes interested in a technology after seeing it in action.

iii. coming to the country from other regions of the country are people of different ethnicities.

iv. radio programmes, Extension personnel, personal discoveries,

v. in addition to these sources, IK is also preserved in people's memories and behaviours. Songs, proverbs, dances, stories, myths, local laws, languages, taxonomy, agricultural practices, tools, materials, plant and animal species, and breeds are just a few examples of how it is portrayed. It is also communicated by taxonomies, cultural values, beliefs, and rituals (Akullo et al., 2007).

Channels of Indigenous Knowledge (IK) communication/dissemination and approaches of Indigenous Knowledge

Exchange of Indigenous Knowledge

Additionally, since IK is frequently implicit or ingrained in actions and experiences, it is most frequently demonstrated and discussed in person, such as between a master and an apprentice, a parent and a kid, a neighbour and a neighbour, or a priest and a parish. It is difficult to capture tacit information and to transfer and disseminate it. When both providers and recipients understand the same cultural concepts and speak the same language, it is significantly more difficult to transfer tacit information across cultures than it is to exchange information within a society. It is helpful to divide the exchange process down into its numerous components to make it easier to understand.

Indigenous knowledge exchange is a procedure that consists mostly of six steps:

1. Understanding and recognizing knowledge as it is provided in a technology or a technique for addressing problems. However, sometimes it can be difficult to identify IK. Some IK, for instance, might be concealed by a combination of technology or cultural norms, making them invisible to an outsider at first glance. Others might have ingrained themselves so deeply into a community's way of life that it is challenging to separate them apart, even the communities or individuals who engage in them. In certain situations, it can be necessary to detect IK through technological and sociological assessments of specific activities.
2. Verify that IK is important and relevant (to solving one or more specific problems), that it is not accidental, that it works, that it is effective, and that it can be transferred. At the original location of the IK application, users should ideally conduct or participate in the validation. Transferring IK between communities can occasionally be challenging. This is due to the fact that most IK is retained in tacit form, making it possible—in some cases—that the only means to transmit it are through direct practice and apprenticeship. The effectiveness of a method under the same circumstances elsewhere may not necessarily be shown at the point of inception. The cultural, political, and economic context as well as the recipients' level of technical skill are crucial for the long-term adoption and adaption of foreign technology, based on the knowledge gained through the previous transfers of contemporary and suitable technologies. As a result, it's crucial to run pilot projects with the intended user to test the new technology. However, subject to confirmation by follow-up pilots, occasionally, a general evaluation of transferability may be possible.
3. Due to the tacit character of indigenous knowledge, recording and documenting presents yet another significant problem. The intended use of the material heavily influences the extent of recording and documentation. Academics, however, would prefer to understand and capture a more comprehensive view of knowledge and all of its ramifications due to this, practitioners may be content with knowing "How did they accomplish that?" as a response. In the recording, Drawings, recorded narration, audiovisual equipment, or other types of information that can be documented may be required. In the event that the tacit nature of a practice precludes such documentation, information about places, people, or organizations that can show or teach a skill may be utilised as a reference to the source of IK.
4. The following typical stage in the procedure is storage in retrievable repositories. As part of this, information is categorized, indexed, linked to other sources of information, made available, and conserved, maintained, and preserved for future retrieval. It is necessary to create meta-information to improve retrieval's usability. This might involve applications, directories of specialists, or abstracts that are saved and indexed online. However, storage shouldn't be limited to just text files. Other retrievable information stores including tapes, films, databases, and IK practitioners should also be included.
5. Transferring Indigenous Knowledge involves more than just explaining it to the intended recipients. Testing the information in the new setting is a crucial part of the transfer process. It is important to consider the recipients' requirements while determining the technical and economic viability, social and environmental impact, and other factors. Researchers, community groups, civil society organizations, or individuals may be enlisted to assist in testing, rejecting, or embracing and adapting the new knowledge. These moves may be aided by donor organizations and the government. Demonstrations, apprenticeships, or rigorous practical instruction may be included in the transfer. Only direct transmission between practitioners is possible for some regional techniques.

   The thorough selection of partners and potential recipients throughout a participatory process is essential for a successful transfer. The chance of failure is decreased if the new technology builds on already-existing local expertise.
6. The dissemination of IK to a larger population enhances the knowledge transfer by including a developmental component and has the potential to have a deeper and broader impact. A few examples of dissemination activities include including IK in extension programs, Depending on the subject and setting, public awareness campaigns, commercials, seminars, workshops, the distribution of educational materials, publications, or curricula may be used. Activities for disseminating information may be directed at particular audiences or the entire public. Establishing a favorable political, economic, and legal climate will help the process.

7. Indigenous knowledge exchange is the ideal result of a successful transfer. The process, which may be thought of as one big learning process, involves the community where an IK practice originates, the agent that transmits the practice, and the community that accepts and adapts the practice.

Conclusion

Native American communities' important information and skills are ingrained in their cultures and traditions, and indigenous knowledge management is a crucial process that facilitates their preservation, exchange, and utilisation. Indigenous communities can increase their adaptation and resilience to social, economic, and environmental changes through efficient knowledge management practices. Indigenous knowledge can offer important insights into fields including natural resource management, agriculture, health, and education. It is a crucial source of innovation and sustainable development. The importance of understanding that indigenous knowledge is frequently in danger due to a number of factors, such as globalization, urbanization, and climate change, cannot be overstated.

As a result, it's important to support and encourage community-driven, inclusive, and indigenous knowledge management practices. This entails collaborating with indigenous people to identify and catalogue their knowledge as well as providing them with the instruments and materials they need to organize, disseminate, and use their knowledge to address current issues. Indigenous knowledge management is a crucial strategy for advancing the sustainability and well-being of indigenous communities and advancing the larger social development objectives at the same time.

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