# Exploring the Current Practice of Local Knowledge Management among the Minangkabau Community Leaders in Agam District, Indonesia for Sustainable Development

Elva Rahmah[1,3], Shamila Mohamed Shuhidan[1], Wan Aida Wan Yahaya[2], Mohd Saiful Rahman[4], and Marlini[3]

[1]School of Information Science, College of Computing, Informatics and Mathematics Universiti Teknologi MARA, Selangor Branch, Puncak Perdana Campus, 40150 Shah Alam, Selangor, Malaysia.
[2] College of Creative Arts, Universiti Teknologi MARA, Shah Alam 40450, Selangor, Malaysia.
[3] Faculty of Language and Art, Universitas Negeri Padang, 25131, Padang, Indonesia.
[4] Tuxuri Sdn Bhd, Selangor, Malaysia.

Email: shamila@uitm.edu.my

**Abstract.** Local knowledge is the knowledge found in local communities that consists of a set of experiences that have been accumulated and provides information that shows the local community or local culture's behavioral characteristics. However, studies found that Local knowledge, which has historically been transmitted from generation to generation by word of mouth, is at risk of being lost and the information contained in local knowledge is still not recorded and well managed efficiently. This paper aims to explore the current practice of local knowledge management among the Minangkabau Community leaders in the Agam district, Indonesia for sustainable development focusing on the critical issues, and concrete practices, in local knowledge management. The design is a qualitative analysis based on a detailed case study of the local knowledge management practices in the Agam district, Indonesia with 12 community leaders. The practice of local knowledge management among the Minangkabau Community leaders through three categories, namely input, process, and output local knowledge. Input is special local knowledge from culture and heritage, where knowledge from the contributor consists of tacit and explicit knowledge of the Minangkabau community. The process is the system that emphasizes the complex relationships between knowledge transfer actors and the coexistence of implicit and explicit knowledge transfer mechanisms. The last part of local knowledge management is the output of local knowledge protection.

# 1    Introduction

Local knowledge management refers to the processes and strategies used by local communities to capture, store, share, and utilize knowledge specific to a particular locality or community. This involves identifying, documenting, and leveraging individual knowledge and expertise within a specific geographic area to promote learning, innovation, and development. Current local knowledge management practices include a variety of approaches and tools, which can vary depending on the context and goals of the communities involved. Local wisdom is knowledge contained in local communities which consists of a set of experiences that have been accumulated and provide information that shows the characteristics of the behavior of local people or local culture (Kasi & Widodo, 2022). Local knowledge includes community knowledge, traditional wisdom, and traditional knowledge.

The Minangkabau people are an ethnic group originating from the Minangkabau Highlands in West Sumatra, Indonesia. They are one of the world's largest matrilineal societies, where kinship and inheritance are traced through the female line (Syarief et al., 2020). The Minangkabau people are known for their rich cultural heritage, including their unique customs, traditions, architecture, art, and cuisine. In Minangkabau society, three types of leadership play an important role in their social and cultural structure (Roza, 2020). The three types of leadership are traditional leaders, religious leaders, and community leaders. Traditional leaders have a role in making decisions related to customary issues, resolving disputes, and determining the course of customary events. The position of adat leader is inherited in matrilineal lineage, where leadership is passed down through the mother's line (Fathimah et al., 2018).

Religious leadership is a person in society who knows everything about religious knowledge. Religious leaders have the task of teaching religious education and spreading da'wah according to the Al-Qur'an and Hadith. The duties of the pious clergy are to guide spiritually to take the right path in life in this world leading to the hereafter and to assist in several activities such as weddings.

Community leadership relates to village or village governance. The village is a traditional administrative unit in Minangkabau society which consists of several villages or hamlets. This leader is elected by the community to manage government affairs, security, and justice within the Nagari. They are responsible for maintaining order, resolving conflicts, collecting taxes, and managing natural resources at the village level.

Leadership in Minangkabau society is a combination of customary wisdom, village governance systems, and royal heritage. Traditional leaders are responsible for protecting, nurturing, and teaching Minangkabau customary values and culture to the younger generation and play an important role in preserving oral traditions, customs, and local knowledge (Lamadirisi et al., 2020). Religious leaders have extensive knowledge of Islamic teachings and local traditions, maintain the religious life and spirituality of the community, and strengthen Islamic identity and values in Minangkabau culture. Community leadership in Minangkabau society is an integral

part of social, cultural, and economic life, and plays a role in maintaining and enriching the wealth of local knowledge.

This leadership has an important role in maintaining social stability, maintaining customs and traditions, and regulating governance in Minangkabau society. These three elements become symbols of leadership that give color and influence the development of Minangkabau society. This research studied how does the current practice of local knowledge management among the Minangkabau Community in Agam district, Indonesia for sustainable development.

## 2 Literature Review

This is followed by literature on how local knowledge, local community, local leaders, knowledge management, and Sustainable Development Goals (SDGs).

### 2.1 Local Knowledge

Local knowledge is a collection of facts and relates to the entire system of concepts, beliefs, and perceptions that people hold about the world around them. Local knowledge as the source of the wisdom of thinking and acting is still commonly found in various regions in Indonesia. A community's local knowledge, as an accumulation of collective experiences from generations, must also be kept and cultivated to manage agricultural land or plantations and the environment (Cahyono et al., 2021). Local knowledge is commonly and crucially depicted as different from expert or scientific knowledge, which is typically perceived as codified, explicit, rational, systematized, placeless, non-contextual, and hence transferrable (Setten & Lein, 2019). Despite global societal and economic shifts, much information is incorporated nearly entirely into local knowledge as a manifestation of a population's local identity (De Lucia et al., 2020). Local knowledge has been characterized by several writers as a dynamic and complex body of information, practices, and abilities generated and maintained by towns or communities with histories and shared experiences (Gutiérrez García et al., 2020). It is important to remember that people can participate in various knowledge systems, such as local scientists, who are both scientists and local knowledge keepers. Local knowledge is a type of environmental wisdom that is prevalent in a place or region's public life. So, in terms of specific location and community, local knowledge is a value system conducted by wisely interacting with the environment.

### 2.2 Local Community

Local knowledge covers the indigenous, traditional, and innate knowledge that is associated with local rural people's way of life (Sufo Kankeu et al., 2020). These communities also share ways in the form of stories, songs, folklore, proverbs, dances, myths, and rituals in which indigenous knowledge is acquired, created, stored, disseminated, retrieved, and used (Mkumbo, 2017).

Because the impact of the unity of residency is so powerful that one community is distinct from the other, local communities may be autonomous and have a strong link of solidarity and a sense of communal closeness (Singal et al., 2020). Individual

expressions of indigenous knowledge emerge to define and play a vital part in a community's cultural life, and culture is a vehicle for self-expression and the construction of communal identity (Natsir et al., 2022). Thus, future generations must continue to retain local community knowledge to sustain local culture(Sunariyati et al., 2019).

The local community is always close to the environment because they still depend on it for a living (Abas et al., 2020). A community is big enough to plan cooperative initiatives and come to responsible decisions on pressing local issues of social importance. By structuring social ties and connections within a community, social capital can provide synergistic results. A local community's social capital is defined by social initiative, involvement, and trust (Prelikova et al., 2020).

This knowledge is used to answer various problems in meeting their needs. In due course, this knowledge becomes the tradition of the local community or tribe (Martinez et al., 2019). The local community's understanding of the value of historical preservation is essential for teaching future generations the importance of comprehending and valuing history (Roslan et al., 2021). It is possible to classify conserved cultural structures as cultural heritage. Elements of cultural heritage are important because they represent a society and its social traits (Kafadar, 2021). The Minangkabau tradition is one of these cultures that is kept alive by the Minangkabau Community. West Sumatra is a region in Indonesia that is populated by the Minangkabau tribe. The Minangkabau community has a unique matrilineal lineage. In giving birth to the norms that govern life, the traditional Minangkabau society has made nature its life guide and a source of analogy, demanding thinking and acting (Sovia Firdaus et al., 2018).

*2.3 Local Leaders*

Local leaders are individuals who play a significant role in their communities, and they can come from a variety of backgrounds and professions. Leadership is also an activity in guiding a group to achieve common goals that have been agreed upon (Sola, 2020). Local leadership is traditional leadership, according to patterns that have been outlined by custom on an ongoing basis within their respective clans or tribes (Putra & Supanggah, 2018). Traditional leadership according to Weber is a social order that relies on ancient habits where the status and rights of leaders are also determined by customs (Suryami, 2014). Local leadership is expected to answer and create ideal leaders who implement traditional, religious, and scientific values as well as universal leadership values (Sulastri et al., 2018).

*2.4 Knowledge Management*

Knowledge management (KM) includes the processes, strategies, storage systems, sustainability measures, and the transfer, evaluation, creation, and modification of knowledge (Tajpour et al., 2022). As it enables the effective retrieval of prior knowledge at the appropriate moment for the appropriate individuals, KM can reduce the time and effort required to create new information (Nakash & Bouhnik, 2022). Moreover, KM helps organisations identify and remove obstacles to the flow of knowledge, improving organisational performance (Nanjundeswaraswamy & Swamy, 2022).

According to Antunes & Pinheiro (2019), KM is the management of processes intended for the generation, storage, access, and dissemination of intellectual assets of an

organisation (Bougoulia & Glykas, 2022). Furthermore, KM is the practice of discovering, capturing, sharing, and using knowledge to maximize the impact of knowledge on a unit's achievement of goals in the most efficient way possible. KM encourages people to relate their knowledge when creating accumulation, organisation, and sharing environments and systems (Mikalauskiene & Atkociuniene, 2019). KM enables individuals, teams, and entire organisations to collectively and systematically create, share and apply knowledge to achieve their strategic and operational objectives (North & Kumta, 2018). KM's focus is on obtaining and synthesizing intellectual capital to maximise decision-making (Majumder & Dey, 2022).

### 2.5 Sustainable Development Goals (SDGs)

Global development goals, such as the Sustainable Development Goals (SDGs), emphasize the importance of local solutions for global sustainable development, particularly those rooted in traditional ecological and local community knowledge (Brown et al., 2020). The SDGs should benefit from local knowledge that promotes integration, thorough understanding, and practice in terms of clarity, meaning, purpose, and related activities. According to Castellanos et al., knowledge has evolved into consideration when making decisions about social, economic, and environmental issues, as well as the means of subsistence for rural families (Gutiérrez García et al., 2020).

Many SDGs are linked to indigenous values, although the connections aren't always clear. In terms of clarity, meaning, purpose, and related activities, local knowledge that fosters integration and comprehensive understanding and practice could boost SDGs. The success and sustainability of any development activity depend largely on local knowledge and practices. This local knowledge usually is important to support the SDGs, especially for no poverty, quality education, and sustainable cities and communities.

## 3    Methodology

This study adopted collected qualitative data through semi-structured interviews, and participant experiences were used to explore the current practice of local knowledge management among Minangkabau community. Researchers prepare semi structure questions and serve as a guide in the conduct of informant interviews. Semi-structured interviews were conducted with 12 Minangkabau community leaders namely: traditional leaders, religious leaders, and community leaders. The respondents were identified as Traditional Leaders (TL), Religious Leaders (RL), and Community Leaders (CL) in Agam district, Indonesia were identified as Table 1 below.

Table 1: Minangkabau Community Leaders Profile

| Code | Position | Age | Experience in years |
| --- | --- | --- | --- |
| TL 1 | Traditional Leaders | 75 | 45 |
| TL 2 | Traditional Leaders | 58 | 8 |
| TL 3 | Traditional Leaders | 49 | 22 |

| TL 4 | Traditional Leaders | 61 | 20 |
|------|--------------------|----|----|
| RL 1 | Religious Leaders | 72 | 52 |
| RL 2 | Religious Leaders | 54 | 10 |
| RL 3 | Religious Leaders | 55 | 32 |
| RL 4 | Religious Leaders | 40 | 15 |
| CL 1 | Community Leaders | 53 | 15 |
| CL 2 | Community Leaders | 62 | 7 |
| CL 3 | Community Leaders | 48 | 15 |
| CL 4 | Community Leaders | 57 | 25 |

The collection of all the relevant information to make sure it can answer the interview objective to identify the themes. Qualitative research data analysis is done by coding and categorizing each segment and turning it into categories. After transcribing all interview sessions via Microsoft Words software, the researcher uploaded the data into the NVIVO 14 software to rearrange the data in an integrated manner. This can make it easier for researchers to explore data through the commands available on NVIVO 14 as well as helping researchers encode relevant data. Coding data in qualitative research helps to simultaneously develop ideas about how data can be represented, as well as to draw some conclusions. In turn, conclusions can provide feedback on how the raw data is coded, categorized, and displayed (Sekaran & Bougie, 2016). Although Braun and Clarke present thematic analysis as a linear, six-phased method, it is an iterative and reflective process that develops over time and involves a constant back and forth between phases (Nowell et al., 2017); (Kiger & Varpio, 2020). Thematic analysis is a good approach to research in which the researcher tries to find out something about people's views, opinions, knowledge, experiences, or values from a set of qualitative data. A good example is interview transcripts. In other words, the thematic analysis is the summarization of the data and good analysis interprets and makes sense of it (Maguire & Delahunt, 2017). As explained this analysis is a method for identifying, analyzing, organizing, describing, and reporting themes found within a data set.

## 4 Findings

This section presents findings about the practise of local knowledge management among the Minangkabau Community in Agam district, Indonesia, for sustainable development through three categories: input, processing, and output local knowledge. Input is special local knowledge from culture and heritage, where knowledge from the contributor consists of tacit and explicit knowledge of the Minangkabau community. The process is the system that emphasises the complex relationships between knowledge transfer actors and the coexistence of implicit and explicit knowledge transfer mechanisms. The last part of local knowledge management is the output of local knowledge protection and social and knowledge development. The details are in Table 2 below.

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Table 2: Interview Findings Practice of Local Knowledge Management among the
Minangkabau community leaders

| Theme | Sub-Theme | Interview Findings |
|---|---|---|
| Tacit Knowledge | Thinking | Knowledge is not conveyed openly or directly, but symbolically through figurative words (CL1).<br>Local community knowledge is generally embedded in practise and comes from the experience of traditional, religious, and community leaders, often exchanged through personal communication and practise from teachers, from parents to children, and from their people or environment (CL2) |
| | Commitment | One of them is through counseling activities on the *Kerapatan Adat Nagari (KAN)* and *Kerapatan Adat Jorong (KAJ)* (CL2)<br>Through taboos or fearful news and through imitation and objects (CL3) |
| | Competence | ...competencies acquired through practice or experience (CL2)<br>Local knowledge or skills are obtained from generation to generation from upbringing and habits in the family, community and community (CL4)<br>communities study or study to acquire local knowledge. Like studying silek, pasambahan and others (TL2) |
| | Deed | Knowledge is obtained from experience gained from behavior, rules, traditions, ancestral habits passed down from generation to generation (CL3)<br>Local knowledge that exists in this community is integrated into the system of norms and culture (RL1)<br>Joint statement letters.... (RL4)<br>......adhering to the natural philosophy of takambang being a teacher, the Minangkabau people learn knowledge from nature and can use nature for survival (TL2) |
| Explicit Knowledge | Data and Information | Through telling stories, through allegories, proverbs, and wise words created by society itself (CL1)<br>Minangkabau people acquire knowledge sourced from experience gained interacting with people, the environment and nature (CL4)<br>.....various stories in the form of myths, stories, legends (RL1)<br>……maota di lapau (talking in the shop) in this process there is communication, transformation of ideas or knowledge possessed and a place to socialize (RL3) |
| | Documents | Oral notes about memories, experiences and life stories of old people (CL2)<br>There are books and songs that describe local wisdom owned by the community and hold training activities. For example, the Banagari Guidebook for Building Nagari Jo Raso Banagari (CL3)<br>Tambo is a story about the past of the Minangkabau people (CL4)<br>…there are training events, knowledge about adat, documented through photos and printed media (RL1) |
| | Files | ….has also been saved in the form of a video that has been shared with the public (CL3)<br>Oral knowledge has begun to be written down like that contained in the tambo, and technological developments in the process of transferring local knowledge have been published in the form of videos and social media at this time (RL2) |
| | Records | Owned local knowledge comes from pictures, writing, voice and video recordings (CL2)<br>…tambo written in jawi script (CL4) |

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| Theme | Sub-Theme | Interview Findings |
|---|---|---|
| | | Today's inheritance can be seen from the tambo, photos, voice recordings related to people's living habits (TL2) |
| Information Literacy | Information behavior | Yes, I use the information I get to solve work and daily life problems (TL4)<br>... asking parents or people who know about customs, religion, and customs ...(CL2)<br> ...I choose the sources of information I will use, such as asking people, reading books, and reading newspapers (CL4)<br>... I identify or match the sources of information I use (CL1, RL1, RL3) |
| | Information-seeking and use | Recognizes the need for information, especially related to my work (CL3)<br>Met the owner of this knowledge, ... through electronic media, such as Facebook, and Instagram, especially the younger generation (RL1)<br>Provides references related to Minangkabau, holds art performances with the theme of Minangkabau regional stories so that people can get to know the area where they live (RL2)<br>...discussed, read sources of information, and told stories with community leaders (TL1) |
| | Data-seeking and use | ...Minangkabau people is *Maota di lapau* (chat at the tavern) (RL4)<br>... conducts observations and interviews with people or people who are considered to know the information needed best (TL2) |
| | The essence of information literacy | ..seek information through nature, books, and people who are knowledgeable in certain fields (TL4)<br>... ask traditional leaders, religious leaders, and religious leaders and also usually access the results of seminars, roadshows, workshops, training programs, or conferences related to local knowledge (CL1)<br>...ask people who know the information and I can access the library, cultural center, and the internet (CL2)<br>...through activities carried out in the village and electronic media such as local TV, the internet, and social media (CL3, TL3)<br>...asking questions or telling people, reading books, and accessing the internet (RL4) |
| | Information literacy experiences | My way of organizing, implementing, and communicating information related to local knowledge ...(CL1, CL4)<br>The information that has been obtained is carried out outreach activities, and training involving the younger generation at the village office, this training activity is a mandatory agenda every year. But their forms and activities have different names (CL2, CL3)<br>...sending someone to look for information, which we call manti. CL1)<br>The main source of information was the datuak, who is a traditional leader, whose role is as a policy maker, ensuring that values and norms work according to their functions and various rules that can be used as guidelines for the community...(TL3)<br>I usually do ask things that I don't know about customs, I ask custom leaders directly ...(CL4, TL 4)<br>Held local wisdom activities...usually, these activities are published in print media and social media so that they can be accessed and known by the general public (TL2) |
| Local Knowledge Transfer | Mechanism transfer knowledge | …exists, books have been made and some have been stored in video form which has been distributed to the public (CL3)<br>...The inheritance of knowledge can also be seen in the form of Tambo in Jawi writing, Gadang house buildings, and other historical objects and places, customs regarding marriage, and traditional ceremonies...(CL1, RL1, CL4)<br>Through mass and electronic media...(RL3)<br>Knowledge about Minangkabau can be read from various reading materials that contain Minangkabau culture (TL1) |

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| Theme | Sub-Theme | Interview Findings |
|---|---|---|
| | Knowledge transfer actors | .... some have been written in book form (RL1) <br> The knowledge is stored in the knowledge owner.... (RL2) |
| | The strategy implicit transfer of knowledge | ......transfer process is for the general public and the learning given is hands-on practice (RL2) <br> Transferring knowledge passed down from ancestors to families, clans, and communities.... (CL2) <br> .....documented by the community through photos and videos of activities and the village of *Salingka Nagari* books owned by the community (CL3) <br> ..... *tambo*, the book of *adat Salingka Nagari*, and through books on Minangkabau local wisdom both tell about culture, nature, and others (TL1) |
| | The codification strategy explicit knowledge | .......recorded through memory and embedded in folklore, songs, stories, dances, proverbs, rituals, local languages, myths, beliefs, games, cultural values, agricultural knowledge, knowledge about local animals and plants and their relation to medicinal activities and food, local history, earth, stars, and water systems, and more (CL2) <br> ……there are also books and writings about Minangkabau in our library at home (RL3) <br> Local knowledge is owned by the community who owns the knowledge, and some have been documented (RL4) |
| Local Knowledge Protection | Issuing a regulation | ...training and implement activities ...CL1) <br> ...conducts outreach, and implements in family life, and people (CL4) <br> Teaches children, nephews, and people the ways of the Minangkabau people and their traditions about each other, to nature, and God (TL1) <br> Organizes socialization of customary knowledge which is routinely carried out by KAN and KAJ... (TL2, CL4) |
| | Contribute to social and knowledge development | Motivates the community to document existing local knowledge and wisdom through works, both in the form of books and audiovisuals (RL4) <br> Creates a pattern of inheritance of knowledge that is stored in the tacit form in the mind of the owner or orally (TL3) <br> ...In general, this knowledge is conveyed orally and also obtained orally through the learning process... (RL1) <br> Most of the knowledge is stored in oral, semi-oral, and non-oral forms... (TL1) <br> The transmission of local knowledge is done through oral tradition and has not been codified...to overcome this, it is hoped that the ability of the Minangkabau people themselves to maintain, preserve and pass on their local knowledge (TL3) |
| | Form legislation, and documentation | Conduct training involving the younger generation at the village office..... (CL2, RL1) <br> ... pasambahan, committee, tahfis and silek are held in the surau (RL2) <br> Teaches pasambahan, learns about organizing the funeral, learns religion, and heritage ...(RL3) |
| | Issuing a regulation | Through outreach activities, training, and making a banagari manual people can get to know the ins and outs of their village...(CL3) |
| | Contribute to social and knowledge development | Encourage local knowledge activities in the community so that this can take place...... (CL1) <br> ...(a) the community through living habits in society which are passed down from generation to generation, (b) customary institutions, through activities carried out by customary institutions that have been recorded, (c) education, through learning Minangkabau natural culture which is taught in formal schools…(CL4) <br> Minangkabau cultural heritage is stored in tambo... (CR2, TL2) |

| Theme | Sub-Theme | Interview Findings |
|---|---|---|
| | | ...communities make their local knowledge their identity and they protect this knowledge socially and economically by teaching it or passing it on to their children and nephews.... (TL2) <br> …….Preservation of local knowledge can be carried out through direct activities in the community and by creating or developing learning and information centers regarding this local knowledge (TL4) |
| | Form legislation, and documentation | Yes, local wisdom is important ...as stated in the Regional Regulation of West Sumatra Province Number: 2 of 2007 Concerning Principles of village Government Article 1 paragraph 13 states that *Kerapatan Adat Nagari,* ….. (TL4) |
| Social and Knowledge Development | Positive Value | Yes, it is important to (1) maintain the existence of the Minangkabau ethnicity, (2) pass on positive values to the next Minangkabau generation….. (RL3) <br> Yes, it is very important, especially in the four important events in life, namely marriage (baralek), the appointment of traditional leaders, the establishment of traditional houses, and death (TL1) |
| | Retain local knowledge for social capital | ... Local wisdom possessed is a view of life, knowledge, and life strategies that are carried out or realized through the activities or activities of the community itself... (CL2, CL4) <br> ...the social capital of village development and becomes social control over the direction and pace of community development in the future (CL3) <br> ...important, because local knowledge is the knowledge possessed by the Minangkabau people which is accumulated from time to time through direct experience and interaction with the social and natural environment around it for the survival of the community (TL3) |
| | The potential of local knowledge in supporting the SDGs in development efforts for the future | ...Merantau is a form of effort to give birth and provide economic strength and intelligence for the next generation of Minangkabau (CL1) <br> ...The community has agricultural areas and property which are the source of life (CL3) <br> ... optimizing the potential of existing land, both plantation land, agriculture, waters, and yard land...(CL4) <br> ... the village government exercises control over land and other forms of ownership (RL1, RL4, CL2) <br> ...Traditional learning emphasizes the role of parents and family, traditional leaders, religious leaders, and community leaders (CL2, CL3) <br> ... The pattern of education at the *surau* influences the social characteristics of children, the habit of living communally, and the democratic character… (RL1) <br> ...surau for the Minangkabau people is one of the institutions that play an important role in the development of religious moral values and Minangkabau customs (RL4, TL1) <br> ...each village has houses of worship, traditional houses, possible residents, rice fields, and fields (CL2) <br> ...settlements must have adequate public facilities for the community such as halls (balairung), mosques, roads, public baths, rice fields and public play areas, and cemeteries (CL3, TL1, and TL4) <br> ...for the community, nature is everything because it is a place to live and develop, a source of knowledge ... It can be seen that the Minangkabau people depend on nature (RL2, RL3) <br> ...culture of cooperation, taking care to prevent social inequality in a society, and preserving the natural environment or natural resources to meet community needs (TL2) |

# 5  Discussions

The discussion will be guided by categorizing the answers to the interview questions that have been formulated for this study. From the findings, it found that the categories of local knowledge management consist of input, process and output.

*5.1 The Input of Local Knowledge Management*

Input is special local knowledge from culture and heritage, where knowledge from the contributor consists of tacit and explicit knowledge. Tacit knowledge is firmly embedded in a person's actions and experiences, as well as the beliefs, values, or emotions that they have (Zamfir, 2020). Wittgenstein linked personal knowledge to the community and explained how local knowledge patterns that exist in different societies affect learning abilities (Omer Abbas ElSharief Omer, 2020). It could be lost forever if those people are not able to transfer it to their descendants.

Daily Minangkabau community activities that can be derived from tacit or explicit knowledge through observation, imitation, perception, communication, and practise It is primarily accomplished through the sharing of experiences, and discussions in the family, community, and community setting. Individuals gain tacit knowledge from others through observation, interaction, conversation, examination, imitation, and practise, as well as through shared experiences. The characteristics of tacit knowledge include experience-based knowledge, experience that is not readily communicated or shared with others because it is difficult to express, and knowledge that can be effectively transferred face-to-face. Two dimensions can be used to measure knowledge: (1) the technical dimension, which includes difficult-to-formalise skills or expertise; and (2) the cognitive dimension, which consists of beliefs, perceptions, ideals, values, emotions, and mental dimensions.

According, Alavi and Leidner (2001) argue information is converted to knowledge once it is processed in the mind of individuals (Hamilton et al., 2014). Most of the information is kept by the public orally and a little in written form. It belongs to the owners of the knowledge themselves, such as traditional leaders, religious leaders, and community leaders or *cadiak pandai*.

Knowledge that can be codified or preserved in documents and other storage media is called explicit knowledge. Reconfigure explicit knowledge by categorising, refining, and sorting. The application of explicit knowledge is facilitated by the fact that it is obtained through writing or documentation. Combination is the process of organising a collection of explicit knowledge into a more systematic form of media by introducing new knowledge, combining the forms of knowledge, and categorising the collected knowledge. Internalisation is the transformation of explicit knowledge into tacit knowledge.

*5.2 Process of Local Knowledge Management*

The system emphasizes the complex relationships between knowledge transfer actors and the coexistence of implicit and explicit knowledge transfer mechanisms. The processes may be utilised individually, concurrently, or jointly. Local knowledge

transfer is a process of transferring local knowledge from individuals who are referred to as sources of knowledge to recipient knowledge. Most of the respondents think that the transfer of knowledge is done orally. This is consistent with the belief that traditional knowledge is often conveyed orally and perpetuated via cultural manifestations such as arts, crafts, and rituals (Kandal et al., 2021).

As a major process, the transfer of local knowledge is carried out through sharing experiences, discussions, and stories that are carried out in the family, community, and community environment which are conveyed orally. Based on the opinions of the informants above, we can conclude that the transfer of local knowledge is related to user knowledge. Stories are another excellent tool for capturing and coding tacit knowledge (Probosari & Siswanti, 2017).

Obtained from experiences, experiences that we have seen, felt, and done, we will understand these experiences through conversations which we then digest in our brains (Probosari & Siswanti, 2017). Transfer of knowledge makes it possible to convert experience into knowledge (Probosari & Siswanti, 2017).

Each individual plays a role in the transfer of knowledge. The application of knowledge transfer will be closely related to actors who have this knowledge, or it is called local knowledge. The transfer of knowledge is a form of the process of communicating knowledge (Waty et al., 2020).

Safitri and Priyanto (2015) knowledge transfer depends on understanding between knowledge owners and knowledge users. General understanding consists of context and experience. Context is the story behind knowledge, conditions, or situations that make knowledge understandable. Meanwhile, experience is an activity that produces a mental model of how knowledge is used (Waty et al., 2020). In one part of society, information literacy is growing, but on the other hand knowledge of traditional things is starting to be forgotten and even disappearing (Rachmadyanti, 2022).

According to Dorner and Gorman (2006) emphasis on context leads them to define information literacy in developing countries as "the ability of individuals or groups to be aware of the social and cultural contexts of information, to understand when it can help, to know how to find and evaluate it, and to understand how to integrate the relevant information to create new knowledge"(Anwar et al., 2022). The Minangkabau community's information literacy practices are influenced by family patterns, community, and religion, among other social elements, as well as collective practices.

A person who is information literate can recognize the need for information quickly, formulate questions based on information needs, identify potential information sources, develop successful search strategies, access a variety of information sources, evaluate information obtained expressively, classify information effectively, incorporate new information into the body of existing knowledge, and use information decisively (Adekoya, 2022).

According to Çoklar, Yaman, and Yurdakul (2017), there is a high-level correlation between information literacy and information search competencies (Lee et al., 2020). The essential contributions of information literacy to an individual's information-seeking behavior, information use, and the formation of new knowledge (Repository, 2017). Human information needs exert influence on information behavior by prompting specific information actions in response to those needs. One of the challenges faced is limited access to finding information about the local knowledge of the Minangkabau

people due to the lack of physical resources they have. Most of the local knowledge information obtained is usually word of mouth. In one part of society, information literacy is growing, but on the other hand knowledge of traditional things is starting to be forgotten and even disappears (Rachmadyanti, 2022).

*5.3 Output Local Knowledge Protection*

The last part of the process of knowledge transfer is the output of local knowledge protection. This is done to accommodate community questions related to customs and laws. The Copyright Law, Patent Law, and Culture Promotion Act govern the preservation of indigenous knowledge in Indonesia. However, local knowledge protection in Indonesia has not been optimum since it has not offered appropriate protection for local knowledge (Perangin-angin et al., 2020).

Recognition of the importance of protecting local knowledge in Indonesia is getting stronger with the declaration of cultural identity and the rights of indigenous peoples as constitutional rights through the second amendment to the 1945 Constitution in 2000. The right of indigenous peoples to maintain and develop their traditional knowledge is also guaranteed by the 1945 Constitution. This is stated in Article 32 Paragraphs (1) and (2) of the 1945 Constitution. Law No. 5 of 2017 concerning the Advancement of Culture regulates traditional knowledge. Traditional knowledge is one of the objects of cultural advancement. Traditional knowledge documentation is not only beneficial to traditional knowledge preservation but also beneficial to the science world(Kurnilasari et al., 2018).

The preservation of values through education is carried out due to the rise of local culture that is fading with time and division due to the community's lack of understanding of the noble values that have been passed down from the past until now, from one generation to the next (Helmon & Rahardi, 2020). Traditional knowledge must be preserved since it may help to build better solutions by identifying cost-effective and sustainable procedures (Lakshmi Poorna et al., 2014). The influence of altering customary law values should be considered since it is critical for the maintenance and development of customary law values, particularly for the Minangkabau community (Poespasari, 2019).

Knowledge storage can be determined as the recording and preservation of the available knowledge in the organization's databases and repositories, which lead to increasing work efficiency, achieving knowledge strategy, and improving sustainable organizational performance (Kordab et al., 2020). It is in this way that the relationship between libraries, literacy or information, and development is automatic and significant (Mose, 2018).

According to Human Rights & Equal Opportunity Commission (2009), loss of traditional knowledge will result in a decline in indigenous identity and a severe reduction in the recognition and understanding of an invaluable sustainable knowledge system (Maunganidze, 2016).    The constraints in the knowledge preservation, were: people's customs with the oral traditions, people's habits of bakaba babarito, not all of Minangkabau costumes being known by many people, lack of standardization, lack of public interest in preserving the culture, and the absence of a database of cultural knowledge (Isnan & Rohmiyati, 2016). There is a very important connection between

the protection of traditional knowledge and the Intellectual property systems because IPRS is about recognition of and respect for the contributions of human creativity believing that Intellectual efforts should be protected (Aguilar, 2001).

The preservation of the physical environment, economic efficiency, and social equity, and represents a stage of the alliance between sustainable development and existing policies to achieve the SDGs (Salvia et al., 2019). According to Oyeronke, (2012), societal development is diverse; cultural, educational, political, economic, etc., and all of it is spurred by information that a society possesses (Mose, 2018).

According to (Molodchik, Shakina and Bykova, 2012; Kok, 2007; Bischoff, Vladova and Jeschke, 2012; Ming-Chang Lee. 2017; Johannessen, 2017; Byukusenge and Munene, 2017), the application of knowledge management to the implementation of sustainable development goals attaches great importance to the intellectual capital, creativity, innovations that encourage sharing good as well as bad experiences, ensuring inter- action of technologies, talents, and tolerances that are useful for the organization and the whole economy, and culture of lifelong learning (Mikalauskiene & Atkociuniene, 2019).

The intangible cultural heritage legal products that have been designated as Indonesia's intangible cultural heritage are the heritage owned by the Indonesian Nation and become the public domain that can be used properly. However, most interviewees said that full protection is not yet in place. Participants suggested that laws and regulations be reviewed to be more comprehensive and effective, especially about expressions of folklore, traditional music, and other forms of local wisdom. The protection of collective property rights should be implemented to assist in the development of local communities. Local communities should be involved in all activities related to local knowledge for any activities based on this knowledge. Local communities must be able to see the advantages and disadvantages of these activities. Local knowledge held by local communities is valuable in economic terms. Advanced protection systems must be in place to protect this type of knowledge.

Sustainable development focuses on the ability of humans to improve their daily lives by using the resources around them, without affecting the environment. Local knowledge is underutilised in development processes and strategies. The SDGs state no poverty is the priority point. This means that the world has agreed to eliminate poverty in any form in all corners of the world, including Minangkabau community in agam district Indonesia. As mandated by the 1945 Constitution, poverty must be alleviated through development (Muhammad et al., 2021). The steps taken by the Minangkabau community in no poverty are legacy, mutual help, trade, and wander.

Improving education for the community will spur aspirations toward the goals and objectives of the SDGs, especially to increase Indonesia's human development index. So it is hoped that the role of education can increase Indonesia's competitiveness. The steps taken by the Minangkabau community to quality education are family, philosophy, and surau education. The philosophy of *alam takambang jadi guru*, learning from nature as well as from one's own and others' life experiences is the dominant thinking orientation in Minangkabau society. The saying "*alam takambang jadi guru*" shows that Minangkabau people take the dynamic nature (environment) as the best example of living life, and then implement it into various forms of their daily activities (Alimin

& Kusnomo, 2018). Nature, for the Minangkabau people, is the first and foremost teacher. This makes the community always pay attention to natural phenomena, both social and non-social, as a guide to life (Nurdin, Amin dan Rido, 2020). Because surau has the following roles: a place to spend the night for Minangkabau men who are basic, a place to preserve, and inherit Minangkabau customs and culture, a place for deliberation, and a traditional Islamic education institution (Arifan et al., 2017). *Surau* is one of the non-formal education places of the Minangkabau community and Minangkabau leaders where this non-formal education is an education that fills the void of the local education system in the Minangkabau community (Zalmi et al., 2019).

Local communities support the achievement of SDGs No. 11 (sustainable cities and communities) making cities and settlements inclusive, safe, resilient, and sustainable through settlements, disaster resilience, and natural resource. Changes in house architecture are strongly influenced by people's access to various information regarding modern building design and technology (Hakim, 2018). *Nagari* is a unit of the social and cultural power of the Minangkabau people that has been passed down from generation to generation based on blood relations.

## 6    Conclusions

The results from this study show that the current practice of local knowledge management among the Minangkabau Community Leaders in Agam District, Indonesia, is for Sustainable Development. Local knowledge management contributes to empowering local communities. By strengthening and recognizing local knowledge, communities can become partners in sustainable development and decision-making. This can include participation in resource management, local economic development, or decision-making that incorporates local knowledge and values. It also contributes to empowering local communities. By strengthening and recognizing local knowledge, communities can become partners in sustainable development and decision-making. This can include participation in resource management, local economic development, or decision-making that incorporates local knowledge and values. Local capacity building by valuing and strengthening existing knowledge in the community. This includes education, training, and the transfer of knowledge between generations. By strengthening local knowledge, communities can have a more active role in sustainable development and achieve the goals set in the SDGs.

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