

# Development of Tacit Knowledge Management Themes Using Existing Literature and KJ Methodology

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## Abstract

### ABSTRACT

*Knowledge is an immensely valuable asset of any organisation and often needs to be better leveraged. Tacit knowledge management (TKM) is more strategic as people make all the difference to an organisation. However, their tacit knowledge needs to be better managed in capturing and using the same. The current study considers the TKM conceptual model from the literature and verifies the elements of the model by analysing the keywords from the relevant research papers. KJ method of Affinity is used to analyse the keywords data. The study also adds three new themes and modifies the TKM conceptual model, an essential addition to the current body of knowledge. This conceptual model serves the important purpose of structuring the current research on Tacit knowledge and guides future researchers on themes of strategic importance to the organisations.*

**Key words:** *Tacit knowledge management, themes, KJ Method, Conceptual model, Key words from literature*

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## 1. Introduction

Organisational knowledge is nothing but the collective knowledge of its human resources. Knowledge, which is part of individuals, manifesting in many forms like experience, intuition, etc., is such an entity that is very precious and very hard to explicate. Organisations lose this valuable asset when experienced people either retire or resign.

There was a substantial knowledge loss to many organisations during the COVID pandemic due to experts' deaths and a sudden and unplanned exit of experts. This has made many industries start looking at their knowledge management strategies, especially tacit knowledge management (TKM).

The importance of TKM is well captured in the literature. The business environments are extremely VUCA (Volatile, Uncertain, complex and ambiguous). Such an environment demands a significant and strategic role for TKM, within and outside the organisations (Polanyi, 1962,1967; Venkitachalam & Busch, 2012).

Bush and Tiwana (2005) articulated that most organisational knowledge is not fully exploited as it is mainly in the heads of the people but needs to be better captured in reusable documents like procedures and standards.

While Explicit knowledge is all about knowledge captured and demonstrated as standards, procedures, guidelines, etc., organisations most often succeed due to the tacit knowledge of the individuals, which is used to solve various organisational problems. The biggest challenge is that the tacit knowledge of such experienced experts is tough to convert to explicit knowledge, as well as effective reuse of such captured knowledge.

Many industries also need help finding their problem with w.r.t managing their knowledge resources if they need a formal Knowledge management team. If an organisation wants to start its tacit knowledge management journey, there needs to be a clear structure that can guide it. This study aims to arrive at potential themes of tacit knowledge management using current literature in this domain. When developed and detailed, these themes can guide

organisations regarding their challenges and the way forward in their TKM journey.

Jayaram and Bhatta (2023), in their study on the systematic literature research paper, have considered research articles across the industry in the domain of Tacit knowledge management. In their work, they have used the PRISMA framework. They have used EBSCO to arrive at relevant papers. Keywords used for searching are "Tacit knowledge management", "Tacit knowledge", and "knowledge sharing". The timeline is between 2010 and 2021 from the journals with A, B, and C ratings (ABDC ratings). The search has resulted in all 250 journal articles. Their study also did independent research to identify another 121 papers from A and A+ rated journals. Out of 362 records considered for their search, they have zeroed in on 50 highly relevant articles with an average citation of more than 20. In their paper, they have articulated that they have used keywords from these 50 articles and analysed the same to arrive at the following themes: Tacit knowledge concept evolution, Barriers to knowledge sharing, Tacit knowledge acquisition process – various methods, Role of context in tacit knowledge sharing, enablers for tacit knowledge sharing, IT for Explicit knowledge sharing & reuse.

Their paper needs to detail how these themes arrive, and it attempts to use the keywords of the 52 articles considered and arrive at the themes using a language processing tool, in this case, the KJ Method of affinity. The current study confirms the themes Jayaram and Bhatta (2022) arrived and adds a few more themes.

## Methodology

To develop potential themes for Tacit Knowledge management, the data will be the keywords from several research articles carefully collected from the literature.

## Data collection

The Keywords from each research article are captured and captured in Table 1. Each article was further studied to find relevant keywords, wherever applicable. Columns 3 and 4 of Table 1 detail all the keywords captured from 52 research articles. As this study aims to arrive at themes of TKM, keywords captured are analysed for their potential to contribute towards a specific theme. If it has the

potential, it is considered relevant keywords after suitably modifying wherever needed without losing the essence of the keywords. These processed keywords are captured in column 5 of Table 1.

## Data analysis

The keywords of column 5 are the language data which needs to be analysed to develop potential themes coming out of the data. We used the KJ (Named after Jiro Kawakita) method of affinity to analyse the language data to arrive at the themes. The KJ method is an effective research method, a helpful problem-solving tool, and, sometimes, a planning tool for different fields (Kawakita, 1970). Initially, KJ Method was developed to study and interpret ethnographic data in Nepal (Scupin, 1997). KJ Method builds further upon Charles Pierce's notions of abduction and depends on intuitive non-logical thinking. Plain (2007) described the KJ affinity diagram as a powerful and effective tool for organising language data into easily manageable and meaningful groups.

The following process was adapted using the KJ method by a team of authors::

- Capture each keyword (s) on a small piece of paper
- Pick up a keyword and place it on a large cardboard sheet.
- Pick another keyword and check if it belongs to an already placed keyword (s). Use more intuition than logic to check the belonging to an already existing word or group of words
- Place it along with the already placed keyword if it belongs to it, or else place it at another place in the cardboard.
- This way, many groups get formed by placing similar affinity keywords.
- If a picked keyword does not belong to any of the groups formed, place them at the bottom of the cardboard sheet.
- When you exhaustively place all the keywords on cardboard, we see nine groups forming.
- Each group is named appropriately based on the keywords belonging to the group

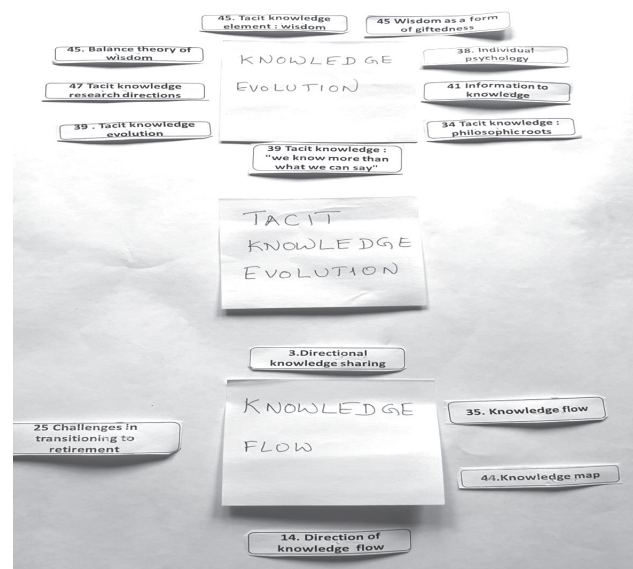
The outcome of the above process is shown in the Fig 1 to Fig 9

## Results

Adopting the above methodology, the following themes and sub-themes have emerged through the application of the KJ method of affinity on language data consisting of Keywords.

### 1. Tacit Knowledge evolution. (Fig 1)

- Knowledge evolution
- Knowledge flow



**Fig. 1 Tacit knowledge evolution**

The knowledge evolution sub-theme contains the concepts of roots of knowledge evolution, concepts of wisdom theory, wisdom as a tacit knowledge element, tacit knowledge research directions, etc.

The second element is the directional knowledge flow. Knowledge flow direction is vital in developing knowledge, especially tacit knowledge. A knowledge map enables an organization to manage its knowledge through adequate directional flows, both vertical and horizontal.

### 2. Knowledge sharing Barriers (Fig 2)

- Individual
- Organisational
- Technological
- Cultural

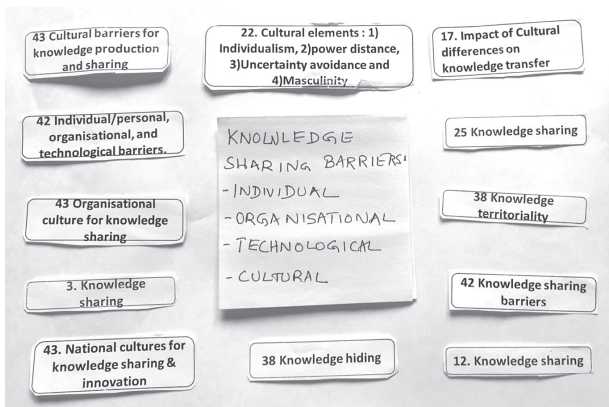


Fig. 2 Knowledge sharing barriers

Knowledge-sharing among their employees is always a big challenge for every organisation. This theme covers many types of barriers: Individual, organisational, and technological. Among cultural barriers, national and organisational cultures are prominent.

### 3. Tacit Knowledge capture methods (Fig 3)

Nonaka's SECI Model

Interview / Depth Interview

Story telling

Cognitive Modeling

Information & Knowledge Audits

Community of Practice

Knowledge Networks

Learning History

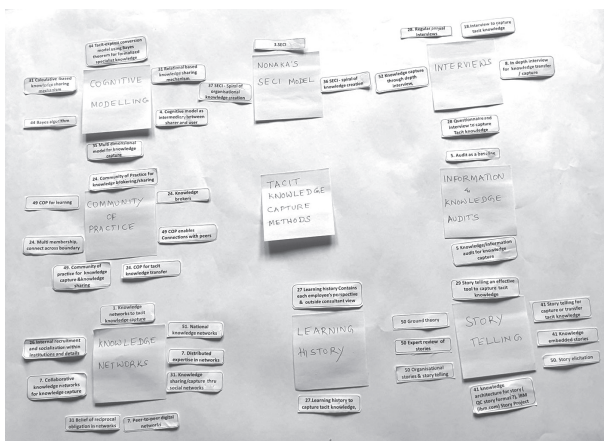


Fig. 3 Tacit knowledge capture methods

The methods for converting tacit knowledge into explicit knowledge are well-researched. The current study brought out eight of them from the keyword analysis.

**a. Cognitive modelling** is a method where a multi-dimensional model is created using the tacit knowledge of the specialists. These models are like a transfer function between the sharer and user of the knowledge.

**b. Nonaka's SECI model** is a powerful concept where an organisation creates knowledge using four modes of knowledge conversion. Japanese organisations successfully use it to convert an individual's tacit knowledge into an organisation's explicit knowledge.

**c. Learning History** is a concept developed by the MIT team. It develops a narrative used to learn from the organisation's successes and failures. It contains the learning perspectives of the concerned employees and expert outside consultants. This captured organisational knowledge is used to prevent the recurrence of past problems.

**d. Community of practice** works as a formal group of people with expertise in a given domain. These people in the group also have a shared passion for developing, retaining, and transferring expertise across the organisation. This also works as a good and natural network among the various experts across the group. Knowledge brokers are essential in enabling an organisation's successful transfer of knowledge.

**e. Information and knowledge audit** is a strategic initiative to understand the knowledge sources and pockets in critical domains in organisations. This is done periodically to manage internal knowledge resources to meet an organisation's strategic goals.

**f. Knowledge networks** are the ones that are formed across organisations on topics of strategic and shared interests. These networks can be formal or informal if the members are passionate. They share knowledge among them, including tacit knowledge. These differ from Community of Practice, which are specific to an organisation. Collaboration and belief in reciprocal obligation are crucial to the success of knowledge networks.



**g. Storytelling** is a powerful method to transfer tacit knowledge. Organisations capture their success and failure learnings in stories, which are effective in transferring embedded tacit knowledge. The way stories are told is essential for the effective use by the knowledge receiver. The format in which stories are captured and told is critical for their success as a tacit knowledge-capture mechanism.

**h. Interview or In-depth interview** is one effective means to capture the tacit knowledge of an individual being interviewed. The role of the interviewer is very crucial. The interviewer's communication skills, questionnaire preparation, responsiveness, and knowledge of the expert's domain will play an essential role in the success of capturing the tacit knowledge.

#### 4. Enablers & Motivators for knowledge sharing (Fig 4)

- Organisational Strategy for Knowledge management
- Trust: Individual & Organisational
- Organisational culture of Knowledge sharing
- Organisational learning culture
- Organisational structure and processes

**a. Organisational strategy for knowledge management** is a crucial sub-theme. This includes identifying strategic roles for tacit knowledge management, organisation design and processes, planning, etc., to prepare the organisation for this initiative.

**b. Trust in an Individual and an Organisation** plays a vital role in sharing and using the knowledge. While affect-based trust enables knowledge sharing, cognition-based trust enables knowledge reuse. Both organisations and knowledge-based trust affect knowledge sharing and usage.

**c. Organisational culture of Knowledge sharing** is an essential enabler for knowledge sharing. National culture also has a significant influence on organisational culture and, hence, on knowledge sharing.

**d. Organisational learning culture** is one of the significant enablers for a knowledge organisation.

A well-entrenched learning culture will always motivate the employees to look for opportunities to learn, which includes knowledge reuse. This culture will also support knowledge sharing, as employees understand the power of knowledge for both individuals and organisations.

**e. Organisational structure and processes** are all about providing an appropriate structure for knowledge management to be very effective. This also includes management processes, providing an environment for knowledge production and sharing, enabling, constructing, transforming, and modifying knowledge, etc.

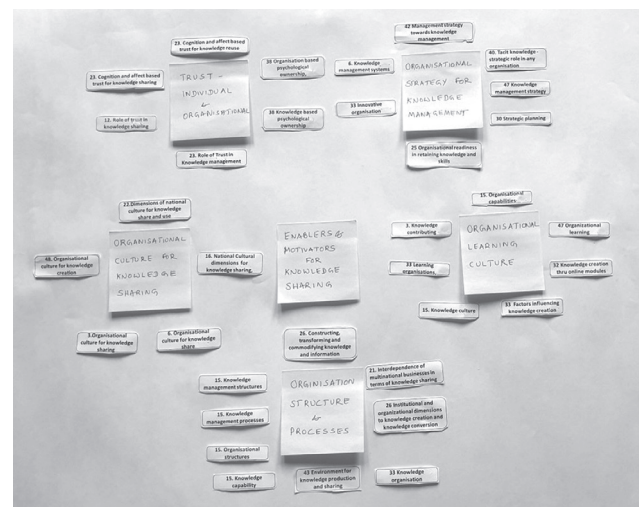


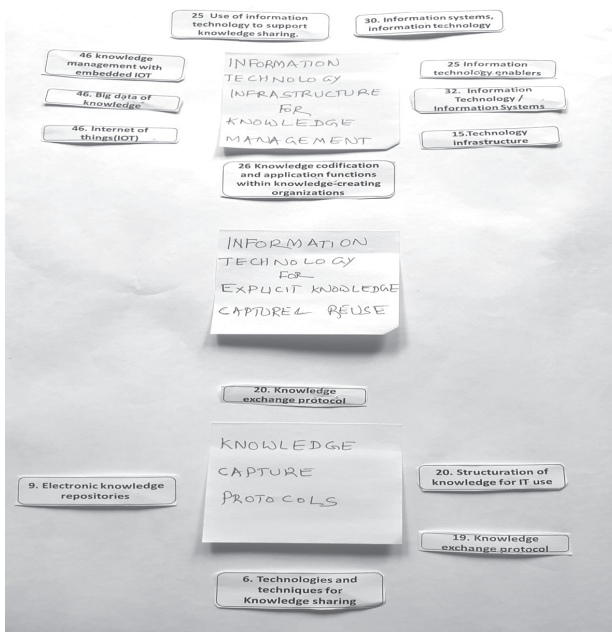
Fig. 4 Enablers and Motivaotrs for knowledge sharing

#### 5. Information Technology for Explicit Knowledge capture & Reuse (Fig 5)

- Information Technology Infrastructure for Knowledge Management
- Knowledge Capture Protocols

**a. Information Technology infrastructure** for KM is all about IT systems, big data of knowledge, IoT with embedded knowledge, and Knowledge codification for enabling the use of IT.

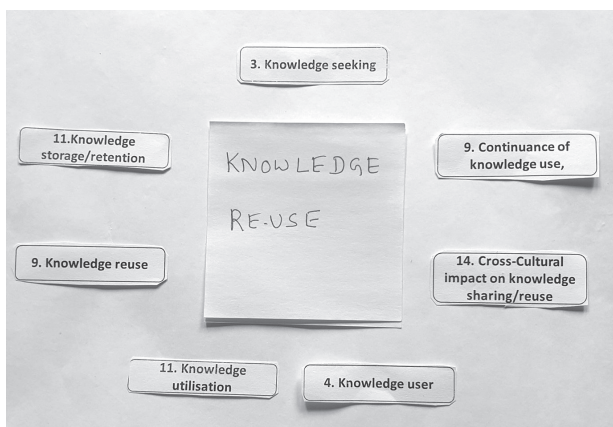
**b. Knowledge capture protocols** are basically for structuring knowledge for IT use. The knowledge exchange protocols are prepared and used to capture all the relevant knowledge in a structure that IT systems can process and recall when a user needs it.



**Fig. 5 Information Technology for Explicit knowledge capture & Reuse**

## 6. Knowledge Reuse. (Fig 6)

Knowledge reuse is crucial for every organisation as this is what benefits them. A culture of knowledge seeking to improve performance needs to be nurtured. Cross-cultural impact is also essential for knowledge reuse. Knowledge reuse continues to be a challenge for many organisations.

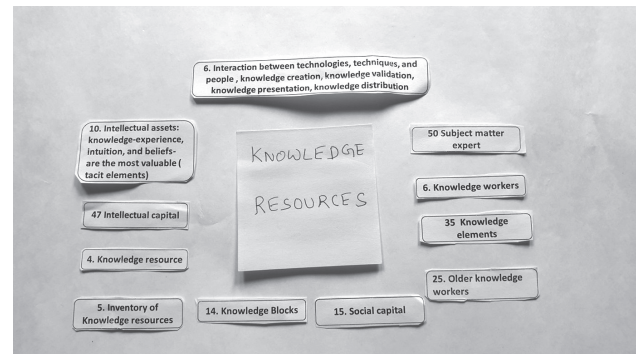


**Fig. 6 Knowledge Reuse**

## 7. Knowledge Resources (Fig 7)

Knowledge resources in tacit knowledge management are central themes. Organisations must define their intellectual capital regarding knowledge elements like Experience, intuitions, beliefs, etc.

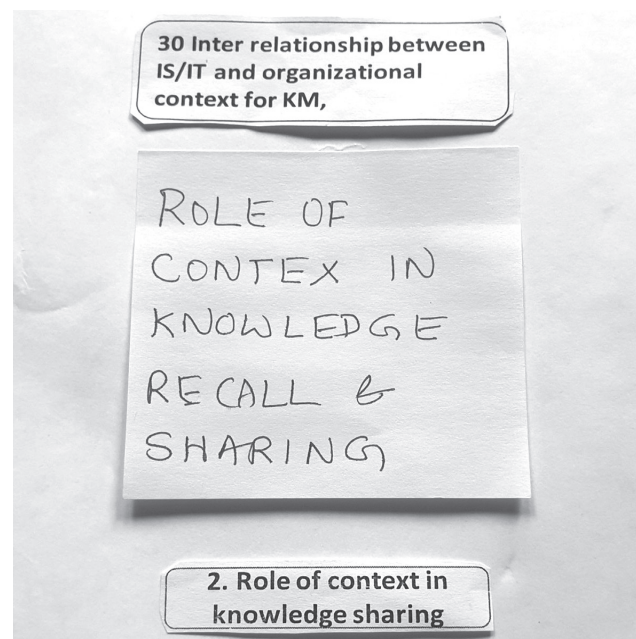
Then, they must also identify subject matter experts or knowledge workers as knowledge sources whose knowledge is valuable to the organisation and needs to be captured for reuse. It needs to be leveraged to maintain these experts' inventory and knowledge.



**Fig. 7 Knowledge Resources**

## 8. Role of Context in Knowledge recall & Sharing (Fig 8)

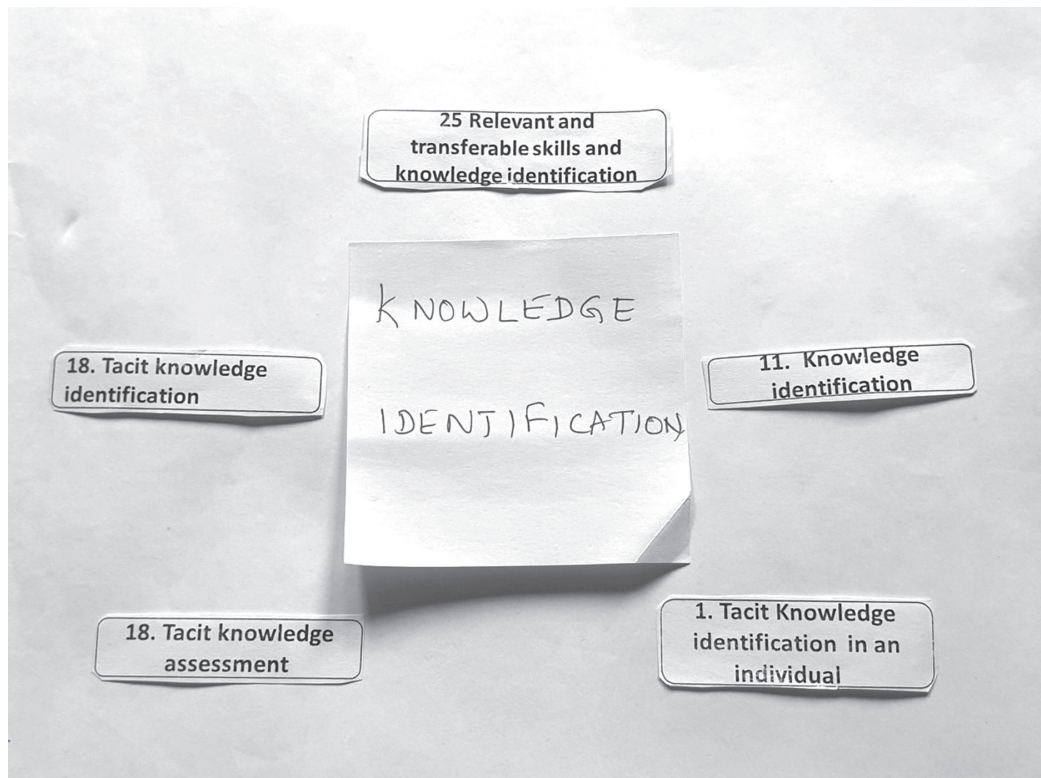
The role of context is an important element in knowledge recall and sharing. People need context to recall experiences or knowledge of theirs. So, context acts like a trigger. There is a strong relationship between IT systems and organisational context in managing Knowledge.



**Fig. 8 Role of context in Knowledge recall & Sharing**

## 9. Knowledge Identification (Fig 9)

Knowledge identification in an individual is one of the least researched topics. It is a first step in TKM, i.e., identifying in an individual what is a relevant and transferable skill or knowledge. Once such knowledge is identified, the next step of capturing comes into place.



**Fig. 9 Knowledge identification**

## Discussions

The objective of the current study is to arrive at various themes of tacit knowledge management using keywords from identified relevant literature. The keywords are used as language data, and the KJ method of affinity is used to analyse the same and arrive at various themes given in the previous chapter. Jayaram and Bhatta (2022) also identified similar themes in their work. However, the current study adds to their work in the following themes / sub-themes. Table 2, given below, compares the themes in the current study with the work of Jayaram and Bhatta (2022).

**Table 2 : Comparison of current research outcomes wrt the literature**

	Themes arrived in the current study	Themes arrived by Jayaram & Bhatta ( 2022)
1	<b>Tacit Knowledge evolution :</b> -Knowledge evolution -Knowledge flow	<b>Tacit knowledge concept evolution</b> - Tacit knowledge evolution
2	<b>Knowledge sharing Barriers :</b> - Individual - Organisational - Technological - Cultural	<b>Barriers for Knowledge sharing :</b> - Individual - Organisational - Technological - Cultural
3	<b>Tacit Knowledge capture methods:</b> Nonaka's SECI Model Interview / Depth Interview Story telling Cognitive Modeling Information & Knowledge Audits Community of Practice Knowledge Networks Learning History	<b>Tacit Knowledge capture methods:</b> Nonaka's SECI Model Interview / Depth Interview Story telling Cognitive Modeling Information & Knowledge Audits Community of Practice Knowledge Networks Learning History
4	Role of Context in knowledge sharing	Role of Context in Knowledge sharing
5	<b>Enablers &amp; Motivators for knowledge sharing :</b> - Organisational Strategy for Knowledge management - Trust : Individual & Organisational - Organisational culture of Knowledge sharing - Organisational learning culture - Organisational structure and processes	<b>Enablers for tacit knowledge sharing :</b> - Motivation for sharing tacit knowledge - Role of trust in sharing tacit knowledge
6	<b>Information Technology For Explicit Knowledge capture &amp; Reuse :</b> - Information Technology Infrastructure For Knowledge Management - Knowledge Capture Protocols	<b>IT for Explicit knowledge capture and reuse :</b> - " Captured Knowledge" protocol for IT Processing - Knowledge reuse portals
7	<b>Knowledge resources</b>	
8	<b>Knowledge reuse</b>	
9	<b>Knowledge identification</b>	

**From the Table 2, we can infer the following:**

1. The themes arrived in the current study, in rows 2,3,4, i.e., Knowledge sharing barriers, Tacit Knowledge capture methods and the role of the context in knowledge sharing, are precisely the same as found in the existing literature.
2. The tacit knowledge evolution theme (row 1) had an additional sub-theme, i.e., knowledge flow.



3. “Enablers for tacit knowledge sharing” (row 5) had a minor modification as “Enablers and Motivators for knowledge sharing”. In addition, the current study brought out five sub-themes instead of two.
4. IT for explicit knowledge capture and reuse (row 6) has slightly modified sub-themes compared to the literature.
5. The current study revealed three new themes: knowledge resources, knowledge reuse and identification.

With the modified / new themes and sub-themes, the revised TKM conceptual model is shown in Fig 10.

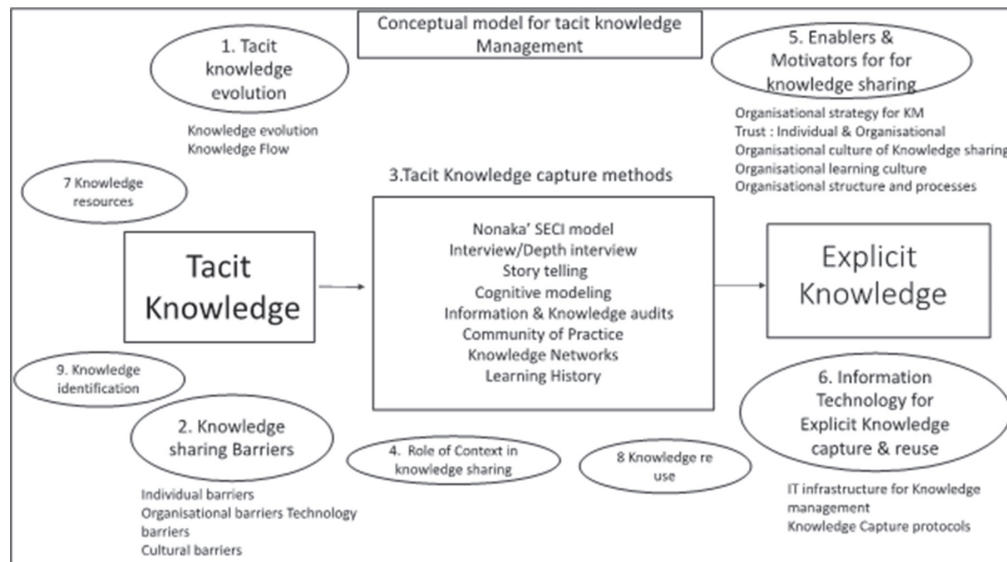


Fig. 10. Revised TKM conceptual model with the additional themes developed in the current study

## Conclusions

Knowledge management is an important journey every organization wants to take up, especially tacit knowledge management. The challenge had been a need for more structure and overall scope of TKM. The current study attempts to add themes /sub-themes, which are the elements of the TKM model, and revise the same appropriately. This is a novel contribution to the current body of knowledge. The study also uses language data processing techniques, namely, the KJ affinity method.

## Limitations and future recommendations

The research paper uses keywords from selected research papers based on PRISMA criteria. However, future researchers can use different search keywords to arrive at research papers and conduct this study. This might arrive at a new theme, and accordingly, the TKM conceptual model (Fig 10) can be continuously revised, guiding future researchers.

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