

2026

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Recommended Citation

Vaidya, R. (In press). Yoga Sutra-Based Memory Analysis of Information Systems Implementation. *Communications of the Association for Information Systems*, 59, pp-pp. Retrieved from <https://aisel.aisnet.org/cais/vol59/iss1/52>

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Communications of the
Association for Information Systems

Accepted Manuscript

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Please cite this article as: Vaidya, R. (in press). Yoga Sutra-Based Memory Analysis of Information Systems Implementation. *Communications of the Association for Information Systems*.

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Yoga Sutra-Based Memory Analysis of Information Systems Implementation

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Abstract:

Memory, the human capacity to retain past experiences, is an important construct in the behavioural analysis of information systems. However, current IS research only focuses on team memory in the context of organisational transactions and processes. An excessive focus on team memory has led to the overlooking of individual factors that enhance memory. It is important to theorise memory in IS because only through theorisation can both researchers and the researched become aware of memory-based biases. Additionally, the current theorisation of memory is largely based on a Western approach, whereas the bulk of the world's population resides in the Eastern regions and conceptualises memory differently. This paper introduces the concept of memory as discussed in the Yoga philosophy. It introduces core yoga concepts related to memory and presents an analytical framework for yoga-based behavioural analysis of information systems implementation. The framework is then applied to an existing study on agricultural marketing information systems. The Yoga framework reveals that Samskara – the subliminal impressions – are related to the feelings of unpleasantness associated with stakeholder experiences. To explain the English equivalents of the Sanskrit terminologies used in the Yoga Sutra, I utilise the Monier-Williams Sanskrit-English Dictionary, published in 1872.

Keywords: Yoga, Information Systems, Memory, Behavioural Analysis, Samskara.

[Department statements, if appropriate, will be added by the editors. Teaching cases and panel reports will have a statement, which is also added by the editors.]

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This manuscript underwent [editorial/peer] review. It was received xx/xx/20xx and was with the authors for XX months for XX revisions. [firstname lastname] served as Associate Editor.] or The Associate Editor chose to remain anonymous.]

1 Introduction

Memory is a useful tool in everyday life. Our real-world behaviour can be seriously impacted in the absence of a good memory. Memory is conceptualised as an experience-dependent cognitive ability of humans by which they encode, store and recollect the encountered situations and incidents (Colaço, 2022; Squire, 2009). Memory can be studied as a scientific concept that focuses on the neurochemical and biological processes within the brain, or it can also be studied as an interactive concept between organisms and their external environment (Zlotnik & Vansintjan, 2019 p. 4). It is defined as an “experience-dependent modification of internal structure, in a stimulus-specific manner that alters the way the system will respond to stimuli in the future as a function of its past” (Baluška & Levin, 2016 p. 2). This study examines how memories of the social context influence stakeholders' behaviour and their use of information and communications technology (ICT). It introduces a yoga-based framework as an alternative behavioural and epistemological framework for understanding how the accumulated experiences and impressions shape the stakeholder engagement with information systems.

The information age is characterised by devices that serve as alternative repositories of human memory. An over-reliance on such devices has health and privacy implications, and therefore, it is essential to identify strategies and methods that enhance human memory (Călinescu, 2024; Fernandes et al., 2018). Such an effort requires a better theorisation of memory that takes into account the context in which ICTs are used (Storm & Soares, 2024 p. 4) as the act of remembering is closely tied to the social context (Duman & Wang, 2025; Li et al., 2024; Vredeveltdt & de Bruïne, 2022; Wang, 2021). ICTs provide a material realm for the theorisation of memory because portrayals from the past get mingled with the use of technology (Blagoev et al., 2018 p. 1774). Empirical studies have called for ICT designers to consider memory as an important user characteristic that influences the use of information technology (Zhao & Gao, 2026). ICTs play an important role in converting long-term memory into working memory so that it can be used in everyday practices (Alobaid, 2022 p. 540). The estimates of the time spent on ICTs are related to human well-being and are impacted by memory (Sewall et al., 2020). ICTs renders some types of memories stronger (Choi et al., 2021 p. 5; Drigas et al., 2015; Drigas & Ioannidou, 2013; Small et al., 2020) and offset the cognitive cost of interacting with modern information technology, such as AI (Boulos, 2024 p. 9). On the other hand, excessive ICT use results in phenomena such as “digital dementia”, memory loss and other cognitive disorders (Boulos, 2024; Shanmugasundaram & Tamilarasu, 2023 p. 03). Memorising is an important strategy for developing metacognitive skills, and people who use memory-based strategies are better able to utilise ICTs to achieve their objectives (Lin et al., 2024 p. 280).

Within ICT for Development (ICT4D) research, the study of the relationship between memory and information technology is gaining traction. The evidence comes from studies that examine the affordances of memory and its relationship with ICT (Chatterjee et al., 2015; Ünlüsoy et al., 2022; Valbø & Sanner, 2022; Wang & Lim, 2021; Yoon & Zhu, 2022; Zhao & Gao, 2026). Another piece of evidence is the growing body of literature that makes a reference to collective memory and its relationship with ICT (Abessolo et al., 2024 p. 2; Díaz Andrade et al., 2021; Hanrahan et al., 2021 p. 8; Lin & Jia, 2026 p. 344; Manca, 2021; Sabie et al., 2020; Thapa & Andrade, 2024). Also, empirical ICT4D studies frequently use memory-related words (such as “remember”, “recall”, “retrospect”, etc.), but very few problematise the importance of memory in ICT research (Sayago et al., 2013). An analysis of 30 ICT4D studies spanning 2000 to 2025 in which memory-related words occur across 56 instances (Table 1) suggests that these words are used for four purposes. The first purpose for using memory-related words in ICT4D research is to help readers recall aspects of ICTs that are important for contextualising the research (Gössling, 2020; Gudmundsdottir & Hatlevik, 2018; Heffernan et al., 2016; Saa-Dittoh, 2025; Samoilenko & Osei-Bryson, 2021). For example, Samoilenko and Osei-Bryson (2021 p. 24) mention “It is also useful to *remember* that...the mobile phones would continue remaining the most popular and frequently used ICT artifact”. Similarly, Heffernan et al. (2016 p. 914) remind the readers about the subjective notions of development and mention “Indeed, it is important to *remember* that development itself is a loaded term”. A second way in which memory-related terms are used in ICT4D research is to present the memories of ICT4D stakeholders, such as students, political refugees, teachers, retailers, travellers, and rural residents. These memories are presented either as quotes from stakeholders or as analytical statements by the author (Adarkwah, 2021; Hakkarainen et al., 2000; Marston et al., 2019; Molony, 2009; Ndibalema, 2014; Nedelcu & Wyss, 2016; Schreurs et al., 2017). For example, Adarkwah (2021 p. 1674) quotes the university students who were using the Zoom application as “Online learning is quite expensive...I *remember* my first Zoom class was not more than 30 minutes, and 400 megabytes was already gone”.

Nedelcu and Wyss (2016 p. 207) present an analytical statement to describe the remembrances of the political refugees: “All eight of the political refugees we interviewed ...*remember* what huge difficulties they experienced in trying to keep in touch with their relatives in Romania”. A third purpose of using memory-related words is to remind readers of the research methodologies, such as explicating the research aims, questions, strategy, data collection techniques, and variable importance (Akinboade et al., 2022; Hall et al., 2013; Samoilenko & Osei-Bryson, 2023). For example, Samoilenko and Osei-Bryson (2023 p 541) mention “The reader would recall that the aim of this study was to do a context-sensitive exploration of the...paths that involve investments in ICT and their socio-economic impacts”. Lastly, the authors use memory-related words to highlight the problems posed by memory loss in implementing ICT4D projects for vulnerable stakeholder groups, such as the elderly. Sayago et al. (2013), highlighting the importance of memory, present many quotes from the older participants. For example, the author mentions, “This exemplary comment illustrates the perceived problems in *remembering*, which made ICT learning difficult for them. It also highlights their intelligent strategy for coping with those problems, i.e., completing notes while still remembering things, and reading and editing notes later on to remember them” (p. 536). As shown in Table 1, only one study attempts to theorise memory per se, and only one study (Sayago et al., 2013) discusses the problems posed by the lack of memory in ICT implementation.

Table 1. Distribution of the Purpose of Memory-Related Words in ICT4D Studies (2000 – 2025)

Memory-related Themes	Counts
Recalling the research aims and methodologies for the readers	6
Remembrances of aspects/trends of ICT research	15
General reference to memory	3
Memory facilitation using IT devices (computers, etc.)s	2
Presentation of participant memories (interview participant).	14
Problem posed by the lack of memory in ICT Implementation among older stakeholder groups	10
ICT research-related remembrances from the literature review	3
Recalling the ICT4D research project related details	1
Secondary reference to participant memory	1
Theorisation of memory	1
Grand Total	56

It is important to better theorise the interactions between ICTs and memory because it is only through theorisation that both researchers and the researched can become aware of the memory-based biases and how these biases impact the knowledge-gathering mechanisms (Călinescu, 2024 p. 68). Such a theorisation is also much needed in the age of artificial intelligence and large language models, which require learning, and memory is an important component of the cognitive learning process (Zhang & Chen, 2021).

Currently, the memory theorisation in information technology research is limited to team memory in the context of organisational transactions and processes (Davison et al., 2013; Lin et al., 2012; Mell et al., 2014; Nevo & Wand, 2005; Zhang et al., 2020). A collective notion of memory assumes that memory is uniformly distributed amongst the team members, and there is no scope for theorising the individual variations in the memory (Mell et al., 2014). Apart from individual differences, there may also be variation in memory within individuals. Ebbinghaus (1913 p. 3) discusses these variations and mentions:

“How differently do different individuals behave in this respect! One retains and produces well; another poorly. And not only this comparison hold good when different individuals are compared with each other, but also when different phases of the existence of the same individual are compared; morning and evening, youth and old age, find him different in this respect”

The focus on collective memory in IT organisations poses a challenge because collective memory is often interspersed with individual and group memory, and it's difficult to distinguish between them in real-world settings (Ackerman & Halverson, 2000 p. 64). Research on collective memory systems, such as transactive memory systems, also recognises that transactive memory resides in the individual memories of team members (Yoon & Zhu, 2022 p. 255). Thus, current IT-memory research conceptualises memory

solely as a group attribute, even though individuals are core repositories of organisational memory (Nevo & Wand, 2005). Since the conceptualisation of memory also shapes research on memory (Wang, 2021), it is important to move beyond collective notions of memory and to conceptualise memory per se. The implication of ignoring the theorisation of memory per se is that questions such as how memories of the socio-economic context impact the trusting propensities of the stakeholders during information technology implementation, what roles memory plays in shaping the experiences of stakeholders (such as users, developers, and beneficiaries), and how memory relates to their knowledge-gathering mechanisms remain unanswered.

Another related limitation in current memory theorisation is that there is a lack of sufficient engagement with the different “perspectives on memory” (Foroughi et al., 2020 p. 1738). For example, the current research theorises memory on the basis of “closed organisational systems” ignoring the ways in which memories are understood in development contexts characterised by heterogeneity, moral aberrations, and political uncertainties (Coraiola et al., 2023 p. 387; Sadeghi, 2026 p. 1772). Cognitive styles and mental models are related to information systems design, implementation and their successful use (Benbasat & Taylor, 1978; Chen & Lee, 2003; Gupta & Sharma, 2025; Kloppenborg et al., 2024; McLaren et al., 2007; Müller & Antoni, 2022; Song & Wen, 2021; Thomas & Bostrom, 2007; van den Broek et al., 2021). Memory is closely related to mental models (Collins & Gentner, 1987 pp. 244-245; McLaren et al., 2007 p. 894), and therefore studying how memory is understood in different cultures can provide useful clues to the behaviour of people from other regions. It also becomes important to theorise memory on the basis of different perspectives, as unpleasant memories also limit the individual’s ability to innovate (Langenmayr, 2016 p. 25). Table 2 presents the limitations in the current ICT-Memory research.

Table 2. Limitations in the Current Memory-ICT Research.

Serial Number	Limitation	Source
1.	A better theorisation of memory is needed that considers the context in which ICTs are used.	(Storm & Soares, 2024 p. 4)
2.	ICT designers need to consider memory as an important user characteristic that influences how users use information technology.	(Zhao & Gao, 2026)
3.	Few empirical ICT4D studies problematise the importance of memory in ICT research.	(Sayago et al., 2013)
4.	Memory theorisation in information technology research is limited to team memory.	(Davison et al., 2013; Lin et al., 2012; Mell et al., 2014; Nevo & Wand, 2005; Zhang et al., 2020).
5.	There is insufficient engagement with the different “perspectives on memory”.	(Foroughi et al., 2020 p. 1738)
6.	Memory is theorised only on the basis of closed organisational systems.	(Coraiola et al., 2023 p. 387; Sadeghi, 2026 p. 1772)
7.	Memory is a complex concept with many interrelated aspects, making its theorisation difficult.	(Bechtel, 2001 p. 489; Eichenbaum, 2010)
8.	Types of memory are often used to conceptualise it, thereby inherently limiting understanding.	(Hardt & Sossin, 2020 p. 6).
9.	Memory is conceptualised differently in the Western and Eastern regions.	(Vredeveltdt & de Bruïne, 2022 p. 465)
10.	Mental model research in Information Technology has only focused on technology’s mental models.	(Müller & Antoni, 2022)

This study addresses the limitation of insufficient engagement with the different “perspectives on memory” (Foroughi et al., 2020 p. 1738) by presenting a new Yoga-based perspective on memory-ICT research that can be integrated with existing perspectives. The Yoga-based perspective is different as it integrates diverse perspectives such as moral, physical, psychological, karmic and spiritual (Whicher, 1997) and can provide an alternative behavioural and epistemological framework for understanding the experiences of different ICT stakeholders.

The Eastern regions differ from the Western regions in context and in how they conceptualise memory. For instance, various types of memories are detailed in Western conceptualisations (Eichenbaum, 2010) but are not found in Eastern ones, particularly in the philosophy of Yoga. However, these different types of memory are often interrelated (Bechtel, 2001 p. 489) and restrict the understanding of memory per se. For example, (Tulving, 1985 p. 387) mentions:

“The system at the lowest level of the hierarchy, procedural memory, contains semantic memory as its single specialised subsystem, and semantic memory, in turn, contains episodic memory as its single specialised subsystem.”

Types of memory are often used to conceptualise memory, thereby inherently limiting understanding of it (Hardt & Sossin, 2020 p. 6). Moreover, a major portion of the world's population resides in Eastern countries, and conceptualise memory very differently, putting less emphasis on autobiographical memories, unlike their Western counterparts (Vredeveltdt & de Bruine, 2022 p. 465). Furthermore, individuals tend to retain the memories that match their context, and either change or lose those “foreign” to them (Eichenbaum, 2010 p. 479).

However, the Eastern, and particularly Indian, conceptualisation of memory has found no representation in ICT research. Researchers working with local communities also feel the need to have reference materials that align with local values (Parker et al., 2019). India is a significant centre of attraction for empirical ICT research; yet, there are very few studies on India that have been analysed using local theoretical perspectives (Davison & Díaz Andrade, 2018). It is important to have representations from diverse cultures and regions, as knowledge from different cultures plays an important role in developing theoretical artefacts (Orlikowski & Iacono, 2001) and local theories play an important role in the generation of new theories and theoretical artefacts (Shepherd & Suddaby, 2017).

The ancient Indian philosophy of Yoga can be a valuable resource for theorising memory. Unlike the current information technology literature which only focuses on collective memory, the Yoga Sutras theorise not only memory per se but also the related concepts such as experience, the triggers related to memory, intelligence, knowledge, consciousness, and practices. Moreover, in Yoga, memory is discussed as a component of the eight-step pathway to meditation, thereby placing it in the context of human well-being. Some of these terms are unique to Yoga, while others align with modern psychology. For example (White, 2014 p. 50) mentions:

“...the Yoga notion of the purusa, or self as an individual consciousness, unchanging and eternal, which shines forth undimmed once all obstructing karma has been removed. Such a notion of the self seems totally foreign to modern psychology whether it be of a Lockean or Leibnitzian cast.”

Consciousness under the Western frameworks of memory can be many types, such as noetic, anoetic or auto-noetic (Tulving, 1985 p. 388) and each of these relates not only to memories but also to real-world behaviour; on the other hand, consciousness in Indian philosophy is eternal, is by itself a complete unit that has no types (Schweizer, 1993). Yoga Sutra, therefore, provide more opportunities to theorise concepts in an integrated manner.

The *Samskara* concept of the Yoga philosophy is unique, and its equivalent term is not available in the Western literature, though studies have related *Samskara* with Bourdieu's concept of *Habitus* (Bouthillette, 2026; Chandran, 2016; Grieve, 2004; Orsini & Kornicki, 2021; Urban, 2003). *Samskara* are conceptualised as ways by which individuals are integrated into the larger social fabric, and therefore, are closely related to Bourdieu's concept of *habitus* (Urban, 2003 p. 370). *Samskaras* are related to *habitus*, as both are at the root of the dispositions of people. In Bourdieu's theory of practice, *habitus* refers to strategic dispositions that are displayed by the subjects to meet the success requirements of a field (Grillo, 2018). It is a system of disposition that operates below the levels of consciousness (Rowlands, 2018). *Samskara*, on the other hand, are “latent dispositions” (Bouthillette, 2026 p. 54) that are triggered by a stimulus. While they also operate below the level of consciousness, in the higher states of meditation, a person can become aware of their own *samskara* and can overcome their influence. There are many meanings that are assigned to *samskara*, such as ‘the realising of past perceptions,’ ‘preparation’, and ‘making ready’ (Chandran, 2016 p. 366), rituals (Grieve, 2004; Novetzke, 2018) and “a certain kind of action *habitus*” (Gerety, 2018 p. 897). *Samskara* has been related to *habitus* in two ways: as “imprints of experiences” on the mind (Flügel, 2018 p. 258) and as rituals that integrate the individual into the social. In this study, the conceptualisation of *samskara* is of deep impressions on the human mind.

Given that cultural perspectives play an important role in theory building (Hassan et al., 2018; Orlikowski & Baroudi, 1991) and fostering interpretive pluralism (Pandit, 1996), the *Samskara* concept can enhance our theories of memory and its applications in information systems research. Drawing on concepts from Yoga philosophy, this paper develops a framework and applies it to analyse stakeholders' behaviour in an agricultural marketing information systems study. I analyse stakeholders' behaviour, as behavioural analysis is an essential aspect of memory research (Spear, 1984). The research question this study aims

to answer is: What kinds of experiences are reflected in the memories of ICT4D stakeholders? It is important to mention that Yoga is not introduced as a spiritual or cultural addition, but as an alternative behavioural and epistemological framework for understanding how accumulated experiences, impressions, and ethical orientations shape stakeholder engagement with information systems.

The remainder of this paper is organised as follows. The next section provides an introduction to the Yoga philosophy. The next section presents the Yoga-based conceptualisation of memory and introduces the concept of Samskara. In the next section, using the concept of Samskara, a framework is developed to analyse stakeholders' behaviour in information systems projects. The framework is then applied to an existing case study on the implementation of agricultural marketing information systems in India. The results are then discussed, and the conclusions drawn. One unique feature of this manuscript is that it presents the original Sanskrit language text on Yoga. To translate these original Sanskrit texts, I have used the Monier-Williams Sanskrit-English dictionary when no other references were available (Williams, 1872).

2 Yoga Sutra: An Introduction

If we look at the timeline of ancient Indian literature, the starting point is the Vedas. After the Vedas, numerous literary and philosophical works were composed as commentaries, critiques, and elaborations on the Vedic teachings. For example, many Upanishads discuss the teachings of the Vedas. After the Vedic literature, six Indian philosophical traditions discuss the core constructs for understanding the world, the concepts for acquiring knowledge of it, the constituents and methods of knowledge, the techniques for realising states of the self, and the use of language and the etymologies of words. The philosophical works and traditions that discuss these topics are Samkhya, Vaisheshika, Nyaya, Yoga, Purva Mimamsa, and Uttara Mimamsa. Following these six philosophical traditions, numerous other literary and historical works exist, including the Puranas, the Ramayana, and the Mahabharata. In this paper, I examine one of the Indian philosophical traditions: Yoga. An ancient Indian sage named Patanjali is credited with compiling the Yoga Sutra (YS), which laid the conceptual foundations of Yoga.

Patanjali is credited with numerous works in the fields of language and philosophy. One of his famous works is the *Yoga Sutra*, which presents the intellectual and conceptual foundations of Yoga (commonly referred to as “Yoga” in Western literature). While the physical aspects of Yoga are popular, little is known that the Yoga Sutras largely present aphorisms related to the philosophical and cognitive concepts (White, 2014). The term Yoga is rooted in the Sanskrit word ‘yuj’, which has three distinct meanings, namely to join, to meditate, or to restrain (Feuerstein, 2012; Mahlo & Tiggemann, 2016). These aphorisms are supposed to have been compiled during the first and the second centuries of the current era (CE) and include 195 aphorisms (Chapple, 1994). Authors have acknowledged that the *Yoga Sutras* were “handed over” from earlier generations and had existed much before Patanjali (Melasecchi, 1980). Many philosophical studies have compared Patanjali’s Yoga Sutra with Western philosophers (Godrej, 2017; Gold, 1996; Odorisio, 2015; Pines & Gelblum, 1983). Lately, organisational and management research has found that the practice of yoga helps to reduce interpersonal conflicts and is helpful for developing pro-social behaviour and positive emotions (Dagar et al., 2025; Morris et al., 2024). Yoga practices are connected to the biological as well as the psychological mechanisms of the human body and are helpful in stress reduction (Cahn et al., 2017; Riley & Park, 2015). Yoga practices also contribute to the self-esteem of people, as people who practice yoga have a more positive body image (Mahlo & Tiggemann, 2016). While the physical aspects of Yoga have received traction worldwide (for example, the plethora of breathing exercises and body postures), its psychological and philosophical aspects remain unknown to the people (Godrej, 2017; Morris et al., 2024).

The Yoga Sutra of Patanjali is available in Sanskrit, and many ancient scholars have written commentaries (popularly called bhashya) on it. One well-respected bhashya is attributed to an ancient Indian sage named Vyasa (White, 2014 p. 9). This bhashya is in Sanskrit and was compiled in the fifth century CE (Chapple, 1994). Some authors attribute the Vyasa bhashya to the Seventh or the Eighth Century CE (Melasecchi, 1980). In the Vyasa bhashya, the etymologies of the Sanskrit words are presented, along with explanations of the Sutras. The word-by-word translations of the Vyasa bhashya are available in both Hindi and English. I refer to the original Sanskrit Sutras in this paper and interpret them using the Vyasa bhashya. In the next section, I describe the **core** concepts of Yoga and propose their application to the study of the behavioural aspects of Information Systems implementation.

3 Concept of Memory in the Yoga Sutra

Chitta is a central construct in Patanjali's Yoga Sutra. In a general sense, and in everyday use, chitta refers to the human mind (Balslev, 1991) and therefore, this manuscript refers to the term 'mind' to make a reference to the chitta. The yoga sutras present a detailed description of the different tendencies of the mind, and one of these tendencies is smriti (i.e., memory). In the Yoga Sutra, memory is defined as Anubhūta Viśaya Asampramōṣa, i.e., not forgetting the experienced subject. Additionally, the Yoga Sutra puts forth the concept of Samskara to elaborate on memory. The next subsection describes the Samskara concept as it relates to memory.

3.1 Memory and Samskara

Cognitive styles and mental models have historically played an important role in the design of information technology artefacts (Benbasat & Taylor, 1978; Müller & Antoni, 2022; Thomas & Bostrom, 2007). IT stakeholders are constrained not only by the contextual or organisational factors but also by their own cognitive styles (Chen & Lee, 2003). Deep impressions play an important role in the development of mental models, as mental models are based on "imagistic descriptions" that help create "envisionment" about the possible trajectory of an action, activity or event (Collins & Gentner, 1987 pp. 244-245). It is important to study these impressions in the IT context, as IT artefacts such as social media and websites influence people's impressions (Gupta & Sharma, 2025; Song & Wen, 2021). Such impressions "have the introspective feel of manipulating images" (Collins & Gentner, 1987 p. 246). Therefore, images, impressions and beliefs are all linked together in the mental models (McLaren et al., 2007 p. 894) and their alignment with the system architecture is important for system success (Kloppenborg et al., 2024; McLaren et al., 2007; van den Broek et al., 2021).

In the Yoga philosophy, the term for mental impressions is *Samskara*. Memory is known to be a manifested construct, as it can be expressed (Spear, 1984). Given that it is a manifested construct, the subtle, unmanifested aspect of memory is called *samskara*. It is a deep impression on the mind and the root of the memory. Whicher (2005 p. 601) describes *samskara* as:

"In classical Yoga every action (karman) leaves an impression (samskara) in the deeper structure of the mind (citta) where it awaits its fruition in the form of volitional activity..."

Samskara relate an experience to its memory, and the concept can be useful for studying the formation of mental models and how different types of memory, such as context, stakeholders, culture, or history, impact the implementation of information technology. The Yoga Sutra that describes the relationship between *samskara* and experience is "*Yatha Anubhav Tatha Samskara*", i.e., as the experience is, so is the *Samskara*. According to the Yoga Sutra, experience has two components of knowledge: first, the knowledge of the thing (the object of knowing), and second, the self-awareness of knowing. When these two components are present, a *samskara* is created in the mind. The original Sanskrit sutra that describes the *samskara* as inclusive of the object and the self-awareness of knowing the object is presented in the Yoga sutra, as:

"Grahya Uprokt Pratyay Grahya Grahan Ubhayakaar Nirbhaasah Tad Jaatiyam Sanskaaram Aarabhyate".

The sutra states that when the knower gains knowledge of the object and simultaneously becomes aware of knowing, the *Samskara* related to that object is created. Figure 1, pictorially, presents the idea of the creation of a *samskara*.

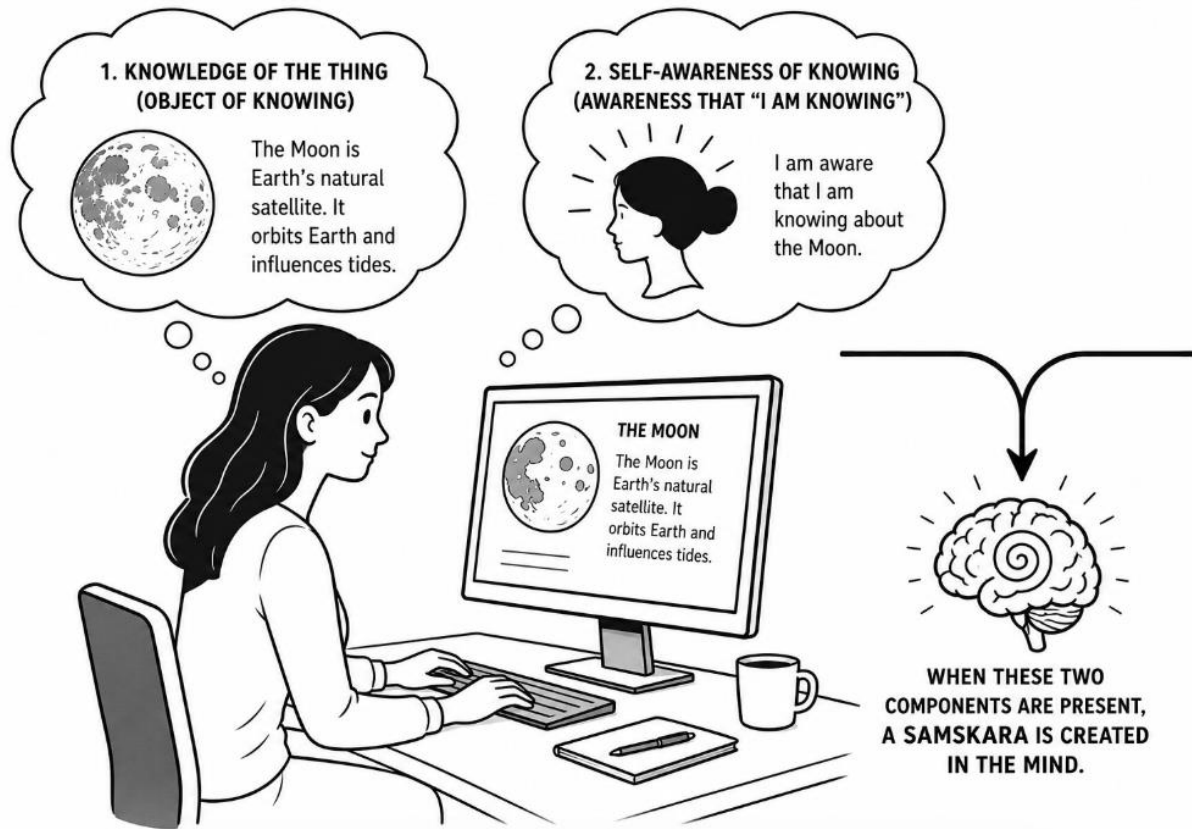


Figure 1. Yoga-based Behavioural Cycle (This illustration was generated using ChatGPT Version 5.5, Date: 3 June 2026)

Contemporary literature on memory and digital technology also draws this distinction between knowing the object and the self-awareness of knowing, acknowledging that memory is closely associated with reflexivity (Cadamuro et al., 2019; Lin et al., 2024; Matook et al., 2024; Özkul & Humphreys, 2015 p. 352; Schwartz et al., 2004). In the context of AI and large language models, the self-awareness of knowledge becomes an important issue, as without such knowledge, AI tends to hallucinate. One reason for such hallucinations is that the relationship between self-awareness and knowledge is poorly conceptualised in current AI research (Seo et al., 2025). In Western frameworks, self-awareness of knowledge is studied under the subject area of *metacognition*, i.e. “*thinking about thinking*” (Bowler & Mattern, 2012 p. 250). Within ICT research, metacognition models are related to the constructs of self-confidence and belief, enthusiasm and drive, a goal-oriented approach, and volition and independence (Matook et al., 2024). Following the Yoga framework, samskara plays an important role in meta-cognition. Since samskaras are deep impressions, self-awareness of one’s samskaras can also be an important metacognitive construct to be added to the existing conceptualisation of metacognition. Therefore, integrating the Western and Yoga-based samskara constructs can enhance our understanding of metacognition. The sequence of creation of samskara is “First an Anubhava (experience), next a samskara, and then a smriti (memory)”¹ (Woods, 1927 p. 95). The triggers that can convert a samskara into memory are called Alambana, which is briefly discussed in the next sub-section.

3.2 Samskara and Alambana

Alambana refers to externalities, triggers that induce a particular behavioural response in people. It is similar to “stimuli” in the Western framework of memory research (Bordalo et al., 2020 p. 1401). Wayman (1979 p. 67) mentions that “there is no denial of an alambana in the meaning of a sense object”. Thus, alambana corresponds to the externality that triggers a behaviour. Alambana is essentially a “supporting-object” (Woods, 1927 p. 43) that triggers a samskara. An alambana is the overall landscape of the

¹ The *italics* have been added by me as the original words (‘Anubhav’ and ‘Smriti’) are in Sanskrit.

experience, including its contents (participants, objects, settings, etc.), which yields a samskara, which in turn yields a memory. The memory then prompts a behaviour.

4 Yoga-based Behavioural Analysis Framework

The cycle of samskara and its relationship with behaviour is presented in Figure 2. Stakeholder excerpts can be analysed for the memories they represent. A larger occurrence of happiness or sadness in the stakeholder excerpts will indicate that embedded in these memories are the “subliminal” samskara that reflect the user experiences. Thus, the self, the senses, experience, memory, and samskara intertwine to shape a person's behaviour. The human mind is replete with samskaras, which result in fruition when the appropriate circumstances arise (Whicher, 2005). Figure 2, therefore, presents a yoga-based behavioural analysis framework for analysing stakeholder behaviour (users, developers, beneficiaries, etc.). It also presents the core Yoga concepts of this research: Alambana (trigger), Anubhav (experience), Samskara (impressions), and Smriti (memory).

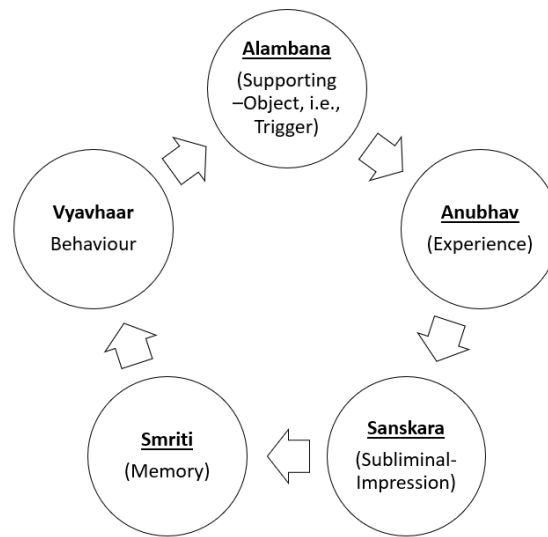


Figure 2. Yoga-based Behavioural Cycle

One example of IS research in which these mental impressions play a vital role in influencing the stakeholders' behavioural choices comes from Li et al. (2009), who describe how online search influences the formation of travellers' tourism destination image (TDI). TDI is a widely studied concept in tourism research and is defined as “the visual or mental impression of a place, a product, or an experience held by the general public” (Li et al., 2009 p. 46). This study used a mixed-methods approach to collect data from 30 participants. The formation of the tourism destination image is an iterative process that starts with a baseline impression of the destination held by the subject, which is refined with additional pre-travel information (such as online searches) and further refined after visiting the destination. These impressions can be acquired organically over a lifetime through non-commercial sources such as news, or induced by commercial advertisements. According to Yoga theory, these impressions, irrespective of their source or type, all form samskara if the subject is aware of having obtained them. The Yoga Sutra classifies these samskaras into those that bring happiness and those that bring sorrow. The alambana here refers to the externalities that prompt a subject to visit a destination or to conduct an online search to acquire more information about it.

Another example that focuses on alambana comes from the study of the implementation of the Casemix health information system in a New Zealand hospital (Doolin, 2004 p. 352). The data for this qualitative study were collected from various stakeholders, including medical consultants, nurses, and management representatives. The study discusses the medical staff's resistance to the information systems, as they felt that the implementation was preventing them from performing their core function of patient care. In the study (Doolin, 2004 p. 352) presents the following quote from a corporate manager:

“[Doctors] don’t like this monitoring business. They don’t mind doing it themselves in their own peer group, but they don’t like managers and analysts saying ‘Hey, why are you doing this, why are you doing that?’...I guess it’s just their culture, their professional culture – that they’re clinicians and managers shouldn’t be telling them how to treat their patients”.

In the above quote, the fact that the doctors wouldn’t mind monitoring “in their own peer group” but wouldn’t like it by “managers and analysts” suggests the role *alambana* plays in triggering a behavioural response. While the doctors would not mind monitoring in their peer group, they would desist it in another group of “managers and analysts”. These two settings are two different *alambana* that evoke different responses, based on the mental impressions (*samskara*) doctors have of the different stakeholder groups.

5 Example of Application of the Yoga Sutra Framework

To assess the application of this framework, it was essential to identify a study that met two criteria. First, the study should be based on an Indian IS project. Second, the study should be empirical and present interview excerpts that could be analysed. I have chosen the study (Vaidya & Myers, 2021) as it met these criteria. The case study concerns an agricultural marketing information technology project implemented in India. In India, wholesale agricultural commodities are traded at state-controlled market yards, commonly referred to as *mandis*. These yards are in districts, and typically, there is a central yard with some sub-yards situated at various locations within the district. Farmers from the nearby villages bring their commodities to the yards where the traders accumulate. Government officers oversee the auctions of commodities, and the yard governing committee receives a percentage of the trade from traders to cover the various yard facilities. The farmers in the yards are the least powerful stakeholder group, and the trade transactions at the yards impact their emotional and psychological well-being (Vaidya & Myers, 2022). Furthermore, there are also price discrepancies across these yards. In 2008, the state government implemented an information technology project that would connect the yards using VSAT technology. The project’s rationale was that the interconnectivity between the yards would reduce the price discrepancy. The project’s overall purpose was to help the farmers get fair prices for their agricultural commodities. A private vendor company undertook technical implementation. The farmers, the government officers (who had administrative control over the markets), and the traders were the main stakeholder groups in the case study. The analysis of the case study was based on Bourdieu’s theory of practice. One important result from the study was that the *habitus* requirements of the information technology field differ from the current *habitus* of the stakeholders. Other information systems researchers have also analysed the same case study or its related publications (Masiero, 2023; Singh et al., 2018).

Before detailing the data collection and analysis, I describe the hermeneutic textual analysis method I followed in this study to understand the Yoga Sutra. Analysis of textual data using a qualitative approach falls under the methodological category of hermeneutics, which can be undertaken with the objective of understanding, such as in objective hermeneutics or critically analysing, i.e. critical hermeneutics (Wodak, 2011). It is particularly useful in providing new knowledge and a fresh perspective on phenomena of interest (Frazier, 2008). My objective was to understand the Yoga Sutra, and in the first step, I started looking for the original Sanskrit language text of the Yoga Sutra with the commentaries of the ancient Indian sage Vyasa, i.e. popularly called as Vyasa *bhashya*, which is considered the most authentic interpretation of the Yoga Sutra (Chapple, 1994; Feuerstein, 1987). The manuscript I referred to was compiled by Shrivastava (1988) and included all 195 original Sanskrit Sutras, their Sanskrit-language interpretations by Vyasa, and subsequent translations into Hindi. I started reading the text and taking extensive notes on my mobile phone. Overall, I manually created 1,252 annotations of the Sanskrit Sutra, along with notes explaining it. Note-making, thus, was my preferred means for understanding the Yoga Sutras. This took approximately a year to complete the full text of the Vyasa *bhashya* and to create the notes. In Figure 3, I provide a screenshot of my notes in the Microsoft Word application (originally created on my mobile phone and then exported to Microsoft Word).

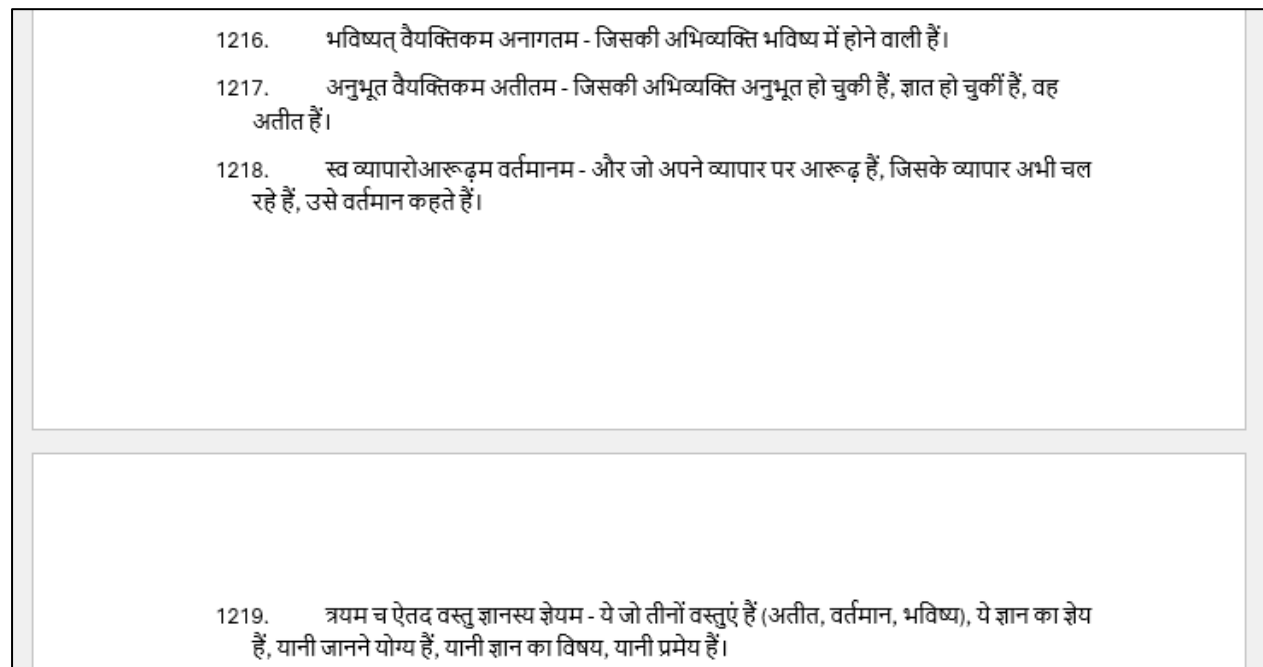


Figure 3. Screenshot of the full Yoga Text Notes

Since the total number of annotations was high, after exporting these notes in MS Word, I manually started identifying the annotations where the 'samskara' (i.e., Sanskrit word संस्कार) was mentioned in the original Sanskrit sutra or in my notes. There were some Sutras where the samskara term was mentioned in the sutra, but the immediately following sutra did not mention the term samskara. For example, in Figure 4, annotation 34 presents the term "samskara" (highlighted text) and discusses it, while annotation 35 does not include the term "samskara" but continues the discussion of "samskara". Therefore, while creating the samskara-specific notes document, I re-read the preceding and succeeding annotations.

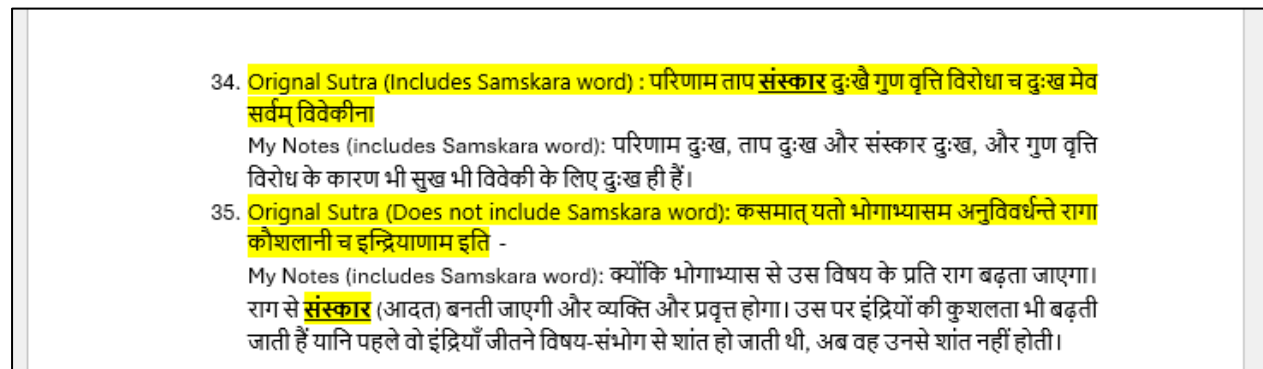


Figure 4. Screenshot of the Samskara-related Notes

In this way, I was able to compile all my notes into separate Word files, organised by theme, which were discussed in the Yoga Sutra.

5.1 Data Collection and Analysis

Using past study data to provide more informed insights into the research phenomenon is a common practice in ICT4D research, and many studies have used past data to reveal new aspects of the research phenomenon (for example, Thapa & Sein, 2018; Thapa et al., 2012). The data in the study were collected through semi-structured interviews. The interviews were conducted at six trading yards. Twenty-three semi-structured interviews were undertaken with the four stakeholder groups: government officers, farmers, private vendor employees, and traders. The importance-influence criterion of the stakeholder theory was used to identify these stakeholder groups (Bailur, 2007). Studies in agricultural marketing

suggest that farmers, traders, and government officials are important stakeholders (Meenakshi & Banerji, 2005). Also, traders are the most influential stakeholders in agricultural marketing (Molony, 2008). The data in the case study were analysed using thematic analysis and the constant comparative method (Boeije, 2002; Braun & Clarke, 2006). The major themes identified in the case study are detailed in the case study and include the themes of *stakeholder practices*, *trust issues between stakeholders*, *negative perceptions about other stakeholder groups*, *habitus of government employee*, *habitus of farmers*, *habitus of traders*, *major problems in the yard field*, *major problems in the IS implementation field*, and *general perceptions about the Indian society*. The theme “negative perceptions about the other stakeholder groups” was a major thematic category in the stakeholders' narratives. I apply the yoga sutra framework to the memory-related excerpts presented in the case study. The case study presents data from 23 participants across the four stakeholder groups, collected through semi-structured interviews.

I reviewed the excerpts presented in the case study and mapped them to the core components of the Yoga framework (Figure 1). In Table 3, I present the criteria for this mapping. The table relates to the operationalisation aspect of the core components of the Yoga framework. It is a conceptual table that shows how the abstract Yoga concepts are translated into analytical categories.

Table 3. Criteria for Mapping the Excerpts in (Vaidya & Myers, 2021) with the Core Yoga Framework Components

Component	Criteria Description
Alambana (Trigger/Stimuli)	Alambana refers to prompts that evoke memories. For example, the researcher's questions prompt the interviewee to evoke these memories. Therefore, the researcher serves as the prompt that evokes memories.
Anubhav (Experience)	Anubhav or experience brings feelings of Happiness or Sadness. This criterion is based on the Yoga Sutra's concepts of Raag and Dwesh. The Yoga Sutra mentions: - Sukhanushai Raag, i.e. experience of happiness, bring feelings of attachment. - Dukhanushai Dwesh, i.e. experience of sadness, bring feelings of repulsion. According to Yoga philosophy, an experience becomes memorable when associated with happiness or sadness, leading to behaviour of attachment or repulsion.
Smriti (Memory)	Smriti or memory as narrated by the stakeholder group representative. It can be identified by the words in the excerpts that indicate the past, such as “In earlier times...”, “in the earlier system...”, etc.
Samskara (Subliminal Impressions)	Samskara is a subliminal impression formed when knowledge of the object and self-awareness of knowing the object are both present. Therefore, a Samskara represents all the objects (including location/space, time, physical settings, people, their behaviour and dispositions, observations, etc.) in which these two types of knowledge are present within a situation, event, or phenomenon. If memory is a recollected episode, then Samskara is each frame within that episode where both the object knowledge and the awareness of knowing are present.

The length of each excerpt in the case study ranged from slightly over twenty words to over two hundred words. Therefore, given the space constraints, I have provided the excerpts briefly. Full excerpts are available in the case study. In Table 4, I provide a mapping of each excerpt to the **core** components of the Yoga framework. As an example of the mapping, consider the following excerpt from one stakeholder group representative (the private vendors who implemented the IS):

“In earlier times, the farmer would stand for hours altogether with the accountant of the trader. The accountant would keep him waiting for hours.”

In this excerpt, the alambana (trigger) is the researcher – the trigger that prompts a response. The memory is indicated by the words “In the earlier times, the farmer would stand for hours altogether with the accountant of the trader”. The samskara (subliminal impression) is indicated by constituents of the memory where both the knowledge of the object (event or situation in this case), and the awareness of knowing are present. Therefore, samskara here includes all the constituents that fulfil this requirement and could include the physical settings of the trader warehouses/shops, the people that occupy it, the dispositions of these people, etc. If this entire memory event is imagined as a movie, then samskara forms each frame in which the knowledge requirement is fulfilled. Thus, a particular memory episode can be associated with very many samskara. Anubhav (experience) is the overall feeling (happiness/sadness) generated by this memory. The memories were identified based on specificity: specific recalls of past incidents were considered specific memories (Garoff et al., 2005). Words indicating that the acquired experience was from the past, such as “In the earlier time,” etc., were used to identify specific memories.

Using this scheme, I identified seven excerpts that captured the stakeholders' memories. Table 4 presents these seven excerpts. The excerpts are only briefly presented due to space constraints. In the Next section, I discuss the results from this mapping.

Table 4. Brief Excerpts from (Vaidya & Myers, 2021) mapped to the Core Yoga Framework Components

No.	Smriti (Memory)	Stakeholder Group	Alambana (Trigger)	Samskara (Subliminal Impressions)	Anubhav (Experience)
1.	In 1998, the yard secretary...	Government Officer	Researcher, i.e. situation involving the researcher and the researched	The constituents of this memory (such as location, time, the physical settings, the people, their dispositions and behaviour, observations, etc.)	Apathy (Sadness)
2.	In earlier times, the farmer...	Private Vendor	Researcher, i.e. situation involving the researcher and the researched	The constituents of the setting in which the trader interacts with the farmer (such as the trader's warehouse/shops, where the farmer would wait)	Apathy (Sadness)
3.	That yard was full of middlemen...	Government Officer	Researcher, i.e. situation involving the researcher and the researched	The constituents of the memories related to membership of the special team	Middlemen Trade
4.	In the earlier system...	Government Officer	Researcher, i.e. situation involving the researcher and the researched	The constituents of the memories related to the traders' submission of period statements	Manipulations /Treachery (Sadness)
5.	We have recently received...	Private Vendor	Researcher, i.e. situation involving the researcher and the researched	The constituents of the yard processes related to the issuance of documents in a trade transaction using computers	Lack of trust (Sadness)
6.	The government officer there is already a bribed person...	Farmer	Researcher, i.e. situation involving the researcher and the researched	The constituents of the auctioning process at the yard	Corruption (Sadness)
7.	I will give an example ...	Government Officer	Researcher, i.e. situation involving the researcher and the researched	The constituents of the Human Resource Management (Salary Disbursement) related transactions at the yard using computers	Manipulations /Treachery (Sadness)

6 Results

Following the Yoga-based framework, I examine excerpts in which the stakeholder groups present their memories. Of the twenty-four excerpts given in the case study, only seven related to memory. The remaining seventeen excerpts were not related to memory. However, these seventeen excerpts included general observations about yards, such as one private vendor employee mentions: "Farmers are very cunning. Sometimes we consider that farmers are simple people. We assume that they are simpletons, but they are extremely shrewd." Such an observation may or may not be based on one's own experiences. For example, the private vendor employee here may simply be echoing what has been heard from seniors or colleagues. Thus, specific memories indicate that the respondent has first-hand experience of the phenomena. In the seven excerpts related to memory, I focus on whether they generally evoke experiences (Anubhav) of happiness or sadness; that is, whether they indicate pleasant or unpleasant memories.

The seven excerpts on memory were from the three stakeholder groups: government officers (04 excerpts), private vendors (02 excerpts), and farmers (01 excerpt). As a group, the government officers' memories were largely about organisational processes. For example, the following two excerpts were

from two different government officers, and both were related to experiences of the organisational processes:

- “In 1998, the yard secretary, assistant secretary...were directly brought under the board services. However, the temporary employees, such as...were not absorbed by the board and were left with the yard committees” (GO4, Vaidya & Myers, 2021 p. 5)
- “I will give an example of the things that they (private vendor) do. There is a module in their software for the salary records of the employees...The private vendors wrote us a letter asking that we should provide them the required information...This meant that we should provide them the data in a specific format and implied that we first do the data entry...(GO2, Vaidya & Myers, 2021 p. 10)

The words “In 1998...” and “The private vendors wrote us a letter...” indicate that both excerpts relate to the government officers' memories of organisational processes and how these processes constrained their work activities. The interview situation was the *alambana* that revoked these memories, and the *samskara* were the impressions arising from these experiences of the government officers. These impressions could be about the apathy of the higher authorities who had “left with the yard committees” the temporary employees, or the tricks that the private vendor employees played with the government officers “I will give an example of the things that they (private vendor) do”. The government officers were a powerful stakeholder group. The fact that their experiences were related to organisational processes leads to the proposition that powerful stakeholders' impressions are related to organisational processes. The memories of the private vendors, on the other hand, were either about the exploitation of poor farmers by other powerful stakeholders or about the government board's distrust of them and its failure to let computerisation achieve its full potential. For example, the two private vendors mentioned:

- “In earlier times, the farmer would stand for hours altogether with the accountant of the trader. The accountant would keep him waiting for hours...” (PV1, Vaidya & Myers, 2021 p. 6)
- “We have recently received a directive that the entry slips should be issued from the computers only...but the board has not allowed the same for auction slips. The board does not trust us...” (PV3, Vaidya & Myers, 2021 p. 9)

The *alambana* in the case of memories of the private vendors was also the interview situation that revived these memories, and the *samskara* were the impressions arising from these experiences. These impressions could be about stakeholder groups, such as accountants who “would keep him” (i.e., the poor farmer) waiting for a long time, or about the board (i.e., government officers) who would not trust private vendors. Therefore, the impressions of private-vendor employees support the proposition that, over the course of an ICT4D project's implementation, distrust is likely to develop between the vendors and the government organisation in which the project is implemented. Another proposition is that private vendors implementing such projects have opportunities to reflect on the behaviour of the powerful (government boards/officers) as well as powerless stakeholders (farmers).

In Table 5, I present a limited number of excerpts (three) from Vaidya and Myers (2021). As shown in the excerpts, the stakeholders' memories convey feelings of malpractice by other stakeholder groups. In the current case, the use of words such as “farmer would stand for long hours”, “the accountant would keep him waiting,” and “manipulate the price,” etc., indicates that the stakeholders have experiences of unfair trade practices. The excerpts from stakeholders are replete with such memories and convey experiences of sadness, rather than happiness. Therefore, stakeholders have *unpleasant* memories, and the *samskara* – subliminal impressions – in this project are related to unfair (trade) practices. If there are more instances of unfair practices, these should also be reflected in the stakeholder excerpts. Upon reviewing the excerpts in the case study, I found that several unfair practices have been mentioned by the stakeholders. I have tabulated these in Table 6. As shown in Table 6, the stakeholders present very specific malpractices. One result of the case study is that stakeholders have greater exposure to unfair practices and can therefore recall the specific ways in which they are carried out. In the Yoga-based framework (Figure 1), *samskara* shapes people's behaviour. It is likely that greater exposure to unfair trade practices embeds the *samskara* of unfair behaviours. Thus, greater exposure to unfair trade practices poses a significant challenge to implementing information systems in developing countries and may require changes that extend beyond the scope of information systems.

Table 5. Example Excerpts on Stakeholder Memories in (Source: Vaidya & Myers, 2021)

Stakeholder	Excerpt
Private Vendor Employee (PV1)	In earlier times, the farmer would stand for hours...The accountant would keep him waiting for hours
Government Officer (GO4)	That yard was full of middlemen.
Government Officer (GO4)	In the earlier system...the trader would correctly present the commodity purchased, but manipulate the price

Table 6. Examples of Excerpts on Unfair Trade Practices (Source: Vaidya & Myers, 2021)

Stakeholder	Excerpt	Page number (Vaidya & Myers, 2021)	Category of Unfair Trade Practices
Private Vendor Employee implementing IS (PV5)	"the trader can pay the weight certificatory a few rupees. For example, he might certify that the commodity weighed was 20 quintals, while in actuality, it may be 35 quintals".	Page Number 9	Bribing
Farmer (FA2)	"As per the rules, labourers have to weigh the commodity...but they do not do the entire work. Also, look at the tricks of traders; in weighing, they consider the weight of 91.2 kilograms as equivalent to 90 kilograms".	Page Number 10	Overlooking rules and regulations, data manipulations
Trader (TR1)	"...we have been submitting the records as per our convenience".	Page Number 10	Overlooking rules and regulations
Government Officer (GO2)	"The trader would correctly present the commodity purchased but manipulate the price."	Page Number 6	Data Manipulation (i.e. Price Manipulation)

There are many other excerpts in the case study that indicate that the overall context of the trades at the yard is also unpleasant. For example, farmers form the largest stakeholder group, and to provide context for their perspective, the case study presents two excerpts. First, "A farmer typically travels a long distance to reach the yard", and second, "After the weighing, if there are no conflicts on commodity quality, the trader makes the payment to the farmer" (Vaidya & Myers, 2021 pp.5-6). Such unpleasant experiences shape farmers' behaviour. For example, one farmer mentions that in order to deal with a very exploitative context, he uses "patience", to overcome these feelings of exploitation - "So we have to exercise patience in all such situations, else the payments will be delayed" (Vaidya & Myers, 2021 p. 21). This excerpt is taken from a larger excerpt in the case study where the farmer recalls a specific incident of weight manipulation by the traders. Since the farmers cannot do much about the weight manipulations by a powerful stakeholder group, they learn to be patient in the face of such malpractices. The overall trade experience yields many deep impressions about the traders, the weighing process, etc. In other words, stakeholders in the case study are exposed to the samskaras of unfair trade practices and patience, and, depending on the alambana, these samskaras trigger their behaviour. Similarly, the experiences of government officers reveal the unpleasantness of their daily work at the yards. For example, one government officer (GO2) mentions, "Any person is free here to behave the way he wants to...they can spit anywhere...at the yard, we keep spitting from our windows". A person who experiences such behaviour develops a samskara of it in the form of deep impressions and unpleasant imagery. Apart from the unpleasantness of the imagery, there is also some discomfort with the pace at which organisational activities must be performed, as one excerpt from the government officer in the case states, "the working for us was too hectic". Similarly, there is some unpleasantness about the organisational capacity indicated

through excerpts such as “We do not have enough staff for our own work”; and “the operators are not present here because there is no power (electricity) now” (Vaidya & Myers, 2021 pp. 9-10). The overall dominance of the *unpleasantness* of experiences is also confirmed from the excerpt of a government officer who mentions, “So in India, no one cares about these matters”. Thus, examining the excerpts provided in the case study, one important result from this study is that *samskaras* (subliminal impressions) of malpractices and unpleasant imageries are embedded in the minds of the stakeholders. It is important to clarify that, in the current case, the stakeholder's experiences and recall are replete with unpleasant experiences, but the Yoga framework does not emphasise only the findings of unpleasant experiences. The findings from this case study reflect the data and the context rather than the Yoga framework itself. There are many ICT4D projects in which stakeholders have experienced empowerment, hope, fairness, and cooperation (Sreekumar, 2011).

Another important result from the study concerns *Alambana*. In this case, the researcher provides the *Alambana*, which prompts the respondent to recall unpleasant memories and share them with the researcher. Therefore, researchers not only investigate the phenomenon but also elicit or consolidate respondents' memories. These are the *post-hoc* *alambana*. There are also *In-situ* *alambana*, i.e. the triggers that prompt a particular behaviour when the stakeholders are in practice. For example, what is the *Alambana* that solicits unfair practice from the stakeholders, such as process manipulations, data manipulations, bribes, and display of apathy (as listed in the Column ‘Anubhava/Experience’ in Table 4). The answer to this question is obtained from a government officer's excerpt mentioned in the case study (p. 6) i.e., “So in India, no one cares about these matters”. Thus, in situ, lack of care presents an overarching *alambana* that triggers unfair practices of stakeholders.

Using the Yoga framework, the information systems implementation in this case reveals a unique memory-related aspect, particularly in developing countries. The overall unpleasantness of experiences comes in different forms, such as imagery, stakeholder interactions, practices, organisational capacity, and the pace of work. The current research on mental models is limited to the mental models of ICTs (Benbasat & Taylor, 1978; Chen, 2020; Müller & Antoni, 2022; Thomas & Bostrom, 2007). However, this research indicates that mental models are formed well before ICT is implemented; therefore, the research on mental models-ICT implementation needs to be expanded to other areas, such as the mental models of culture, norms, policies, and stakeholders.

7 Discussion

The case study (Vaidya & Myers, 2021 p. 9, table 4) identifies a lack of trust as a major reason the implementation of the Agriculture Marketing Information System (AMIS) was sabotaged. The case study employs the concept of *habitus* from the philosophical works of Pierre Bourdieu to explain the results (Bourdieu, 1984). By applying the *Samskara* concept in this manuscript, I have identified the pervasiveness of unpleasant memories, in the form of impressions of apathy, unfair trade practices, exploitative contexts, and unpleasant imagery, as factors shaping stakeholders' behaviour. The local cultural ethos, for example, the Yoga ethos, prescribes adherence to values of truthfulness and non-violence (Vaidya, 2025). Therefore, lack of adherence to the local cultural values is related to the unsuccessful implementation of the AMIS project. Such a result stands in contrast to the past studies that have identified the local culture as a barrier to IS implementation (Avgerou et al., 2019; Kassen, 2017; Walsham, 2020). More recent studies have identified that few studies present the positive aspects of local culture in information systems implementation (Khan et al., 2024; Kroeze, 2024; Venkatesh et al., 2020). This study stands out because its results attribute AMIS's failure to a lack of adherence to local Yoga values. There is some evidence suggesting that information systems implementation challenges transcend cultures and that people face similar challenges across the Global North and the Global South (Kroeze, 2024). Some other studies have suggested that rural people often do not perceive issues such as social exclusion and culture as important in their empowerment (Hoque et al., 2022). Similarly, empirical IS studies conducted in the Indian subcontinent have found that culture is not perceived as a barrier when researchers spend more time immersing themselves in local culture (Dehghani & Denison, 2021; Ginige et al., 2020). The way this study differs is that, while it reveals the unpleasantness of stakeholders' experiences, it does not attribute these experiences to the local culture. On the contrary, the unpleasant experiences arise from the neglect of Yoga ethics and its behavioural norms.

For example, in the results section, I have presented a quote from a government officer (Vaidya & Myers, 2021 p. 9, table 4) who mentions, “Any person is free here to behave the way he wants to...they can spit anywhere...at the yard, we keep spitting from our windows”. In India, as well as in the Asian region,

chewing of betel leaf is a common cultural practice (Charpentier, 1977 p. 115; Merlin, 2021 p. 46). The betel leaf is chewed, and the secreted juice is then spat out. The spitting reference in the government officer's quote is related to the chewing of betel leaves or related products. In the case study, this practice is presented within the theme of "Habitus of Government Officer". Within the Yoga framework, this behaviour is rooted in the government officer's samskara. Every time a government officer or anyone else spits, it further reinforces this samskara not only in them but also in others watching them. Under the Habitus framework, the homogeneity between habitus and the field reproduces social norms (Swartz, 1997). Under the Yoga framework, it is the samskara that reproduces such social norms. Under the eight-step Yoga pathway, hygiene and cleanliness are ethical values, and therefore, to "spit anywhere" is to violate this Yogic code of conduct. Similarly, it violates the ethical principle of reducing sensual pleasures, i.e. minimalism. Therefore, the use of Yoga concepts helps to reveal the contextual behavioural maladies, but culture does not bear the brunt. This lack of attribution to local culture is the first benefit of using the Yoga philosophy, which is made possible by its inclusion of ethical norms unique to it, as well as universal norms. A person on the Yoga path must follow yoga-specific hypernorms, such as breathing control (pranayama) and maintaining a stable posture (asana). The person is also required to adhere to universal norms such as truth (Satya), non-stealing (Asteya), and non-violence (Ahinsa), though these universal norms are theorised differently in the Yoga philosophy. For example, in Table 7, I provide the definitions of these three universal values from the Yoga Sutra.

Table 7. Examples of the Definition of Ethical Values in the Yoga Sutra

Universal Values	Definition in Yoga Sutra
Satya (truthfulness)	What we know (what we have seen, what we have listened to, what we have estimated) to have the same outward (such as through speech/expressions), is Satya (truth)
Ahinsa (non-violence)	An ever-existing feeling for <i>not harming</i> all the living beings is Ahinsa (non-violence)
Asteya (non-stealing)	To take possession of someone else's belongings in an unprescribed (i.e. violating the principles laid in a particular constitution) way is stealing. The opposite of stealing is Asteya (Non-stealing)

The second benefit of using the Yoga philosophy is that it offers a different perspective on many ethical values and concepts, thereby creating an opportunity for further development of metaphysical concepts in IS (Hassan et al., 2018). For example, in the yoga sutra, truthfulness is described as: What we know - what we have seen, what we have listened to, what we have estimated – to have the same outward (through speech), is Satya (truth). Truth value has also been discussed within IS research, through concepts such as regimes of truth (Introna, 2003 p. 237). Thus, truth can be conceptualised as a reflective concept - one that is related to the consistency between the internal and the external, and also a structural concept, i.e., as a value that is acceptable to the regimes of truth. Similarly, recent information systems research has identified concentration as an essential construct in the techno-stress literature (Pflügner et al., 2021; Salo et al., 2019; Tams et al., 2018). There is also a need for a "within-person" view of technology-related stress (Benlian, 2020). Patanjali's Yoga Sutra provides a detailed description of methods for developing concentration and can be an important resource for providing a "within-person" view of technostress. Other disciplines, such as psychology and mental health, have applied Patanjali's Yoga Sutras to understand the fluctuations of the human mind and address mental health issues (Bærentsen, 2015; Varambally & Gangadhar, 2012). Also, there is a growing interest in studying the relationship between ICT implementation and personality types (Pflügner et al., 2019). In information systems research, mindfulness is a valuable construct in studying the relationship between personality types and technostress (Maier et al., 2019). The mind's tendencies are elaborated in detail in the Yoga Sutra (Vaidya, 2024) and can serve as a valuable theoretical resource for studying the relationship between personality types and ICT Implementation. A crucial component in developing a theory in information systems is to adopt a metaphysical perspective on the concepts in the theory (Hassan et al., 2018). Yoga offers a metaphysical perspective on the human cognitive apparatus (memory, ego, intelligence, and mind) and its relationship with other concepts, such as practices, reflexivity and methods of acquiring knowledge and are presented in Figure 5.

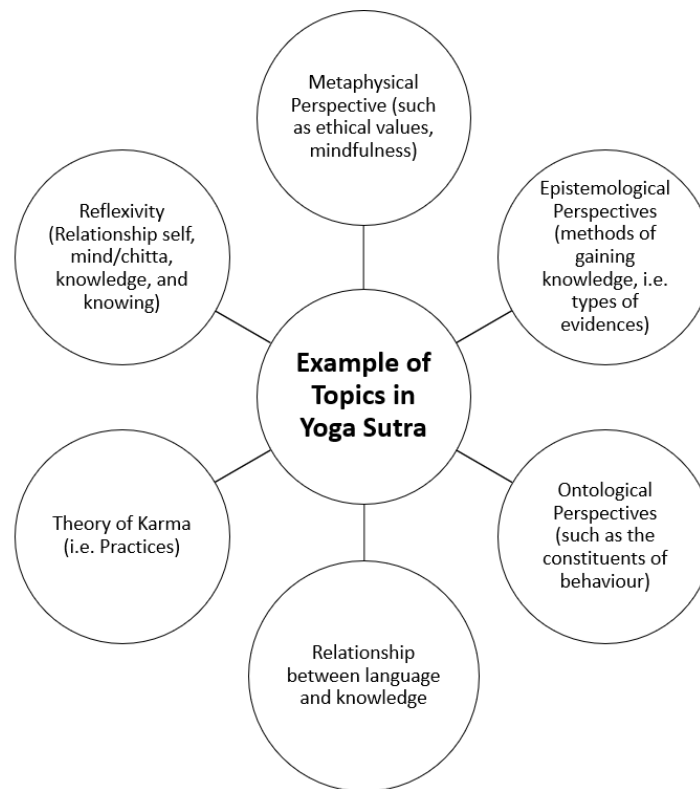


Figure 5. Examples of the Topics in the Yoga Sutra

The use of local theories and philosophies, therefore, has two potentials. First, the use of local concepts can present a more positive view of local culture, as universal ethical values are also embedded in them. Second, they provide an opportunity to explore different perspectives for theory development in IS. For example, this study explores the Yogic perspective on memory.

8 Conclusion

Currently, the integration of cognitive and behavioural concepts from Eastern and Western philosophies, on topics such as mindfulness, has only been done in limited instances (Dernbecher & Beck, 2017 p. 124). Within organisational studies, there is a need to engage with the different perspectives on memory (Foroughi et al., 2020). There are cultural differences in the ways memories are used (Ghose et al., 2026; Millar et al., 2013; Wang, 2021). Memories impact the mental models (McLaren et al., 2007) which in turn impacts the design, use and implementation of information systems (Gupta & Sharma, 2025; Kloppenborg et al., 2024; Müller & Antoni, 2022; Song & Wen, 2021; van den Broek et al., 2021). It therefore becomes important to understand the different ways in which memories are conceptualised. This study contributes to the body of knowledge by providing a yoga perspective on memory and its application to analysing the implementation of information systems. Apart from providing a different perspective, the Yoga-based analysis differs from the previous habitus-based analysis of (Vaidya & Myers, 2021) is in its identification of the researcher's role in eliciting unpleasant memories. For example, the researcher uses interview questions to trigger the interviewee's recall. Thus, by analysing what triggers memory recall, a Yoga-based framework can also examine the researcher's role. The ultimate purpose of Yoga is for the individual to experience the knowledge of consciousness. Whether a person practices Yoga for soteriological purposes or uses it as an analytical tool, the knowledge of consciousness is inherent in it. Therefore, epistemologically and ontologically, reflexivity is in-built in Yoga. Yoga can cater to both requirements of critical research, i.e., the study of structural constraints and reflexivity (Lawani, 2021; Wynn Jr & Williams, 2012).

Patanjali's Yoga Sutra is only one of the six local philosophical systems. Studies from other disciplines have identified specific concepts in the Yoga Sutras and presented detailed discussions (Balslev, 1991; Gold, 1996; Klostermaier, 1984). Within the Yoga Sutras, alternative interpretive texts are available beyond the Vyasa bhashya (Chapple, 1994; Feuerstein, 1987). Therefore, a substantial effort is needed to

explore these concepts. The application of Yoga concepts will encourage both local and international researchers to explore them further and increase participation by non-European researchers (Chughtai, 2023). Furthermore, indigenous theories are often expressed in local languages, such as the Yoga Sutras in Sanskrit. In this study, I was fortunate to have basic knowledge of Sanskrit and to find a Sanskrit-English dictionary (Williams, 1872) that helped me translate Sanskrit words. However, when significant manuscripts are to be written, this process can present complexities for both the reader and the writer. Therefore, the information systems community needs to come together to address these challenges.

One limitation of this study is that it is based on a single case study, and any assessment of the robustness of the Samskara framework will need more empirical verification. One important area of future research is the investigation of the local research methods for studying IT stakeholder behaviour. A more inclusive approach to local research methods is necessary, as local ways of inquiry provide a fresh perspective on research methods and are also a significant ethical and moral concern (Gone, 2019). Currently, there is some effort in the direction of theorising the local ontologies (Thapa, 2025). However, local research methods, also known as Indigenous Research Methods (IRM), have not been widely applied in information systems research. For example, the Mimamsa school of Indian philosophy presents a detailed discussion on the conceptualisation of words, sentences, injunctions within sentences, methods for identifying novelty in sentences, and ways to reduce semantic gaps (Kataoka, 2003). Hermeneutics has a rich tradition in the Sanskrit language (Frazier, 2008 p. 6) and this knowledge can provide a fresh perspective on the evaluation of qualitative IS studies (Klein & Myers, 1999; Myers & Klein, 2011). Similarly, there is a comprehensive set of the “Indic Pramana Theory” that discusses the types of Pramana (evidence) and offers unique insights into negative knowledge, which can be a helpful addition to interpretive methods (Kellner, 2003). Thus, future research can also focus on theorising local epistemologies and research methods.

Dedicated journals that focus on information systems issues in developing countries have called for broadening of the “review criteria” so that the distinctive contributions of the local knowledge systems can be brought to the fore (Bawack et al., 2025 p. 234). At this juncture, it becomes important to reflect on the theoretical diversity in information systems, and whether it means interdisciplinary exchanges, such as drawing from different disciplines (Paré et al., 2025). Or it means intercultural theoretical exchanges. If theoretical diversity also includes the latter, then a lot of groundwork needs to be covered, as the developing countries, such as India, are already at a disadvantage, merely because of their locations, which restrict their ability to contribute to IS theory building (Masiero, 2023; Seetharaman et al., 2024).

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