A Qualitative Constructivist Framework for Assessing Knowledge Transfer in Enterprise System Projects: Insights from Expert Interviews

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***Abstract*—Effective Knowledge Transfer (KT) is widely recognized as a cornerstone of success in Enterprise System Projects (ESPs). However, despite its critical role, many ESPs continue to suffer from poor KT practices, resulting in delays, cost overruns, and suboptimal system adoption. This study aims to develop a qualitative constructivist framework for assessing knowledge transfer in ESPs to advance the ESPs' success. This study introduces the Transfer Success Self-Assessment Framework (KTSSAF), a theoretically grounded and empirically validated framework designed to systematically evaluate KT effectiveness across ESP phases. Drawing upon the Information Systems (IS) Success Theory, the KTSSAF is built around the Project Management Process Groups (PMPG), enabling organizations to assess KT at granular levels within the pre-, during-, and post-implementation stages of ESPs. The development of KTSSAF was guided by a qualitative constructivist methodology, combining insights from semi-structured interviews with domain experts and a comprehensive literature review, an assessment kit, and a scoring mechanism tailored to enterprise-specific knowledge clusters and project phases. The framework supports ESP stakeholders in identifying KT gaps, forecasting KT success, and implementing targeted improvements. Empirical validation through expert reviews and pilot studies demonstrates the framework's practical utility and theoretical contributions. KTSSAF empowers organizations to make informed decisions regarding knowledge management strategies, facilitating improved knowledge retention, enhanced system use, and increased stakeholder engagement. By addressing longstanding gaps in KT evaluation within ESPs, this study contributes a structured, repeatable approach for practitioners and researchers to enhance KT outcomes and overall ESP success.**

Keywords*—Knowledge transfer; enterprise system projects; KTSSAF; project management; constructivist methodology; knowledge management; IS success theory

I. Introduction

In the landscape of digital transformation, ESPs such as ERP, CRM, and SCM serve as integral platforms for achieving strategic agility and data-driven decision-making, as previously reported by [1], [3]. However, while their technical capabilities are well-established, their success is equally dependent on effective human and organizational processes, particularly KT. KT, as a construct, is deeply embedded in the Knowledge Management (KM) discipline and draws theoretical grounding from the Resource-Based View (RBV) as argued by [4], the SECI model aligns with [5], and IS Success Theory according to [6]. These theories provide a comprehensive lens for understanding how tacit and explicit knowledge is created [7], shared, assimilated, and applied in complex organizational settings.

Despite this rich theoretical landscape, KT has received insufficient systematic attention in the context of ESPs, particularly as an assessable, project-critical dimension. The IS Success Theory has recently been revisited to address dimensions such as knowledge quality, use, and organizational impact as observed in the work of [8].

ESPs demand continuous, role-specific, and stage-sensitive KT between stakeholders such as consultants, developers, analysts, and end-users, as identified by [9], [10]. However, most KT in ESPs remains ad hoc, siloed, and informally structured in line with the findings of [10], [11]. The conceptual challenge is systematically evaluating and ensuring KT effectiveness across the entire project lifecycle—from pre-implementation alignment and planning to post-implementation sustainability and improvement.

Current KT practices fail to incorporate structured metrics or assessment frameworks that consider KT a core deliverable rather than a peripheral byproduct, which aligns with the findings of [12]. Moreover, traditional project success metrics (time, cost, scope) are inadequate in capturing the intangible dynamics of knowledge dissemination, further complicating efforts to close the KT performance gap, which was supported by similar conclusions drawn by [9], [13].

While prior research has acknowledged the importance of KT in ESPs, empirical studies and operational frameworks that evaluate KT effectiveness in real-world projects are notably scarce. This gap is most apparent in:

- Lack of integrated tools to track and measure KT quality and outcomes.

- Absence of frameworks tailored to different ESP phases and stakeholder roles.
- Neglect of tacit knowledge assimilation across geographically dispersed teams.
- Limited incorporation of organizational context into KT models.

As enterprise systems evolve, so must the mechanisms by which knowledge is captured, transferred, and sustained. Without a well-structured assessment framework, organizations risk repeated errors, loss of institutional memory, and low user adoption, undermining the very goals these systems aim to fulfil, as argued by [14], [15].

This study investigates the effectiveness of KT within ESP, conceptualized as the structured movement and assimilation of critical project knowledge—both tacit and explicit—across the pre-, during-, and post-implementation phases of ESPs. The central phenomenon is addressed by developing and validating the KTSSAF, a practical and theoretically grounded tool designed to evaluate and enhance KT outcomes within the ESP context.

KTSSAF incorporates insights from IS Success Theory, PMPG, and qualitative expert feedback to provide a robust self-assessment mechanism. It empowers organizations to identify KT gaps, anticipate risks, and apply targeted improvements that align with organizational strategy and system capabilities.

Based on the identified gaps and conceptual direction, the following open-ended research questions guide this qualitative inquiry:

RQ1: How do ESP stakeholders perceive and experience the effectiveness of knowledge transfer across different phases of enterprise system implementation?

RQ2: How can a comprehensive self-assessment framework be designed to evaluate and improve knowledge transfer practices in ESPs?

The remainder of this study is organized as follows: Section II reviews relevant literature on ESP, particularly on KT assessment. Section III describes the research methodology, including the study design, rationale, participant selection, data collection methods (literature review and semi-structured interviews), and data analysis approach. Section IV presents the key findings from the literature review and thematic analysis of participant responses, which collectively informed the development of the proposed framework. Section V discusses the results in light of existing research. Finally, Section VI concludes the study by summarizing the main findings, highlighting theoretical and practical implications, and suggesting avenues for future research.

II. Literature Review

A. Introduction

ESP, encompassing systems such as ERP, student information system, and learning management system, depends on the firm's industry, which inherently has knowledge-intensive endeavors which support the assertion made by [16], [17], [18] they require seamless technical, organizational, and procedural knowledge transfer across cross-functional teams. Despite the strategic importance of KT in ESP success, literature reveals a fragmented understanding of measuring and managing KT on ESPs, especially across the different implementation phases, as noted by [19] and [20]. This literature review evaluates key theoretical and practical contributions to KT, assesses their applicability to ESPs, and highlights how the proposed KTSSAF addresses current limitations.

Several scholars have acknowledged that the failure to perform a KT and assess the KT level within the ESP arrangements leads to an unsuccessful ESP [2], [19], [21]. This study will comprehensively review relevant literature on KT within the ESPs to identify the current KT assessment gap within the ESP phases and categorize the KT success assessment factors within the different phases of ESPs to develop a KT self-assessment framework for ESP KT self-assessment success.

B. Definition of Knowledge Transfer

The KT is defined in this study as the process of sharing, disseminating, and applying knowledge in the ESP, both implicit (tacit) (experience-based, non-codified knowledge), similar conclusions were drawn by [22], [23] in contrast, explicit (documented, codified knowledge, as argued by [2], [24] between stakeholders, being part of the ESP in different phases before, during and after the implementation of the ESP in line with the findings of [25], [26], [27]. As observed in the work of [19] effective KT ensures that knowledge is transferred across different project phases, enabling project teams to make intelligent decisions, enhance information system implementation, increase efficiency, and reduce risks associated with the knowledge transfer gap, as previously reported by [2], [28], [29], [30], [31].

1) Scope of knowledge transfer: The scope of the knowledge transfer or knowledge sharing in this study is concentrated on Enterprise System Projects (ESP), focusing on the following features:

2) Included aspects of knowledge transfer:

a) Types of knowledge:

- Explicit Knowledge

(e.g., documented procedures, manuals, best practices, training materials) as defined by [2], [24], [32].

- Implicit (Tacit) Knowledge

(e.g., expertise, skills, lessons learned from experience, informal communication) as reported by [22], [23].

b) Stakeholders involved in KT:

- Project managers, implementation teams, end-users, IT specialists, and consultants according to [33], [34], [35], and [36].

c) Phases of ESP where KT is assessed:

- Pre-implementation, During Implementation, and Post-Implementation phases, as observed in the work of [8] [19].

d) Challenges and barriers to KT:

- Resistance to change [37] Lack of stakeholder engagement [38] high employee turnover [39],

keeping supporting contracts, and poor documentation as identified by [14], [19], [40].

e) KT Assessment Kit:

- It encompasses a collection of instruments and questions developed to facilitate the practical application of assessing KT success level using the proposed framework.

3) Excluded Aspects of Knowledge Transfer:

a) General Knowledge Management (KM):

- The study focuses on knowledge transfer, not the broader concept of knowledge management, which includes creation, storage, and retrieval beyond ESP scope.

b) KT Mechanisms:

- Formal methods: documentation, training, workshops, lessons learned reports.
- Informal methods: mentorship, peer learning, discussions, hands-on experience.

c) Non-Enterprise System Knowledge Transfer:

- KT related to general business operations, non-IT projects, or unrelated industries is outside the scope.

d) Technological Aspects Not Related to KT:

- While ESP implementation involves technology, this study does not focus on the technical development of enterprise systems but on assessing the knowledge transfer level in the ESP.

e) Industry-Specific Knowledge:

- The study aims to provide a general KT framework for ESPs rather than tailoring it to a specific industry.

This research aims to bridge the knowledge transfer gaps by developing a practical and structured framework for assessing and improving KT effectiveness in Enterprise System Projects (ESP).

C. Theoretical Frameworks and Limitations

1) IS Success model: The success of the Information System (IS) followed the foundational theories used to assess multifaceted changes, as previously reported by [41] In the IS. DeLone and McLean's model is extensively used to assess the IS success as observed in the work of [6], [42], [43]. The IS Success Model according to [6] remains one of the most cited frameworks in information systems research. It defines success through six interdependent dimensions: information quality, system quality, service quality, use, user satisfaction, and net benefits [2], [44]. While valuable for post-implementation evaluation, it offers limited insights into the dynamic process of KT throughout ESP phases. Furthermore, it treats knowledge transfer as an outcome or side-effect rather than a process requiring direct assessment, as identified by [45]. Scholars, [45] highlighted that the IS Success model development went through many improvement processes, starting with the Delone and McLean's IS success model [46], the adapted D and M technology acceptance model TAM of Davis, the IS success model of Seddon, and other IS success models. The IS Success Theory was utilized to develop the study framework.

2) Knowledge management lifecycle: Knowledge Management (KM) Lifecycle provides a comprehensive view of how organizations create, store, share, and apply knowledge. While it emphasizes KT as a lifecycle phase as defined by [31], it lacks a project-based perspective, making it less actionable for implementation-specific challenges in ESPs, as argued by [47]. Its theoretical orientation also limits its practical deployment for real-time KT measurement or forecasting, building on the work of [48].

3) Project Management Process Groups (PMPG): The PMBOK Guide outlines five Project Management Process Groups—initiating, planning, executing, monitoring, and closing, according to [49]—which provides a temporal and functional structure for managing ESPs. Although this model supports project phasing, it does not incorporate KT explicitly, nor does it offer tools or metrics to assess the quality of knowledge transfer within each phase as identified by [50]. Its focus remains on processes and deliverables, rather than learning or knowledge exchange.

D. Knowledge Transfer in Enterprise System Gap

Despite the centrality of project-based organizations (PBOs) in delivering enterprise systems (ES), scholars have identified critical deficiencies in how KT is addressed within IT project management, as argued by [13]. A significant concern is the absence of a structured framework to assess KT quality during project execution, as well as the lack of mechanisms to evaluate KT success. Building on the work of [51], this deficiency contributes to significant project risks, including delays, cost overruns, and compromised system quality, factors that ultimately impair organizational performance. Empirical findings reveal that resistance or failure to share knowledge among ES stakeholders adversely affects project outcomes. Although KT is an essential element within the broader knowledge management (KM) life cycle, it remains underdeveloped relative to other KM processes, which include knowledge creation, saving or storing, and application [52]. As such, there is a critical need to identify the determinants of successful KT within ES contexts and to establish robust evaluative models capable of detecting and mitigating KT challenges in real-time. Prior studies emphasize the importance of feedback-driven KT assessment tools, particularly those that operate before, during, and after ES implementation, to ensure effective system design and management, as highlighted by [53]—collaborative efforts between researchers and practitioners. However, findings by [54] further demonstrate the potential of performance metrics to quantify KM efficacy, thereby strengthening the strategic role of KT in ERP success. KT's strategic value has become increasingly prominent in modern, agile enterprises, where information is a key competitive asset; these findings corroborate those of [27] and [41]. However, findings by [55], [56], [57], [58] argue that the persistent recurrence of avoidable errors across ES projects stemming from inadequate KT practices highlights the urgent

need for more systematic approaches. This inefficiency often leads to redundant efforts, increased costs, and suboptimal project performance. Conceptually, KT within ES projects entails exchanging tacit and explicit knowledge among team members to facilitate problem-solving, innovation, and process alignment in line with the findings of [8], [59], [60]. Nevertheless, studies show limited assessment to verify whether KT processes are effectively executed during the implementation phase, before the system goes live, as noted by [61]. Addressing this gap is essential for enhancing ES project outcomes and should be a key focus of future research and practice.

E. Comparative Evaluation of KT Frameworks

The comparative evaluation in Table I systematically reviews seven established KT frameworks in the context of ESP, emphasizing their alignment with key success features such as real-time assessment, quality feedback mechanisms, KM lifecycle integration, ESP customization, empirical validation, and adoption of the IS Success Model.

While foundational models such as [62] and [56] laid early groundwork by identifying core KT success factors, they lack mechanisms for continuous monitoring and do not adopt the IS Success Model, limiting their effectiveness in dynamic and large-scale enterprise environments. Similarly, although [58] the model includes some performance evaluation, but does not offer full integration with real-time assessment or formal IS success criteria.

On the other hand, more recent approaches like [31] [53] stand out for incorporating performance metrics, feedback loops, and partial alignment with the IS Success Model. These features make them more adaptable to ongoing evaluation needs within ESPs.

The KTSSAF (Knowledge Transfer Success and Assessment Framework) offers significant advancement over these models by addressing many of their limitations. Its key strengths include:

- Real-Time Assessment Capability: KTSSAF includes mechanisms to evaluate KT performance at different stages of the ES lifecycle—before, during, and after implementation—allowing organizations to detect issues early.
- Feedback-Driven Quality Control: It features integrated feedback loops to improve KT activities and close the performance gap continuously.
- Alignment with IS Success Model: KTSSAF adopts the DeLone and McLean IS Success Model, enabling measurement of KT impacts on system quality, user satisfaction, and organizational benefits.
- ESP-Specific Customization: Unlike general KM frameworks, KTSSAF is explicitly tailored to enterprise systems, considering the unique challenges and dynamics of ERP implementations.
- Diagnostic and Prescriptive Utility: Beyond just assessment, KTSSAF provides structured guidance on addressing identified KT weaknesses, thus supporting proactive project management.

Frameworks like [27] and [63] contribute valuable insights, particularly in agile and collaborative contexts, but they lack formal assessment components and IS integration—gaps that KTSSAF directly addresses.

In summary, the evaluation underscores the fragmented nature of existing KT frameworks in ESPs, particularly in continuous assessment and strategic alignment. The KTSSAF distinguishes itself by offering a holistic, empirically grounded, and actionable approach to KT management—bridging critical gaps and supporting more successful, knowledge-driven ES project outcomes. Its adoption can help organizations mitigate costly knowledge-related failures and enhance the long-term value of enterprise system investments.

TABLE I. KT FRAMEWORKS COMPARISON

KT Framework / Model	KT Success Factors	Real Time Assessment	Quality feedback mechanism	Alignment with the KM lifecycle	Customization for ESP context	Empirical Validation	IS Success Model Adoption
Bhatt KT Model	✓	✗	✗	✓	✗	✓	✗
Desouza & Evaristo KT Strategy	✓	✗	✗	✓	✓	✓	✗
Landaeta's KT Performance Model	✓	✗	✓	✓	✓	✓	✗
Parry & Graves KT Metrics Approach	✓	✓	✓	✓	✓	✓	✓
Samiei & Habibi KM-Evaluation Model	✓	✓	✓	✓	✓	✓	
Shaqrah & Maliki Agile KT Framework	✓	✓	✗	✓	✓	✗	✗
Gomes et al. Collaborative KT Model	✓	✓	✗	✓	✓	✗	✗
Proposed KTSSAF	✓	✓	✓	✓	✓	✓	✓

Legend: ✓ = Feature Present ✗ = Feature Not Present

TABLE II. KT MODEL COMPARISON

Model / Study	ESP Phases & Sub-Phases	ESP Roles	ESP Knowledge Types	ESP Knowledge Clusters	KT Sub-Clusters	KT Assessment Kit
IS Success Model	✗	✗	✗	✗	✗	✓
KM Lifecycle	✗	✗	✓	✗	✗	✗
PMPG	✓	✓	✓	✗	✗	✗
KTSSAF (Proposed Model)	✓	✓	✓	✓	✓	✓

Legend: ✓ = Feature Present ✗ = Feature Not Present.

The following comparative table offers a critical assessment of the most relevant KT-related models, comparing them on criteria such as focus, validation, phase relevance, and applicability to ESPs. Table II illustrates the unique value proposition of KTSSAF. While traditional models provide foundational guidance, KTSSAF extends functionality with phase-specific metrics and assessment instruments, ensuring comprehensive KT evaluation across ESPs.

This provides a focused comparison of KT frameworks based on six ESP-specific dimensions critical for effective KT in ESPs. The analysis shows that most existing frameworks, including the IS Success Model and KM Lifecycle, fail to address the practical complexities of ESP environments. While the PMPG framework covers project phases, roles, and knowledge types, it lacks the depth required for managing knowledge clusters and sub-clusters.

In contrast, the KTSSAF (proposed framework) demonstrates comprehensive coverage across all six dimensions. It uniquely incorporates ESP phases, roles, and macro-level knowledge clusters and micro-level sub-clusters, reflecting the real-world structure of enterprise systems. Moreover, KTSSAF integrates a KT assessment kit, allowing for continuous monitoring and evaluation of knowledge flow—something absent in other models.

This broad coverage enhances KTSSAF's practical relevance and diagnostic capability, positioning it as a robust tool for improving KT effectiveness and minimizing project risks in complex ESP implementations. Its alignment with operational realities makes it especially suitable for dynamic, role-based, and knowledge-intensive enterprise settings.

KTSSAF, as illustrated in Table II, is the only model in this comparison that explicitly integrates knowledge clusters and sub-clusters, enabling granular evaluation of KT quality across different types of knowledge: technological, organizational, individual, and procedural.

F. Emerging Research on KT and ESPs

Recent contributions have attempted to narrow the gap in KT understanding within ESPs. The scholars [20] conducted a systematic review of knowledge integration strategies in ERP projects, focusing primarily on outcomes rather than ongoing assessment. Similarly, scholars in [13] proposed a set of KT performance indicators, yet their practical deployment remains untested. These studies affirm the increasing scholarly interest in KT metrics but also reflect a lack of operational frameworks that guide practitioners through implementation.

Furthermore, technologies such as AI, augmented reality, and blockchain are being explored as future enablers of KT, especially in capturing and transferring tacit knowledge, as noted by [50] advocate for integrated KT feedback systems to support real-time decision-making in digital transformation projects. KTSSAF aligns with this trend by offering modular assessment kits that could be integrated with project dashboards or knowledge systems.

G. The Critical Role of Tacit Knowledge

Tacit knowledge, though inherently intangible and informally exchanged, plays a foundational role in the success of ESP. It encompasses personal insights, experiential learning, problem-solving capabilities, and strategic intuition, often transmitted through interpersonal communication rather than formal documentation, as identified by [64], [5]. Despite its significance, most KT frameworks neglect or insufficiently account for tacit knowledge. The KTSSAF framework addresses this gap by embedding tools that assess mentorship and peer coaching, simulation-based learning, storytelling, knowledge mapping, and unstructured communication during project implementation. These elements make KTSSAF especially effective in complex ESP environments, where informal knowledge sharing has a substantial impact on system adoption and operational resilience.

A notable innovation within KTSSAF is its structured classification of knowledge into distinct clusters and sub-clusters, providing greater analytical granularity than traditional models. These include Organizational Knowledge (e.g., governance structures and strategic alignment), People Knowledge (e.g., user roles, leadership dynamics), Technology Knowledge (e.g., system architecture and usability), Process Knowledge (e.g., workflow integration and regulatory compliance), and Transfer Mechanisms (e.g., formal training sessions and informal exchanges). Each cluster is evaluated across different phases of the ESP lifecycle using weighted metrics, resulting in a multi-dimensional assessment of KT effectiveness. This classification level offers a more nuanced and actionable understanding of KT dynamics. Furthermore, a visual representation of KTSSAF's capabilities reinforces its comprehensiveness and practical utility, positioning it as a robust tool for addressing the multifaceted challenges inherent in real-world enterprise system implementations.

III. METHODOLOGY

A. Research Design

This study adopts a qualitative constructivist approach as rooted in phenomenology by [65], [36], [66]. To explore how KT is experienced and perceived by experts within the context of ESP. The constructivist paradigm emphasizes that knowledge is co-constructed through interactions between the researcher

and participants, making it suitable for understanding KT's nuanced, context-dependent nature aligns with [67] [68].

As the chosen methodological tradition, phenomenology focuses on individuals' lived experiences and seeks to uncover how these experiences shape their understanding of complex organizational phenomena like KT outlined by [69], [70]. This aligns with the study's goal of developing the KTSSAF based on real-world insights.

B. Methodological Rationale

The rationale for using a qualitative, constructivist, and phenomenological design stems from the need to:

- Explore the subjective experiences of stakeholders involved in KT across ESP phases.
- Capture tacit knowledge and interpretive insights that cannot be quantified meaningfully through surveys or experimental methods were found in the work of [64].
- Enable a bottom-up development of the KTSSAF through emergent insights from expert narratives, rather than imposing a top-down model.

This design facilitates the systematic exploration and validation of the KTSSAF by grounding it in practical realities, bridging the gap between theory and implementation [7].

C. Participant Sampling and Selection

A purposive sampling strategy was adopted to ensure participants possessed specialized knowledge relevant to the research focus [71]. The study engaged seven expert practitioners from varied ESP backgrounds, including roles such as project managers, ERP consultants, solution architects, and change management leads.

Inclusion criteria included:

1) Minimum eight years of experience in managing or supporting ESPs.
2) Direct involvement in at least two project phases (pre-, during-, post-implementation).
3) Experience working in large or cross-functional project teams.
4) Ability and willingness to articulate reflective insights through in-depth interviews.

This sampling approach ensured rich, diverse, and relevant data aligned with the phenomenological focus on lived experience.

D. Data Collection Procedures

The semi-structured interviews were employed as a data collection technique, a method well-regarded for eliciting deep, reflective insights in qualitative research. Methodologically, this follows [72]. This approach provided the flexibility to explore the unique experiences of each participant while maintaining consistency in addressing the research questions. Interviews were conducted through online meetings using Google Meet or Microsoft Teams, depending on participant availability and geographic location. Each session lasted between 45 and 75 minutes.

In our data collection, we focused on recording all interviews [73] with prior informed consent, and subsequently transcribed verbatim for qualitative analysis. This ensured an accurate and comprehensive analysis of the expert feedback.

To ensure alignment with the study's three research questions, the interview protocol was carefully constructed to elicit detailed narratives related to the phenomenon under investigation:

For RQ1 (How do ESP stakeholders perceive and experience the effectiveness of knowledge transfer across different phases of enterprise system implementation?), participants were asked to reflect on their knowledge-sharing experiences during the pre-implementation, implementation, and post-implementation phases of ESPs. Questions probed their perceptions of what worked, what failed, and how knowledge flowed—or was unable to flow—across project milestones.

For RQ2 (How can a comprehensive self-assessment framework be designed to evaluate and improve knowledge transfer practices in ESPs?), participants were introduced to a preliminary version of the KT Success Self-Assessment Framework (KTSSAF). They were asked to provide feedback on the framework components' relevance, clarity, and usability. This ensured that the framework's refinement was grounded in practitioner experience.

Topics explored in the interview included, but were not limited to:

- Experiences with knowledge handover across the ESP lifecycle.
- Challenges associated with tacit knowledge sharing.
- Observed organizational, technical, and interpersonal factors impacting KT.
- Evaluation of and feedback on the proposed KTSSAF model.

Member checking was conducted to enhance the credibility and trustworthiness of the findings. Transcripts were returned to participants for validation and correction, ensuring their meanings and perspectives were accurately captured in line with the findings of [74]. This structured yet flexible data collection procedure ensured rich, detailed, and directly relevant data to answer each research question effectively, in line with the study's qualitative constructivist methodology.

E. Data Analysis

Data were analyzed using qualitative content analysis, chosen for its suitability in systematically organizing and interpreting textual data as rooted in [75]. The process followed an inductive logic, consistent with constructivist inquiry.

Step-by-step coding process:

Familiarization – Thorough reading of transcripts to understand context.

Open Coding – Labelling key concepts, phrases, and meanings line-by-line.

Axial Coding – Grouping related codes into broader categories (e.g., "Consultant Credibility", "Knowledge Gaps").

Thematic Structuring – Synthesizing categories into overarching themes relevant to KT effectiveness.

Mapping to ESP Phases – Organizing themes by project phase (pre-, during-, post-implementation) to enhance the framework's utility.

Emergent themes were triangulated with literature to enhance theoretical grounding and confirm conceptual coverage of the KTSSAF.

F. Methodological Foundations and Empirical Rigour

The development of KTSSAF followed a qualitative, constructivist research approach involving in-depth interviews following the model proposed by [76], [77], [78] with subject matter experts and practitioners from diverse ESP contexts. This methodology enabled the identification of context-specific KT assessment success factors and ensured that the framework was grounded in real-world ESP dynamics. Data analysis was conducted using content analysis according to [79], allowing for the systematic categorization of KT Success factors in ESP, the development of the proposed framework, and the validation of the proposed framework.

The model was validated through expert feedback, pilot testing, and iterative refinement. Table III summarizes the research method applied in this study. Participants acknowledged the model's relevance, clarity, and adaptability across different industries and project scales.

The ESPs expert appreciated its ability to provide actionable insights, such as identifying weak knowledge links in specific project phases or stakeholder roles or specific knowledge types, in specific impacted outcomes of the successful knowledge transfer, including individual impact, organization impact, information quality, and system quality.

TABLE III. APPLIED RESEARCH METHOD

Aspect	Selected for Study	Reason for selection
Research Questions	Exploratory	To explore the literature on KT in ESP and investigate the perception and experience of the effectiveness of KT across different phases of ESP.
Research Approaches	Qualitative	To gather in-depth insights from experts and understand the context and nuances of KT within ESP projects.
Data collection methods	Semi-Structured Interviews	Allows flexibility to explore specific expert opinions while ensuring coverage of predefined themes.
Data Analysis Techniques	Content Analysis	Enables a systematic and objective categorization of qualitative data, allowing identification and quantification of factors influencing KT success in ESP.

IV. FINDINGS

This study utilize a qualitative, constructivist approach to examine the critical dimensions of KT within ESPs. Through rigorous content analysis of expert interviews, key experiential themes and insights were synthesized, addressing the two research questions and contributing to validating and refining the KTSSAF

A. KTSSAF – Bridging the Gaps

The KTSSAF developed in this study offers an integrative solution. It combines elements of IS Success Theory, KM lifecycle, and PMPG while introducing KT-specific metrics and instruments to assess knowledge flow across ESP phases. KTSSAF includes a validated assessment kit, a scoring model, and customizable instruments supporting explicit and tacit knowledge evaluation. It is empirically grounded through interviews and pilot studies, ensuring theoretical robustness and practical usability. Fig. 1 illustrates the proposed KTSSAF visualization.

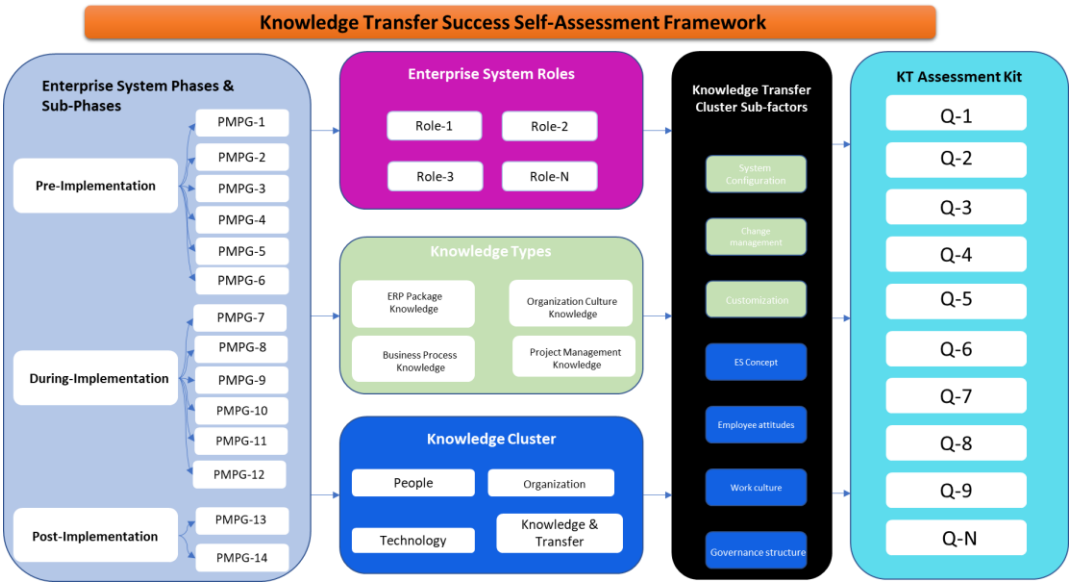

Fig. 1. Knowledge transfer success self-assessment framework- KTSSAF.

B. Emergent Themes from Expert Interviews

The semi-structured interviews with seven ESP professionals, each possessing over eight years of relevant experience, generated a rich dataset. Using a five-point Likert scale and interpretive thematic analysis, three major thematic clusters emerged:

1) Confirmation of theoretical KT success factors: Experts consistently affirmed the relevance of nine critical KT success factors initially identified in the literature review. These included:

Knowledge Sharing Culture, Knowledge Content Quality, Consulting Expertise, Management Support, Consultant Credibility, Absorptive Capacity, Project Owner Leadership, Consultant Ability, and Incentives.

Except for a single neutral response regarding incentives, there was a unanimous agreement on the importance of these factors. This validates the theoretical foundation of KT in ESPs and supports their integration into the proposed KTSSAF.

"Leadership and consultant credibility make or break the knowledge transition process." (Interviewee 3, IT Consultant).

2) Validation of KTSSAF independent variables: Experts strongly endorsed the independent variables embedded within the KTSSAF, which include:

- The ESP phases (pre-, during, and post-implementation)
- Project Management Process Groups (PMPG)
- Role responsibilities of ESP stakeholders

Four types of knowledge: business, project management, organizational culture, and technology.

The Knowledge Clusters: Knowledge and Transfer, People, Technology, and Organization. Participants confirmed that these dimensions comprehensively capture the complexity of KT within ESPs, facilitating a structured, contextualized assessment of success levels. "Each knowledge cluster brings a different layer of understanding — without this multidimensionality, we'd be blind to root causes of KT failure." (Interviewee 6, Project Manager)

C. Evaluation of KTSSAF Structure and Predictive Utility

Experts evaluated the KTSSAF across five analytical dimensions: variable weight, structure, clarity, consistency, and diagnostic utility. Feedback affirmed the framework's robust design and its capacity to:

- Predict KT success across PMPGs and implementation phases.
- Evaluate KT contributions by role and scenario.
- Maintain a clear, consistent structure and interpretability.

Moreover, the model's adaptability, configurability, and modularity were emphasized, with participants acknowledging its reusability across varied ESP contexts. "The model is precise, modular, and predictive — it goes beyond theory and meets practice head-on." (Interviewee 2, Solution Architect).

D. Conceptual Framework Integration

The findings affirm the constructivist underpinnings of the KTSSAF. They reflect a high alignment between expert experiential narratives and the conceptual framework developed through prior literature and theoretical synthesis. The study captured the experiential essence of KT processes in ESPs, revealing how actors interpret, navigate, and evaluate KT success in dynamic project environments.

Emergent conceptual frameworks were substantiated by interpretive feedback, highlighting the dynamic interactions among ESP phases, knowledge types, and stakeholder roles. Experts emphasized that KT is not a static event but an evolving process that requires contextual awareness, iterative assessment, and leadership engagement at all stages of the ESP lifecycle.

E. Contributions to Practice and Theory

This empirical inquiry makes several key contributions to both theory and practice. It confirms the validity of theoretical constructs previously derived from literature synthesis, thereby reinforcing the conceptual foundation of the study. Expert feedback further refined the framework, enhancing its practical applicability in real-world enterprise system projects. In addition, the study establishes KTSSAF as a diagnostic and planning tool that can support enterprise system project managers and consultants in assessing and managing knowledge transfer success. The research advances scholarly understanding and practical usability by codifying tacit insights into an operational framework. The interpretive, thematic analysis highlights the multi-dimensional and actor-centered nature of knowledge transfer within enterprise system projects, underscoring the value of KTSSAF as an evidence-based instrument for improving knowledge management practices. KTSSAF offers multiple contributions to both academic literature and industry practice. Theoretically, it advances the discourse on KT by shifting focus from knowledge creation and storage to measurable and actionable KT assessment. It also enriches understanding of KT dynamics in project-based settings, particularly within the underexplored ESP domain. Practically, KTSSAF equips project managers, knowledge officers, and organizational leaders with a structured tool to forecast KT success, mitigate knowledge risks, and enhance project outcomes. It also facilitates longitudinal learning, enabling organizations to retain and reuse critical knowledge across successive ESP implementations—a key determinant of digital resilience and competitive advantage, as noted by [80].

Moreover, the KTSSAF framework aligns with emerging trends in digital project management, where predictive analytics, continuous learning, and evidence-based interventions are becoming the norm. By integrating KT metrics into the broader ESP lifecycle, KTSSAF bridges the gap between theoretical aspirations and practical execution.

V. Discussion

This study, guided by two core research questions, explored the KT assessment success factors and conceptual underpinnings of KT in ESP. Through a constructivist, qualitative inquiry employing semi-structured interviews with ESP experts, this research provides a grounded assessment of KT practices, culminating in validating the KTSSAF. This

section discusses the findings about the research questions, previous scholarship, and broader implications for the field.

A. Addressing the Research Questions

RQ1: How do ESP stakeholders perceive and experience the effectiveness of knowledge transfer across different phases of enterprise system implementation?

Our findings reveal that stakeholder perceptions are deeply influenced by contextual and role-based factors that span the ESP lifecycle. Experts affirmed that KT effectiveness varies considerably across the pre-implementation, implementation, and post-implementation phases. [81]. These phases are further shaped by stakeholder roles, project structures, and knowledge types, confirming assertions by [54] that successful KT in ESPs requires tailoring strategies to temporal and contextual project dimensions. Respondents emphasized the necessity of sustained management support and consultant credibility across all phases—elements that enhance KT effectiveness through trust, relevance, and structure. These insights extend prior literature by providing empirical validation that KT is not a singular activity but a phased, adaptive process requiring distinct engagement and measurement strategies throughout the ESP lifecycle, as noted by [82].

RQ2: How can a comprehensive self-assessment framework be designed to evaluate and improve knowledge transfer practices in ESPs?

It is evident from our results that the KTSSAF was confirmed through expert validation as a valuable, structured tool for assessing KT success. The framework's inclusion of ESP phases, project roles, PMPGs, knowledge types, and knowledge clusters enables a multidimensional understanding of KT performance across scenarios. This contribution moves beyond the limitations of one-size-fits-all models by offering a configurable, modular, and predictive self-assessment mechanism, a novelty not extensively explored in prior KT research. While earlier studies (e.g., [83]). The KTSSAF offers typologies and guidelines, providing an operational and diagnostic instrument that stakeholders can apply across ESP contexts.

B. Integration with Literature and Theoretical Contributions

Grounded in a constructivist, phenomenological paradigm and guided by content analysis, this study demonstrates methodological rigor and epistemological coherence. It contributes to the expanding body of qualitative KT research, complementing prior studies that advocate for interpretive approaches in information systems and organizational knowledge research in line with the findings of [84], [85]. Additionally, it responds to longstanding calls within the knowledge management (KM) literature for deeper, context-sensitive explorations of how knowledge is created, shared, and applied in practice as observed in the work of [86]. Our analysis highlights three key theoretical contributions. First, it recontextualizes general KT theories by situating them within ESP's temporally bounded and role-driven environment, enhancing their relevance and applicability. Second, it expands the scope of KT evaluation by shifting the analytical lens from outcome-based project success metrics in the knowledge-centered assessment across multiple ESP phases. Third, it advances the operationalization of tacit knowledge by embedding constructs such as absorptive capacity and consultant credibility into the KTSSAF framework, addressing a notable gap in practical KM models and contributing to more holistic assessments of knowledge transfer effectiveness.

C. New Understandings and Practical Implications

It is evident from our results that several novel insights were illuminated. Notably, it underscores how the sequence and timing of KT activities, not merely their content or structure, critically influence outcomes. Identifying PMPGs as dynamic enablers for phased KT assessments represents a refinement in understanding how knowledge and process maturity evolve together during ESPs. Practically, the KTSSAF offers organizations a self-assessment toolkit to monitor and refine KT efforts in real time. The KTSSAF configurability and modularity make it applicable across diverse enterprise contexts—from public universities to multinational corporations—enhancing its strategic relevance.

D. Advantages of the Proposed Method (KTSSAF)

The proposed KTSSAF offers several key advantages over existing models in the field of knowledge transfer within enterprise system projects. First, unlike many traditional KT models that focus generically on knowledge sharing practices, KTSSAF is specifically tailored to the structured phases of ESPs, aligning with the Project Management Process Groups (PMPG) to enable granular, phase-specific assessment of KT effectiveness. Second, it is grounded in Information Systems (IS) Success Theory, which provides a robust theoretical foundation that links KT outcomes directly to system success metrics such as user satisfaction, system use, and organizational impact.

Furthermore, KTSSAF adopts a qualitative constructivist approach, integrating insights from domain experts and practical field data, which ensures high contextual relevance and real-world applicability—something often lacking in quantitatively rigid or one-size-fits-all models. The inclusion of a scoring mechanism and customizable assessment kit distinguishes KTSSAF by offering actionable diagnostics and predictive insights for stakeholders, enabling organizations to proactively identify KT gaps and implement targeted improvements. Finally, in our analysis, the framework's empirical validation through expert reviews and pilot applications demonstrates its practical utility, repeatability, and adaptability across different enterprise contexts—advantages not commonly found in more theoretical or static KT models.

E. Limitations and Future Research Directions

Despite the KTSSAF contributions, the purposive sample, though composed of highly experienced ESP experts, may limit contextually bound information and may not capture all regional or industry-specific nuances.

We acknowledge that this study is limited by generalizability. The interviews, while deep and revealing future research that should:

- Expand the sample base across industries and geographic regions to test KTSSAF's generalizability.

- Explore longitudinal application of KTSSAF to monitor KT over time and refine the framework based on evolving practices.
- Develop automated assessment tools incorporating the KTSSAF for real-time feedback and benchmarking.
- Investigate how organizational learning loops emerge post-assessment and how KTSSAF results can inform continuous improvement in enterprise environments.

This study advances the theoretical, empirical, and practical understanding of knowledge transfer in ESPs. Offering a validated, multidimensional assessment framework rooted in expert experiences and grounded theory lays the foundation for more responsive, contextual, and effective KT strategies in complex organizational transformations.

VI. Conclusion

The academic and practitioner domains of ESP offered a timely and significant contribution using the developed KTSSAF. While the ESPs continue to increase in scale and complexity, the evaluation of the KT management and effective KT within the ESPs lifecycle is classified as a strategic challenge. The proposed KTSSAF addresses this need by operationalising KT assessment into a structured, phase-sensitive, modular framework aligned with the IS theory, KM, PMP, and PMPGs.

By integrating theoretical insights from IS Success Theory, KM, and PMP, KTSSAF ensures that KT assessment is methodologically sound and aligned with broader ESP outcomes such as system quality, user satisfaction, information quality, organization performance foster, and knowledge sustainability. Incorporating knowledge clusters—organizational, people, technology, process, and transfer mechanisms—enables a granular and multidimensional understanding of how knowledge flows within ESPs. We conclude that the framework advances the field by explicitly recognizing and assessing tacit knowledge, long considered one of the most challenging dimensions of KT.

Furthermore, our results provide evidence that KTSSAF's modular assessment kits, diagnostic indicators, and feedback mechanisms empower organizations to proactively identify KT gaps and take corrective action during ESPs implementation, rather than after project implementation. Its customizability ensures relevance across different industries, organizational sizes, and technological environments.

The framework has demonstrated practical utility through pilot testing and empirical validation, leading to measurable improvements in KT performance. As a result, KTSSAF transforms KT from an abstract managerial concern into a strategic, measurable, and actionable component of enterprise system success. Compared to existing models, KTSSAF provides a more practical, phase-specific, and empirically validated approach to evaluating KT in ESPs.

As organizations navigate digital transformation, KTSSAF offers a roadmap for ensuring that knowledge is not a bottleneck but a key enabler of ESP implementation success, system adoption, and sustained value creation. Future research can extend the framework's application across cross-cultural contexts, integrate it with AI-driven knowledge systems, or tailor it for agile and hybrid ESP methodologies, further reinforcing its relevance in dynamic, knowledge-intensive environments.

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Disclosure and Conflict of Interest

The author declares that there are no conflicts of interest in this research. In addition, there are no financial interests or competing affiliations that could have influenced the study's design, execution, or findings. This manuscript is the author's original work and has not been previously published or submitted for review to any other journal or conference.

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