

A Conceptual Framework to Support Organizational Knowledge Transfer Evaluation

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Abstract. *Evaluating Knowledge Transfer (KT) is critical for driving organizational learning, optimizing operational efficiency, and fostering innovation. However, knowledge on this topic remains unsystematized, existing solutions lack empirical validation, and standardized approaches are not widely adopted. This paper proposes an approach to support KT evaluation. To this end, a rapid review was conducted, and the Design Science Research Methodology was employed to model the approach. Given the impact of KT on organizational information flows and decision support systems, we present an overview of the systematization of knowledge on KT evaluation and the structure of its key processes and elements.*

1. Introduction

Knowledge Transfer (KT) is a process encompassing the sharing, dissemination, and application of knowledge, experiences, and best practices within organizations [Gu et al. 2021]. It enables organizations to leverage knowledge to enhance performance, address complex challenges, and drive organizational development [Gonzalez and Martins 2017]. However, the systematic evaluation of these processes and an approach that could generate valuable insights into KT remains underexplored in organizational contexts, directly influencing strategic decision-making [Milagres 2018].

In the global context, it is observed that the United States frequently associates KT evaluation with patent licensing numbers. However, companies experience substantial losses due to failures in knowledge sharing and KT [Tian and Guan 2023]. In Europe, efforts are underway to utilize indicators and metrics for KT evaluation, but research highlights the need for more precise definitions of these parameters [Campbell et al. 2019]. Despite public policies promoting KT and technology, Brazil ranks second to last in a comparison of 20 countries regarding research in this area [Gu et al. 2021].

Although the literature offers various models and techniques for KT, the evaluation of these processes remains unsystematized, with many proposed solutions lacking empirical validation [Cunha et al. 2022]. Additionally, KT assessment faces several challenges, including the absence of standardized metrics, difficulties in effectively measuring KT, the lack of clear guidelines for assessing its impact on project outcomes, the heterogeneity of knowledge sources and formats, and the limited

availability of specialized technological tools to support the evaluation process [Qian et al. 2020]. In this context, the research problem lies in the lack of systematized processes for KT evaluation.

The development of a robust approach for KT evaluation that systematizes and integrates the best practices identified in the literature with the needs and realities of the industry is essential. In related works, approaches of this nature have helped organizations share knowledge effectively, contributed to the continuous improvement of processes, and minimized the impact of challenges associated with verifying KT outcomes [Arundel and Wunsch-Vincent 2021, Campbell 2019, Pasaribu et al. 2017].

An important initial step in the development of this approach is to conceptualize it, thereby clarifying how KT evaluation operates and guiding the implementation of a tool that incorporates this approach. Therefore, the aim of this paper is to present and conceptually structure the core of an approach to support the evaluation of organizational KT. By adopting this perspective, the study reinforces the relevance of Knowledge Management Systems as a strategic tool for monitoring and validating the impact of knowledge transfer processes in increasingly complex environments [Yumhi et al. 2024]. Additionally, it provides mechanisms to improve management practices, fosters the integration of informational resources, and enhances technological solutions that support decision-making.

2. Method

This study employed two techniques to conceptually model the proposed approach. Initially, a rapid literature review was conducted to understand how KT evaluation is carried out by organizations. Subsequently, based on the findings from the rapid review, the Design Science Research Methodology (DSRM) was applied to develop an artifact representing the KT evaluation support approach.

2.1. Rapid Review

Due to its ability to provide evidence that supports decision-making toward a solution, the rapid review was chosen with the objective of identifying, in the short term, useful and applicable insights for the practical context of KT evaluations in organizations [Cartaxo et al. 2020]. To achieve this, a search string was constructed (Figure 1), and inclusion/exclusion criteria were defined, namely: primary studies, written in English, and addressing at least one of the research questions (RQs): (RQ01) What are the main elements identified for KT evaluation? (RQ02) What are the stages of the KT evaluation process? and (RQ03) Who are the stakeholders involved in KT evaluation?

The data obtained from the search conducted on Google Scholar up to January 2025 were organized in a spreadsheet, recording the title, authors' names, abstract, year of publication, Digital Object Identifier (DOI) or access link to the material, and whether the publication addressed any of the research questions (RQs). The selection process involved reading the titles of the works to identify the presence of any keywords associated with the topic. Then, inclusion criteria were applied based on the abstract: non-duplicated works, written in English, and addressing at least one of the RQs. It is worth noting that in cases where the abstract was not sufficient to apply the criteria, the introduction or final remarks of the article were also reviewed. Finally, a full reading of the articles was conducted.

Considering the qualitative nature of this study, Content Analysis was chosen as the method to comprehend the obtained results [Runeson and Host 2009]. Therefore, units of meaning were defined words that present key definitions regarding the object under study, including stakeholders, instruments, search mechanisms, measurement, and evaluation processes. Subsequently, excerpts from the articles were associated with the units of meaning and recorded in a spreadsheet. Finally, this association was evaluated, and the discussion on the topic was developed.

2.2. Design Science Research Methodology

DSRM was employed due to its ability to develop innovative solutions for practical problems [Peffer 2020]. In addition to being recognized for its rigorous approach to integrating theory and practice, DSRM emphasizes the creation of artifacts. In this context, the methodology ensures that the process of constructing the approach and materializing the KT evaluation support tool is grounded in existing literature (obtained from the rapid review) and industry practices (which will be applied in the solution's evaluation), ensuring the relevance of the final artifact for organizations.

For this purpose, the following DSRM stages were applied: (i) problem identification, which addresses the lack of a systematized approach to support KT evaluation; (ii) definition of solution objectives, aimed at providing mechanisms to facilitate and guide stakeholders and organizations in assessing the outcomes of their KT processes; (iii) design and development, involving the construction of a primary artifact representing the proposed approach and a secondary artifact materializing this framework into a software tool; (iv) demonstration, conducted through a real-world case study with professionals in an industrial application environment; (v) evaluation, based on feedback collected from professionals during a focus group session; and (vi) communication, carried out through academic publications.

3. Overview of the Approach for Knowledge Transfer Evaluation

The data search yielded 655 articles, and the selection process was conducted by a single researcher. In the first stage, the titles of the studies were analyzed, and those that clearly did not meet the criteria were excluded, resulting in 61 articles. In the next stage, after reading the abstracts, 32 articles remained. In the final stage, a full reading of the papers was conducted, and those that did not meet the criteria were excluded, resulting in a sample of 15 primary studies. This section summarizes the responses to QP01, QP02, and QP03.

The rapid review identified 15 processes for assessing KT. To construct an overview of the KT evaluation process, we highlighted the most frequently mentioned elements in the processes, concluding that they are essential for the evaluation. We adopted a pattern analysis and term normalization approach to conceptually develop a general process (Figure 1) that integrates the most mentioned stages in the processes obtained from the rapid review and addresses the key elements found (stages and flows; indicators and metrics; measurement support tools; and stakeholders). This generic model will serve as a guide to direct the structure and development of the KT evaluation support tool.

Therefore, we extracted four steps associating them with parameters, tools, and stakeholders. The first stage, Search Mechanism, involves searching for both explicit (literature review or organizational documentation - 11) and tacit knowledge sources

(consultation with experienced stakeholders - 4). The second stage, Parameterization¹, consists of choosing indicators (58) and metrics (217). The third stage, Measurement, determines the collection of measurable data interviews (5), questionnaires (5), focus groups (3), evaluation index systems (3), and workshops (2) stand out. In the fourth stage, Analysis of KT Process Results and recommendations issuance occur. Finally, documentation is generated and distributed to stakeholders. We also observed the involvement of stakeholders in all stages and the use of tools in stages 2, 3, and 4.

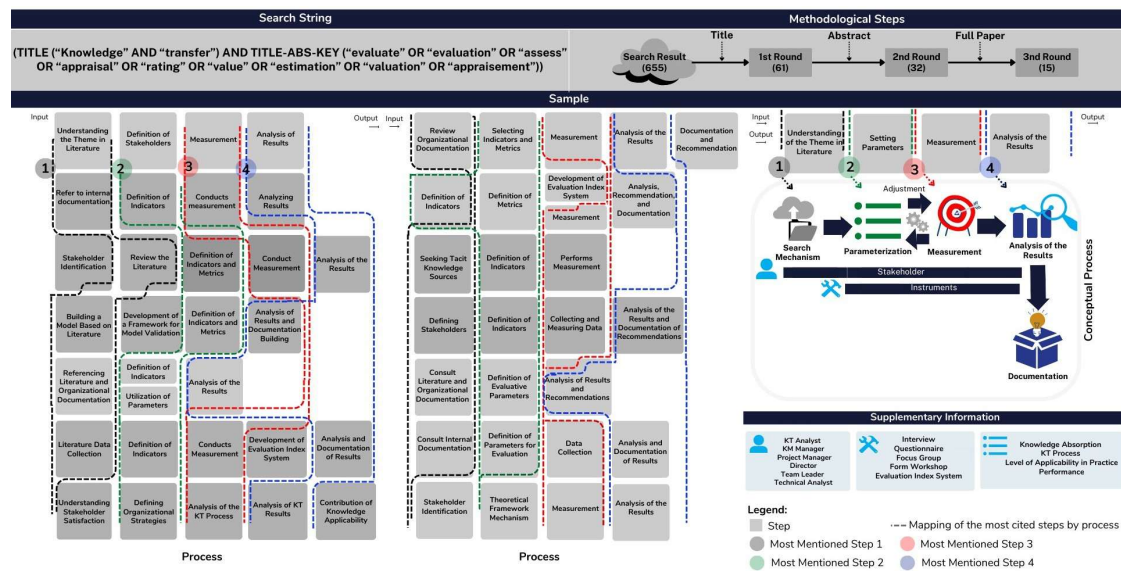


Figure 1. Overview of the Process for KT Evaluation.

In summary, the model highlights the trend of the terms employed, provides insights into the objectives of the process activities, fosters clarity, and promotes interoperability in communication. Thus, it can guide the development of technological solutions to support organizations in KT evaluation in the future.

3.1. Conceptual Framework

The processes identified in the rapid review contribute to the systematization of knowledge and will feed the database for the KT evaluation approach, reducing the tendency for ad hoc evaluations and enhancing decision-making. In this context, we have developed an artifact that synthesizes these aspects (Figure 2). Specifically, it is a conceptual model that will provide stakeholders with (i) a set of input variables, (ii) support for selecting the most appropriate KT evaluation process for the application context, and (iii) a guidance document outlining the key elements of this process identified in the literature.

Initially, stakeholders must define the variables of interest for the KT evaluation. Therefore, the proposed approach provides a checklist with suggested variables to be selected, such as: the type of knowledge, influencing factors, timing of execution, application domain, organization size, and generated artifact. These variables are derived from the objectives and relevant data for the evaluation identified in the processes stored

¹ <https://abrir.link/PCEfu>

in the database.

Subsequently, the approach will identify the processes in the database that encompass the greatest number of variables selected in the checklist by the stakeholders, ranking them based on percentage. This ranking will serve as a support mechanism for KT evaluation, guiding stakeholders toward the process best suited to their needs. It is important to emphasize that the ranking is a recommendation, and the selection of the process to be used is not automated. Furthermore, the database will be updated with KT evaluation processes sourced from literature and industry.

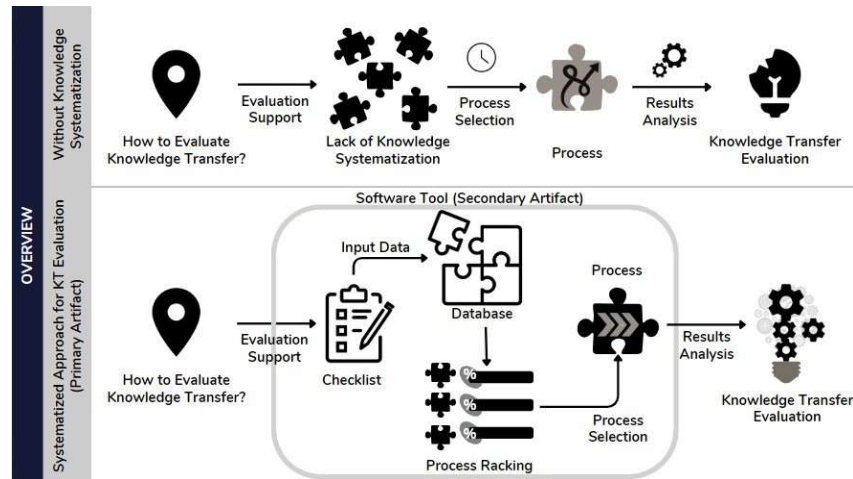


Figure 2. Overview of the KT Evaluation Approach

After the process selection, stakeholders will have access to a document on KT evaluation, combining (i) a visual and interactive representation of the process, highlighting arrows and flows to illustrate the interactions between stages, as well as icons and diagrams to connect the different parts of the process and their interdependencies; and (ii) a textual breakdown explaining the key elements: each stage and activity, stakeholder profiles, a list of indicators and metrics, and tools for measurement support.

The results obtained from the rapid review allowed for the identification of these key elements, which are essential for detailing the processes of the approach, as (i) KT evaluation should be conducted through structured processes with clearly defined stages and workflows, ensuring reproducibility; (ii) indicators and metrics are essential for quantifying the impact of KT and guiding decision-making; (iii) tools for supporting measurement arise to address the challenges of systematically collecting and processing qualitative and quantitative data; and (iv) stakeholder profiles play a critical role in the effectiveness of the evaluation and the interpretation of results.

It is important to highlight that the activity flow will be structured to reflect both pre-activities and post-activities, including the initiation and completion of each stage, decision points or refinements, and stakeholder interactions throughout the stages. Additionally, the approach provides a set of indicators and metrics that were previously validated for the contexts in which the selected process was originally applied, with the possibility of needing to adapt them during application in a new context, based on the available data within the organization.

Finally, a software tool (secondary artifact) will be developed to materialize the

constructed approach. Thus, we will make publicly available a web page supporting KT evaluation, which can be dynamically updated with new processes obtained from the literature and industry. It is expected that an increasing volume of processes stored in the tool will provide greater robustness to stakeholders during KT evaluation and promote the development of a knowledge exchange network among organizations.

4. Evaluation of the Approach

The primary artifact representing the KT evaluation support approach will be evaluated through focus groups with professionals experienced in each knowledge domain. In this way, we will be able to define homogeneous focus groups to collect fragmented feedback from professionals with expertise in (i) process stages and activity flows; (ii) defining indicators and metrics; (iii) measurement support tools; and (iv) human resources. For the secondary artifact, feedback on usability and ease of use of the tool will be collected from the focus group participants, along with suggestions for improvement.

5. Final Considerations

The proposed approach establishes an overview that can (i) transcend conceptualization and enable practical use in real-world scenarios; (ii) promote standardization and consistency in KT evaluation, ensuring that the same criteria and methods are applied in all evaluations based on a default model; (iii) provide step-by-step guidance, allowing users to focus on more critical analyses and decision-making; and (iv) enable adaptability to organizational needs, as the approach acts as a guiding framework for KT evaluation.

In this context, we developed an artifact that represents and synthesizes these two aspects of the proposed approach (Figure 2). Specifically, it is a conceptual model of a framework that will provide stakeholders with (i) a set of input variables, (ii) support for selecting the KT evaluation process best suited to the application context, and (iii) a guidance document outlining key elements of this process identified in the literature. The study on KT evaluation is also relevant to the field of Information Systems, as the effectiveness of KT directly impacts the success of organizational systems. By providing preliminary insights to enhance process management, the study contributes to the improvement of decision-support systems and addresses practical challenges faced by IT professionals.

Future work will include a systematic review with additional sources to expand the theoretical database, semi-structured interviews with experienced professionals to understand KT evaluation in practice, and case studies to assess and refine the KT evaluation support tool.

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