



ORGANIZATIONAL CRITICAL KNOWLEDGE RETENTION: METHOD VALIDATION BY PRACTITIONERS

RETENÇÃO DE CONHECIMENTOS CRÍTICOS ORGANIZACIONAIS: VALIDAÇÃO DE MÉTODO POR ESPECIALISTAS PRATICANTES

RETENCIÓN DE CONOCIMIENTOS CRÍTICOS ORGANIZACIONALES: VALIDACIÓN DE UN MÉTODO POR EXPERTOS PRATICANTES

ABSTRACT

Purpose: This study aims to validate and refine a method designed to support Critical Knowledge Retention by articulating structured stages and practical guidelines to mitigate knowledge loss.

Methodology: A three-round Delphi survey was conducted with Brazilian Knowledge Management specialists. The study integrated qualitative and quantitative analyses across iterative cycles of evaluation and refinement to assess and enhance the proposed artifact.

Findings: The results reveal high convergence of expert views, who assessed the artifact - ReConheCE^β Method - as useful, understandable, coherent, adaptable, feasible and robust. The study also generated a curated set of 31 knowledge retention practices, which were validated and ranked by experts according to their practical relevance.

Research limitations: The use of a non-probabilistic and exclusively Brazilian practitioner sample limits the generalization of the findings and indicates the need for field testing and cross-cultural validation in other organizational contexts.

Practical implications: The method provides structured and actionable guidance for mitigating critical knowledge loss, supporting organizations in designing and implementing feasible and context-sensitive Knowledge Retention initiatives.

Theoretical implications: This study contributes to Knowledge Retention theory by systematizing essential stages, integrating emerging Knowledge Management themes and offering an artifact aligned with both academic literature and practitioner experience.

Social implications: Mitigating knowledge loss contributes to SDG 8 (Sustainable Development Goal), as sustainable economic growth requires organizational continuity, which can be affected in cases of suppression of critical knowledge.

Originality/value: The paper proposes an original and expert-validated method that connects literature and emerging developments, extending theoretical and practical perspectives on Knowledge Retention.

Keywords: Knowledge Retention; Critical Knowledge; Knowledge Management (KM).

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RESUMO

Objetivo: validar e aprimorar um método voltado para a Retenção de Conhecimentos Críticos organizacionais, definindo etapas e diretrizes práticas para mitigar a perda de conhecimentos.

Metodologia: os autores conduziram um Survey Delphi de três rodadas com especialistas brasileiros em Gestão do Conhecimento. O estudo integrou análises qualitativas e quantitativas em ciclos iterativos de avaliação e refinamento para avaliar e aprimorar o artefato proposto.

Resultados: os resultados indicam alta convergência entre os especialistas, que avaliaram o artefato criado, Método ReConheCE^β, como útil, compreensível, coerente, adaptável, viável e robusto. O estudo também gerou um portfólio com 31 práticas indicadas para a retenção do conhecimento, validadas e organizadas pelos especialistas, segundo relevância prática.

Limitações da pesquisa: o uso de amostra não probabilística e exclusivamente brasileira restringe a generalização dos resultados e indica a necessidade de testes de campo e validações em contextos internacionais.

Implicações práticas: o método oferece orientação prática e estruturada para mitigar a perda de conhecimentos críticos, apoiando organizações na implementação de programas viáveis e adaptáveis de Retenção de Conhecimentos.

Implicações teóricas: o estudo avança a teoria da retenção de conhecimentos ao sistematizar etapas essenciais, integrar temas emergentes e oferecer um artefato alinhado à literatura e à prática de Gestão do Conhecimento.

Implicações sociais: a mitigação da perda de conhecimentos contribui para o ODS 8 (Objetivo de Desenvolvimento Sustentável), pois o crescimento econômico sustentável requer continuidade organizacional que pode ser afetada em casos de supressão de conhecimentos críticos.

Originalidade/valor: proposição de um método inédito, validado por especialistas, que integra literatura consolidada e temas emergentes, ampliando as abordagens teóricas e práticas da Retenção de Conhecimentos.

Palavras-chave: Retenção de Conhecimentos; Conhecimentos Críticos; Gestão do Conhecimento.

RESUMEN

Objetivo: Validar y perfeccionar un método orientado a la Retención de Conocimientos Críticos organizacionales, definiendo etapas y directrices prácticas para mitigar la pérdida de conocimientos.

Metodología: Se empleó un Delphi Survey de tres rondas con especialistas brasileños en Gestión del Conocimiento, integrando análisis cualitativos y cuantitativos en ciclos iterativos de evaluación y refinamiento para validar y mejorar el artefacto propuesto.

Resultados: Los hallazgos evidencian una alta convergencia entre los especialistas, quienes evaluaron el artefacto desarrollado - Método ReConheCE^β - como útil, comprensible, coherente, adaptable, viable y robusto. El estudio también generó un repertorio de 31 prácticas recomendadas para la retención de conocimientos, validadas y organizadas por los expertos según su relevancia práctica.

Limitaciones de la investigación: El uso de una muestra no probabilística y exclusivamente brasileña limita la generalización de los resultados e indica la necesidad de realizar pruebas de campo y validaciones en contextos internacionales.

Implicaciones prácticas: El método ofrece orientación práctica y estructurada para mitigar la pérdida de conocimientos críticos, apoyando a las organizaciones en la implementación de programas factibles y adaptables de Retención de Conocimientos.

Implicaciones teóricas: El estudio avanza la teoría de la Retención de Conocimientos al sistematizar etapas esenciales, integrar temas emergentes y ofrecer un artefacto alineado tanto con la literatura como con la práctica en Gestión del Conocimiento.

Implicaciones sociales: mitigar la pérdida de conocimiento contribuye al ODS 8 (Objetivo de Desarrollo Sostenible), ya que el crecimiento económico sostenible requiere continuidad organizativa, la cual puede verse afectada en casos de supresión de conocimiento crítico.



Originalidad/valor: El trabajo propone un método novedoso, validado por especialistas, que integra literatura consolidada y temas emergentes, ampliando los enfoques teóricos y prácticos de la Retención de Conocimientos.

Palabras Clave: Retención de Conocimientos; Conocimientos Críticos; Gestión del Conocimiento.

INTRODUCTION

Knowledge loss is one of the issues that Knowledge Management (KM) aims to mitigate. It may occur in various forms, such as voluntary employee departures, layoffs, retirements, mergers & acquisitions (M&A), outsourcing, resistance to change and learning, the firm's technological readiness, collapse of communication technologies and digital platforms, and unexpected incidents (Ensslin et al., 2020; Sumbal et al., 2023). Knowledge loss is costly to organizations, whether due to losses from failed processes, products, and services, or as a result of high expenditures on acquiring external knowledge, such as consulting services (Davenport and Prusak, 2003).

Knowledge Retention – KR is the KM sub-discipline responsible for addressing the problem of knowledge loss (Sumbal et al., 2017). Although KR is not limited to retirements, this subfield of KM gained prominence at the beginning of the 21st century due to the mass retirement of the Baby Boomer generation, accompanied by an apparent lesser inclination among younger generations to remain in the same job for many years (Sanz & Hovell, 2021). KR is also understood as one of the processes comprising organizational learning, a discipline aimed at continuous organizational improvement that is positively affected by KM adoption (Argote & Miron-Spektor, 2021; Nyuga & Tanova, 2024).

Sanz and Hovell (2021) argue that KR should be carried out only in relation to critical knowledge, which is reasonable when considering the technical difficulties involved, the large volumes of existing knowledge, and the limitation of organizational resources (Levy, 2011; Serrat, 2017). Considering the business impact of Critical Knowledge Retention (CKR), the perspectives of practitioners and specialists in the field

must be considered. According to the KM priorities and trends report for 2025, a document based on a worldwide survey conducted with 340 KM practitioners or specialists (American Productivity & Quality Center [APQC], 2025), the second highest global KM priority was the critical knowledge identification – mapping or prioritization. The same report indicated that the third greatest KM opportunity is that retirements and employee turnover make knowledge capturing and transferring essential. Therefore, CKR proves to be a relevant and timely subject, both in academia and among practitioners.

Despite organizational recognition of the existence and relevance of the knowledge loss issue, Singh and Gupta (2021), Ensslin et al. (2020), and Levallet and Chan (2019) assert that organizations often lack methods to guide them in retaining critical organizational knowledge. Ari-many-Serrat et al. (2024) point out difficulties in implementing KR and call for studies proposing methods, models, and frameworks to support the establishment of KR programs. Nevertheless, some studies indicate a shortage of action-oriented methodologies in KR (Sanz & Hovell, 2021). Henz and Oliveira (2024) also highlight the need for further research identifying practices to support KM, while Phaladi (2025) states that there are few empirical studies exploring knowledge retention approaches. Sumbal et al. (2017) further note that, in most cases, organizations mitigate such loss through isolated projects, when the more appropriate solution would be to establish strategic and permanent CKR programs. Considering CKR as a mitigation measure for knowledge loss, the demand for a method addressing organizational CKR in a comprehensive, permanent, and strategic manner is justified from a theoretical and practical perspective became evident.

From the perspective of contemporary organizational practice, a recent report (APQC, 2025) based on a survey conducted with 1,000 global participants identified concern among organizations regarding organizational knowledge loss resulting from retirements. APQC (2025) estimates that the average retirement rate over the next five years may reach 51% of the current workforce. The report also revealed that most organizations are in the early stages of developing



KM programs aimed at mitigating knowledge loss. For 20% of the managers or directors of the organizations involved, knowledge loss is a critical concern for the organizational mission. This business perspective reinforces the relevance, timeliness the need for more practical approaches to Knowledge Retention, particularly when considering the main reason executives avoid addressing the threat of organizational knowledge loss is that they have no idea how to tackle the problem (DeLong, 2004).

In a nutshell, organizations lack structured and comprehensive methods to guide them in the strategic retention of critical knowledge, exposing them to the risk of irreversible losses of intellectual capital. This study is guided by the question: "What steps should comprise an effective method for organizational Critical Knowledge Retention?" Accordingly, the objective of this study is to validate and refine a method for organizational CKR, defining its steps and guidelines for practical application.

The main output of this research is the validation of a method for CKR, yielding the ReConheCE^β Method as its product. This artifact advances empirically upon the original theoretical artifact from which it originated (Alfenas et al., 2025), having been empirically refined and being applicable as a method to guide organizational actions aimed at Critical Knowledge Retention.

Beyond this introduction, the study is organized as follows: Section 2 comprises the theoretical framework covering the themes of Knowledge Management, Retention, and Critical Knowledge, as well as the presentation of the theoretical artifact; Section 3 presents the methodology based on the Delphi method with KM specialists; Section 4 provides the analysis of the results; and Section 5 presents the conclusions and the study limitations.

THEORETICAL BACKGROUND

This section defines Knowledge Management and relates it to Knowledge Retention and Critical Knowledge. Existing CKR artifacts are discussed, justifying the choice of the artifact validated in this study.

Knowledge Management, Retention, and Critical Knowledge

Knowledge Management concerns the extraction and development of knowledge assets with the purpose of advancing organizational objectives (Davenport and Prusak, 2003). Knowledge Retention is a KM subdiscipline responsible for addressing knowledge loss (Sumbal et al., 2017). Within the scope of this research, KR, is not understood merely as one of the knowledge processes (Girdauskienė and Savanevičienė 2007), but it is understood in a broader conception, as an objective or intended outcome of KM (Sanz and Hovell, 2021; Argote et al. 2003).

Given the vastness of organizational knowledge and the limited resources to manage them, retention efforts must be prioritized towards Critical Knowledge (Levy, 2011; Sanz & Hovell, 2021; Serrat, 2017), which is understood as skills, expertise, routines, and relational knowledge characterized by their utility, relevance, quality, rarity, and difficulty of acquisition (Bibi, 2024; Miranda Junior et al., 2023).

Previous KM literature highlights the relationship between Critical Knowledge and innovation, organizational performance, the achievement of corporate objectives and goals, adherence to deadlines, and the pursuit of success and sustainable competitive advantage (Dube & Ngulube, 2013; Parise et al., 2006; Schmitt et al., 2012; Tochilov et al., 2021). Another characteristic of Critical Knowledge is that it must be at risk of loss, which could severely impact business operations, safety, and organizational continuity (Ensslin et al., 2020; IAEA, 2022; Wane & Santos, 2017).

The next section aims to present the CKR-oriented artifacts available in the literature.

Theoretical Artifact with Steps for CKR

The literature search included theoretical artifacts detailing the recommended sequence of actions toward the objective of knowledge retention, highlighting the importance of identifying and prioritizing Critical Knowledge, and applicable to any type of organization. Brazilian Research Agency Capes Periodicals Portal, which includes Scopus and Web of Science, was used



as a database between May and June 2024, with no filters applied for article dates. In Portuguese and English, the search terms were: (“knowledge retention” OR “knowledge preservation”) AND (“knowledge management”) AND (methods OR methodology OR methodologies) AND (organizational OR company OR organization OR corporate). Following a review of the abstracts, 18 articles were selected, to which five additional works were added through purposive sampling due to their attributed relevance.

From the corpus of 23 articles, four knowledge retention artifacts were identified and discussed as follows.

Doan et al. (2011) proposed a knowledge retention model aimed at small and medium-sized enterprises and critical knowledge, aligned with business processes and comprising a three-stage cycle: initiation, implementation, and evaluation. Additionally, the authors highlight the importance of aligning this retention process with a knowledge retention strategy, human resources practices, and a learning culture.

Levy (2011) proposed a framework aimed at minimizing organizational knowledge loss, comprising four stages: a preliminary process initiation stage; definition of the KR scope; knowledge transfer; and integration of knowledge into organizational activities.

Boyles et al. (2009) developed a flowchart with steps focused on CKR in organizations in the nuclear sector. The flow comprises three main stages. The first is a knowledge loss risk assessment, which considers the risk of employee departure, as well as the knowledge and skills they hold and the difficulty of replacing such knowledge. The second stage involves planning and implementing a critical knowledge capture approach, encompassing activities such as knowledge and skills mapping essential to the organization, assessing the consequences of potential knowledge loss, mitigation actions, and planning Knowledge Retention practices to be subsequently implemented. The third stage is monitoring and evaluation, which involves establishing metrics, assessing projects, and identifying recurring issues.

Nevertheless, these three artifacts have some limitations. The artifact by Levy (2011) does

not address Critical Knowledge the prioritization. Furthermore, the artifacts by Doan et al. (2011) and Boyles et al. (2009) are aimed at specific types of organizations — small and medium-sized enterprises and the nuclear sector, respectively. Additionally, none of the three artifacts presents a structured list of KM practices recommended for the CKR objective. Hence, all three were discarded.

Only the artifact developed by Alfenas et al. (2025) was found to encompass all the desired characteristics. Figure 1 illustrates this artifact. The term method was adopted to define the artifact, since “a method is a set of steps (an algorithm or guidance) used to perform a task” (Lacerda et al. 2013, p. 749).

The theoretical method of Alfenas et al. (2025) proposed that a KM program oriented toward the CKR objective should follow four stages: preliminary diagnosis, pilot project, program planning, and program implementation. In this proposal, the implementation stage would be carried out in cycles in which each retention project would complete a full cycle comprising four additional stages and would feedback into the system so that subsequent projects would be subject to continuous improvements, as occurs in the PDCA Cycle — plan, do, check, act (Deming, 1982).

The first stage of the preliminary diagnosis involves raising awareness among senior management, defining which organizational knowledge is considered critical, assessing the risk of loss of this critical knowledge, and identifying the types of loss that pose the greatest threat to critical knowledge in that particular scenario and moment (Alfenas et al., 2025).

The second stage of the method is the pilot project, which is a knowledge retention project conducted in a real environment but with a reduced scope and timeline. The pilot was chronologically positioned at this point to demonstrate to leadership, as early as possible, the business value of knowledge retention. This advancement to before the planning stage would aim to avoid repeating the experiences reported by organizations that undertook lengthy planning processes, which delayed the perception of value and undermined the credibility and implementation of KM.



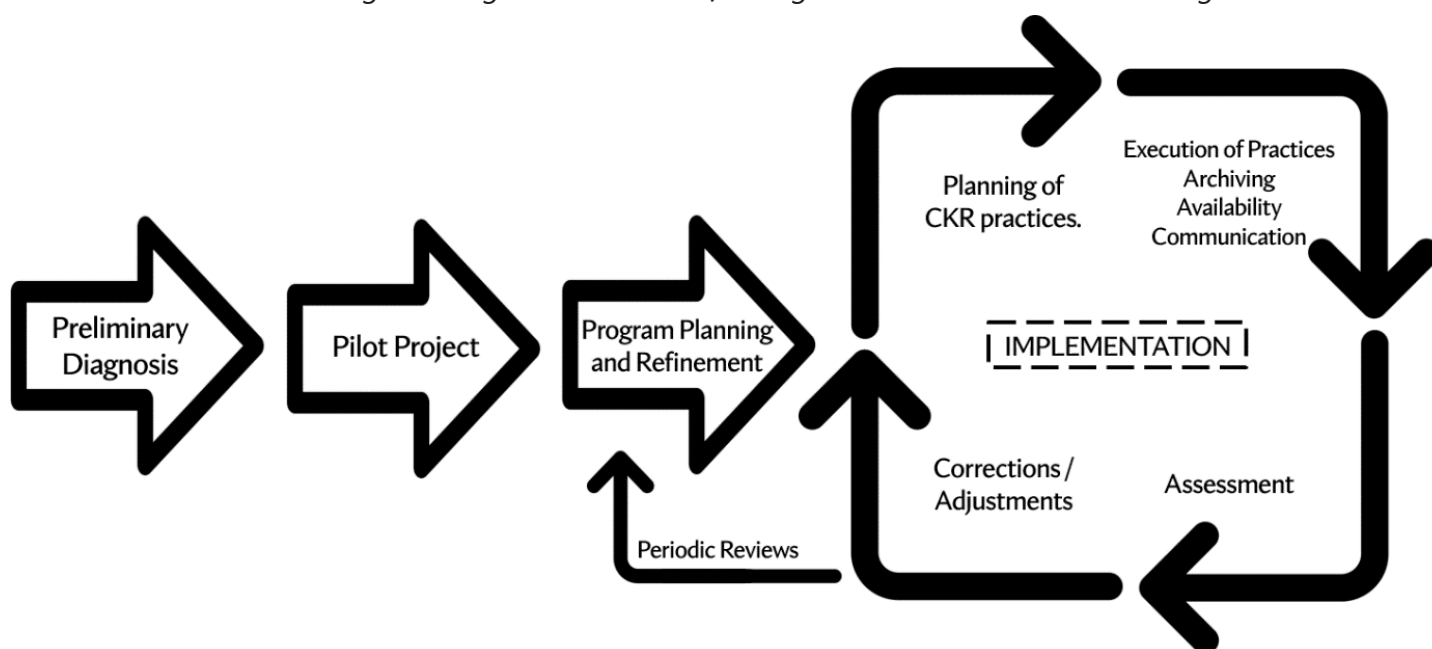
The KM program planning is the third stage of the method and should take place if the pilot project is positively evaluated and the organization decides to expand the scope and establish a permanent KM program oriented toward CKR. During the planning stage, the following features must be defined: KM governance, program scope, assessment of organizational KM maturity, the risk of critical knowledge loss, the impacts of such loss, critical knowledge mapping, and performance indicators.

The fourth and final stage of the method (Figure 1) is implementation, which would be carried out through the execution of KM practi-

ces oriented toward knowledge retention. These practices would be implemented through projects comprising four stages: practice planning, which must address the questions of who, why, what, how, how much, when, and where (5W2H); practice execution, during which knowledge is captured or transferred and any resulting knowledge products (documents, procedures, workflows, videos, among others) must be archived, made available to potential users, and communicated; and the final two implementation stages are evaluation and adjustments carried out using Lessons Learned.

Figure 1

Theoretical Knowledge Management Method for Organizational Critical Knowledge Retention



Source: Alfenas et al. (2025).

Alfenas et al. (2025) proposed an artifact that meets the following requirements recommended in the literature: serving as a guide for the establishment of KR programs (Arimany-Serrat et al., 2024); supporting the organization (Sanz & Hovell, 2021); and identifying practices to assist the process (Henz & Oliveira, 2024). However, this artifact is theoretical in nature and does not address the need for further empirical studies exploring knowledge retention strategies (Phaladi, 2025). The present research seeks to advance in empirical terms upon the artifact of Alfenas et al. (2025).

METHODOLOGY

Brazilian Knowledge Management practitioners with experience in Knowledge Retention evaluated and refined the theoretical artifact proposed by Alfenas et al. (2025) – Figure 1 –, yielding the ReConheCE^β Method as its product (Figure 4, presented further ahead), which was also evaluated.

In addition to the overall evaluation of the ReConheCE^β Method, a specific assessment of the KM Practice Portfolio was conducted. This portfolio is a supporting element available to the method's users as a list of KM practices recommended for the CKR objective. The portfolio evaluation aimed to identify which KM practices



the experts considered relevant to the CKR objective. Participants also contributed to establishing a ranking to position the most relevant KM practices at the top of the listings, enabling prioritization by the method's users.

Practitioner experts validated the artifacts through a three-round Survey based on the Delphi Method, which is indicated for seeking expert consensus on a complex and emerging topic, through a qualitative, exploratory approach, when there is a limited number of geographically dispersed experts. Delphi Method is a well-established research tool considered rigorous in academia and extensively used (Birko et al., 2015; Flostrand et al., 2020; Merfeld et al., 2019). The conduct of the Delphi Method in this

study followed the six steps (Figure 2) proposed by Flostrand et al. (2020).

The inclusion criteria for the group of practitioner experts in the research were: an undergraduate degree (minimum educational requirement), with some form of complementary training being desirable (courses, books, or postgraduate specialization in KM); a minimum age of 25 years to exclude junior professionals; a minimum of three years of experience in KM projects involving KR; voluntary participation in the research; and the agreement to an informed consent form, which described the research ethical aspects and guaranteed the anonymity of participants.

Figure 2
Steps for Conducting the Delphi Survey

Stage	Definition	Measures Undertaken
First	Identify, recruit, and select the expert panel.	Disseminated among members of the Brazilian Knowledge Management Society (SBGC) with the authorization and support of the organization's president.
Second	First Survey round. Aimed to evaluate the initial proposal of the artifact and collect suggestions for its improvement.	Distribution of the questionnaire, which evaluated artifact quality criteria and included open-ended questions for suggestions.
Third	Preparation of a concise report on the first round of responses.	Report aggregated the first round of responses. Quantitative data organized and calculated in Microsoft Excel. Qualitative data organized, coded, categorized, and inferences drawn, in accordance with Content Analysis (Bardin, 2016).
Fourth	Distribution of the first-round report alongside the second Survey round questionnaire, which evaluated suggestions from the first round and addressed some uncertainties generated in the previous round	Report distributed as text and video. Second-round questions evaluated the placement of the pilot project within the method and the retention, inclusion, or exclusion of eight knowledge retention practices. Open-ended questions for suggestions.
Fifth	Distribution of the second-round report alongside the third Survey round questionnaire, which evaluated the final version of the artifact.	Distribution of the questionnaire, which evaluated artifact quality criteria and included open-ended questions for observations.
Sixth	Preparation of the final report and measures related to agreed-upon compensation.	Preparation of the final report and measures related to agreed-upon compensation.

Source: elaborated by the authors, based on Flostrand et al. (2020).

The three Survey rounds took place between September and December 2024, and data collection made use of the SurveyMonkey tool. The number of experts indicated for a Delphi Survey, which operates with non-probabilistic

sampling using homogeneous groups, is 10 to 15 specialists (Flostrand et al., 2020); therefore, the study's goal was to reach a minimum of 10 experts with complete responses at the end of the three rounds.



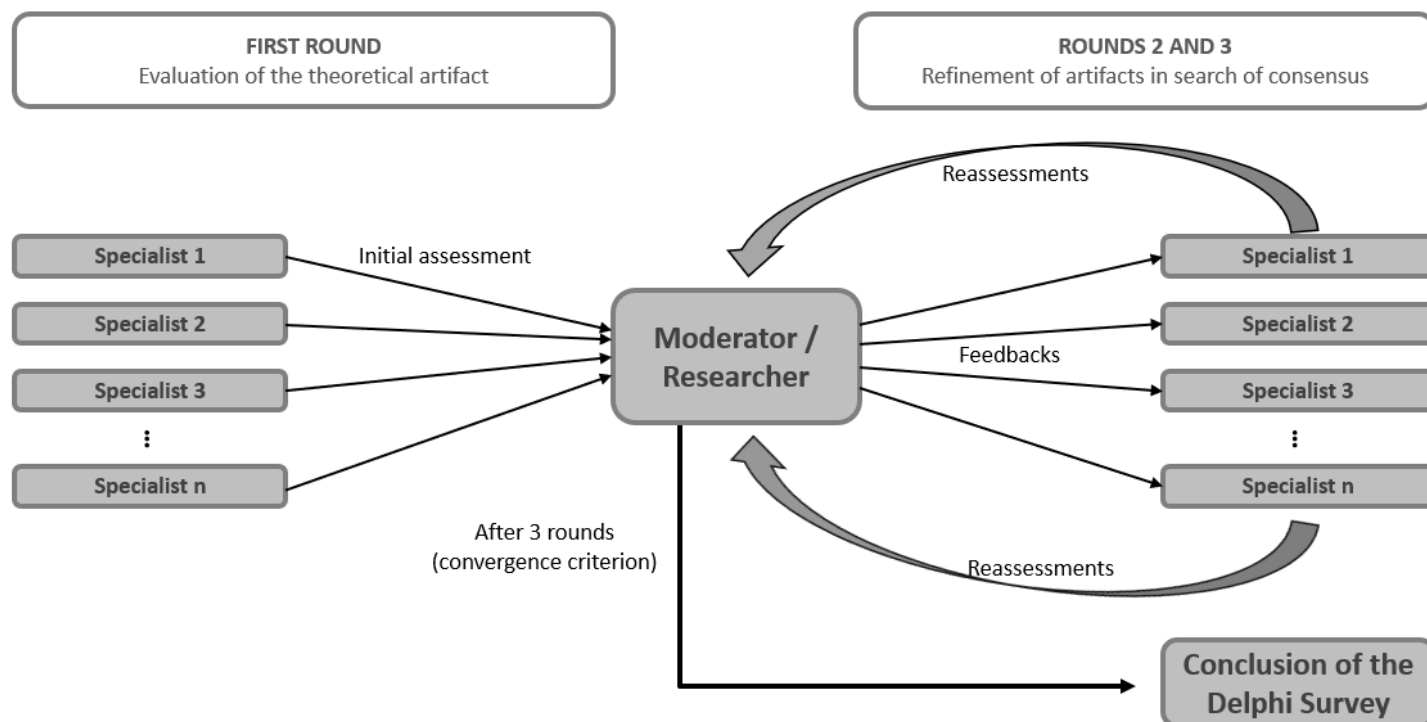
The survey statements aimed to evaluate the criteria of utility, feasibility, completeness, comprehensibility, fidelity to the phenomenon under study, coherence, robustness, and adaptability (Prat et al., 2015), as well as the level of human impact on the artifact's performance (Aken et al., 2016). The participating experts indicated their agreement degree on a 5-point Likert scale. Pilots or pre-tests prior to the official administration of the three rounds were conducted to identify and eliminate potential issues, and to estimate the approximate time required to respond (Malhotra, 2005).

It is important to clarify that the study reported in this article is part of a trilogy of studies within a broader research project that encompassed an initial stage of theoretical artifact creation (Alfenas et al., 2025), followed by its validation by practitioner experts (the present study), and concluded with a field test reported in a subsequent study. In this context, Design Science Research (DSR) served as the overarching method guiding all three studies, with the objective of creating generalizable artifacts to solve organizational problems (Peffer et al., 2007).

The DSR method was applied by adapting the steps proposed by Peffer et al. (2007), with the present study contributing to the demonstration, evaluation, design and development, and communication stages. Demonstration occurred through the presentation of the artifact to practitioner experts during the Delphi Survey; this step was followed by evaluations and suggestions, which served as the basis for the redesign of the artifact and a new evaluation in the third round of responses. Finally, the communication of the study took place at an academic event (Alfenas & Carvalho, 2025) and through the present publication.

After each round of responses (Figure 3), it was necessary to redesign the artifact. Thus, as suggested by Aken et al. (2016) regarding the DSR method and in accordance with the three evaluation stages of the Delphi Method (Birko et al., 2015), internal evaluations followed each cycle of external evaluations (Delphi Survey), generating a new and refined version of the artifact through successive cycles of feedback and refinement.

Figure 3
Three-Round Delphi Method Process



Source: elaborated by the authors, adapted from Gnatzy et al. (2011) and Birko et al. (2015).



ANALYSIS OF RESULTS

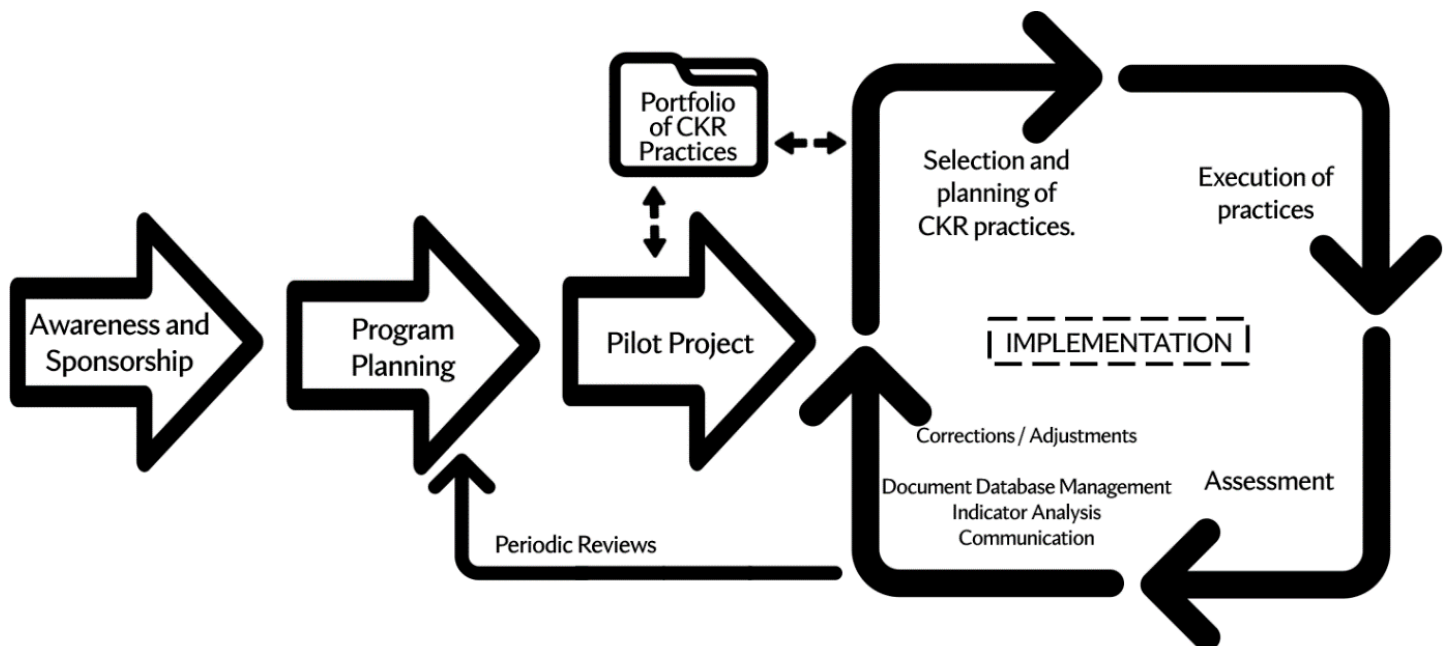
This section discusses the study's findings, connecting them with previous KM studies.

Among the 23 experts who participated in the first round of the Delphi Survey, 18 participated in the second round and 15 reached the third round. The group of practitioner experts had a mean age of 53 years (minimum of 42 and maximum of 68), a mean professional experience of 29 years (minimum of 15 and maximum of 45), with a mean of 9 years (minimum of 3 and maximum of 20) working on KM projects involving KR. The gender distribution was balanced, with a slight predominance of women (53%) over men (47%). The most prevalent educational level (47% of participants) was postgraduate (Specialization, Professional Development, or MBA), followed by master's degree (40%) and doctorate (13%). Plurality was also identified in the professional roles held by participants, with the three most fre-

quently cited being management or supervisory positions (33%), analysts (27%), and specialists (20%). A wide variety of complementary KM-related training was also observed, with the most prevalent being short-term courses or training programs (53%), MBA or postgraduate degrees in the field (27%), and technical-scientific events in the area (20%). It can be asserted that this is an experienced, qualified, and, to some extent, diverse group regarding age, gender, role, and complementary educational background.

The total of 15 participants retained through the final round met the criteria established by Flostrand et al. (2020) and Birko et al. (2015). Regarding participant diversity, observed in relation to age, gender, role, and complementary educational background, Beiderbeck et al. (2021) note that diversity has a positive impact on the reliability of Delphi Survey results, as it also tends to reduce the emergence of cognitive biases.

Figure 4
ReConheCE^B Method



Source: study results.

Following the evaluations and adjustments carried out across the three rounds of the Delphi Survey, the artifact generated in this study is presented in Figure 4, and its components are discussed as follows.

The first stage of the ReConheCE^B Method (Figure 4) is awareness and sponsorship. In the awareness stage, it is advisable to present knowledge retention as a means of mitigating various types of knowledge loss, which may stem from



retirements, layoffs, voluntary departures, organizational forgetting, mergers, acquisitions, outsourcing, and other causes (Daghfous & Belkhodja, 2019; Ensslin et al., 2020). Senior organizational leadership sponsorship is fundamental, given the finding that lack of top management support is one of the main factors hindering organizational knowledge retention (Martins & Meyer, 2012), with leaders being responsible for creating adequate working conditions and serving as behavioural role models for the other members of the organization (Corrêa, 2023).

The second stage of the method (Figure 4) is the planning of the knowledge retention program, which involves undertaking a series of measures depending on the organizational needs assessed by those responsible for implementing the method. The measures in this stage may include the establishment of strategic principles and guidelines (Cho & Yi, 2015), determination of scope (Levy, 2011), creation of a governance structure (Peltokorpi & Tsuyuki, 2017), identification of necessary resources (Mazorodze & Buckley, 2019), creation of confidentiality criteria (Bertino et al., 2006), KM maturity assessment (Bougoulia & Glykas, 2022), Critical Knowledge mapping (Driessen et al., 2007), classification and indexing of knowledge through taxonomy and ontology (Lytras & Pouloudi, 2006), assessment of the risks and impacts of knowledge loss at the departmental and/or individual level (Massingham, 2018; Oliva et al., 2022), selection of a document or Content Management System (CMS) (Haug, 2012), definition of metrics and indicators (Martin, 2004), and establishment of a program communication plan (O'Sullivan, 2007). Organizations should review such planning periodically (Batista, 2012).

Several actions described in the planning stage may be supported by tools available in the literature. Given its prominent role in the ReConheCE^β Method, it is worth noting that the Critical Knowledge mapping can be carried out with the support of existing tools, such as those provided by the Brazilian Knowledge Management Society (Fukunaga, 2024) or the International Atomic Energy Agency (IAEA, 2017).

It is noteworthy that the set of measures for the planning stage underwent some changes during the evaluation rounds conducted by the practitioner experts, yet its final version remained consistent with the KM literature. Adding to this finding the observation of the participants' high educational level, it may be inferred that the consulted experts integrate academic knowledge into their professional knowledge retention practices.

The third stage of the method (Figure 4) is the pilot project implementation, which is recommended as a means of introducing innovations, testing tools on a reduced scope, and assessing the sustainability of an idea before its organization-wide implementation (McAslan et al., 2021; Putri et al., 2023). The study participants did not contest the existence of a pilot project; however, its placement within the method was a point of some disagreement. After the three rounds of the study, the majority (61%) chose to keep it as the third stage of the method, following the full planning stage, while 39% of participants preferred to advance the pilot to the second stage, based on the argument that it could contribute to demonstrating, as early as possible (given the lengthy time required for planning), the potential business contributions of knowledge retention (Newman, 2013; Levy, 2011). Regarding the majority's preference for positioning the pilot project as the third stage of the method, Expert 5 commented: "I believe it is very important for the pilot to succeed, which is why I placed it after all possible preparation." The dominant opinion of the expert group was adopted; however, given that a considerable number of participants held a different view, the method includes a note on the possibility of advancing the pilot when a window of opportunity arises, when there is a need to demonstrate KM's Return On Investment (ROI) in more pragmatic organizations, or when there is urgency in a particular retention project.

The fourth and final stage of the method (Figure 4) is implementation, which is the most important stage of the method, as it is when practices are executed and knowledge retention occurs through the implementation of the practices (Levy, 2011) indicated by the Practice Portfolio. The implementation of the ReConheCE^β Method



operates as a PDCA cycle, as already observed in other KM artifacts (Batista, 2012). Nevertheless, following the recommendations of the practitioner experts, three permanent activities are added upon project completion: document base management, through the addition of products generated by the project; tracking of indicators, in accordance with new data arising after the project; and communication of project actions and results.

Still regarding the inclusion of the three permanent activities, Okatan (2022) states that document management systems are emerging technologies used by KM that have a positive effect on productivity and innovation. Córdova et al. (2016) point out that the appropriate use of indicators can contribute to organizational learning and to improving management processes, while Nezhad and Jenaabadi (2014) identified a significant correlation between communication skills and KM, concluding that communication skills play an effective role in establishing KM.

The ReConheCE^β Method broadens the understanding of CKR by filling gaps in the literature regarding the lack of methods to guide the retention of critical organizational knowledge

(Ensslin et al., 2020; Levallet & Chan, 2019; Singh & Gupta, 2021), by potentially contributing to the establishment of KR programs (Arimany-Serrat et al., 2024), by constituting an action-oriented methodology for KR (Sanz & Hovell, 2021), by identifying KM practices (Henz & Oliveira, 2024), and by having been created in an empirical study that explored knowledge retention strategies (Phaladi, 2025).

For the purpose of presenting the results of questions whose statements were evaluated through a five-point Likert scale, 'level of agreement' was interpreted as the sum of the percentages of the 'strongly agree' and 'agree' options, while the expression "level of disagreement" refers to the sum of the percentages of the "strongly disagree" and "disagree" options.

The participating experts provided their views on the quality criteria attributed to the artifact through statements (Figure 5) and open-ended questions ("Please use the space below if you wish to make any additional observations about the presented Method" and "If you have any final comments on this research, the proposed Method, or the proposed Practice Portfolio, please use the space below").

Figure 5

Evaluations of the ReConheCE^β Method According to the Quality Criteria of Prat et al. (2015)

Quality Criterion	Statement	Response Options (5-point Likert Scale)				
		Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Utility	The proposed method can be used as a guide in initiatives aimed at Organizational Critical Knowledge Retention.	0%	0%	0%	40%	60%
Fidelity to the phenomenon under study	The method can contribute to mitigating knowledge loss and promoting the retention of critical organizational knowledge.	0%	0%	0%	53%	47%
Comprehensibility	The content of the method is comprehensible.	0%	0%	0%	40%	60%
Coherence	The content of the method is coherent.	0%	0%	0%	27%	73%
	The chronological order of execution proposed in the method is coherent.	0%	0%	0%	60%	40%
Adaptability	The proposed method could be used in different types of organizations.	0%	7%	7%	40%	47%
Feasibility	The use of the method in organizations would be feasible.	0%	0%	0%	47%	53%
Robustness	The proposed method appears to be robust.	0%	0%	0%	53%	47%

Source: study results.



All statements presented in Figure 5 obtained a level of agreement exceeding 87%. It is possible to infer that there is a convergence of opinions among the participating experts, who considered the method useful, faithful to the phenomenon under study (in the sense of being able to contribute to the CKR objective), comprehensible, coherent, chronologically consistent, adaptable, feasible, and robust. Some of these inferences are reinforced by participants' comments in the open-ended questions, such as "I believe the method can be efficient" (Expert 8), "a fine product" (Expert 12), and "the method appears to be quite robust... overall, the method is consistent and applicable to various sectors" (Expert 13).

The participating experts also indicated their levels of agreement regarding a statement on the level of human impact on the artifact's performance (Aken et al., 2016): "The success of the Method's implementation will be proportional to the KM experience of the person responsible for its implementation. The more experienced the responsible professional, the greater the likelihood of successful implementation." A minority of 7% strongly disagreed with the statement, 13% neither agreed nor disagreed, 40% agreed, and a further 40% strongly agreed. Therefore, with a level of agreement of 80%, participants demonstrated that they consider the human factor to have an influence on the method's performance. Two open-ended comments provide indications of the reasons behind this convergent opinion: "I believe the method can be efficient, but people are also fundamental. If the individual does not believe in KM or in knowledge retention, the method will not achieve its intended objective" (Expert 8); "The method appears to be quite robust, but it will depend on the characteristics of the organization where implementation is intended and on the knowledge of the professional who will lead the process. Overall, however, the method is consistent and applicable to various sectors" (Expert 13).

The Practice Portfolio is a supporting element for stages three and four (Pilot Project and Implementation) of the ReConheCE^β Method. Following expert evaluation and adjustments, its final version contains 31 KM practices indicated for CKR, divided into four groups: practices that

promote knowledge retention through knowledge transfer, practices based on knowledge documentation, practices based on people management, and supporting technologies (Figure 6).

The practices are presented in Figure 6 according to the ranking carried out by the experts within each group, from the most important (at the top) to the least important (at the bottom). It should be noted, however, that even the practices presented at the bottom were considered relevant by the experts, who not only assigned their order of importance but also evaluated the possibility of excluding practices deemed irrelevant.

Following a suggestion by Expert 5, which the other participants subsequently validated, the practice of Employee Integration (or Onboarding) was added to the Practice Portfolio. Employee Integration consists of actions aimed at promoting and accelerating the integration and learning of new employees, and is considered essential for creating attractive work environments, engaging newcomers, and providing initial training for the performance of new responsibilities (Brødsjø et al., 2023).

To understand the advances that the practitioner experts introduced in the ReConheCE^β Method, three main differences from the theoretical artifact of Alfenas et al. (2025) should be highlighted. The first was the advancement of the planning stage to the second stage of the ReConheCE^β Method, which consequently moved the pilot project to the third stage and created the need to rename the first stage to emphasize the importance of leadership awareness and sponsorship over the preliminary diagnosis. Such a diagnosis would no longer be warranted, given that the planning stage — which includes a more comprehensive diagnosis — had been brought forward. The second difference was the inclusion of the Practice Portfolio within the artifact's structure (Figure 4), highlighting its role as a supporting element for stages 3 (Pilot Project) and 4 (Implementation). The third difference was the inclusion of three permanent activities following the completion of each retention project: document base management, when the project generates one or more documents; tracking of indicators (incorporation of project data); and communication of the project to stakeholders.



It is noted that the artifact resulting from the practitioner experts' contributions contains elements that resonate with current management trends. The inclusion of the permanent activity of tracking indicators connects with the themes of Evidence-Based Management and Business Analytics (BA), which advocate the systematic use of data to support managerial decisions (Hjelle et

al., 2024). The indication of supporting technologies for knowledge retention practices and the inclusion of the permanent activity of document base management foster Digital Transformation by strategically promoting the adoption of new technologies and cultural change (Machado et al., 2021).

Figure 6
Practice Portfolio for the Promotion of CKR and Supporting Technologies

Practice Group	Group Description	Practices	Practice Description
Promotion of CKR through transfer	Practices that can promote CKR through knowledge transfer between people.	Community of Practice	A voluntary group of practitioners who share lessons, methods, and practices on a given topic.
		Meetings	Meetings in which knowledge is transferred between people, particularly in person, for the discussion of project learnings, problem-solving, and other purposes.
Promotion of CKR through documentation	Practices for promoting CKR based on knowledge documentation, whose focus is the documentation method itself rather than the technologies required for that purpose.	Entrevista com Especialistas	Interview for the identification and capture of knowledge.
		Knowledge Mapping / Audit / Inventory	Process for determining where knowledge assets are located and how knowledge flows operate within the organization.
		Written Procedures / Processes	Written documents detailing the performance of a task.
		Lessons Learned	Concise descriptions of knowledge derived from experience.
		Best Practices	Recording and dissemination of the best practices developed within the organization.
		Documentation, in general	Recording and formalization of knowledge in physical or electronic documents.
		Technical Videos	Procedural video or tutorial detailing a relevant task.
		Storytelling	Documentation of professionals' narratives for the sharing of their experiences.
		After Action Review	Detailed account or summary prepared following the execution of a task.
		Social Network / Key Contact Analysis	Mapping of explicit and implicit social relationships and knowledge flows.
Promotion of CKR based on People Management	Practices indicated for CKR that are commonly adopted by People Management.	Exit Interview	Meeting prior to an employee's departure for the capture and recording of knowledge and the understanding of the reasons for leaving.
		Mentoring	Interactive knowledge transfer from a more experienced professional to a less experienced one.
		Career Development	Enhancement of careers and responsibilities as a strategy for retaining people and knowledge within the organization.
		Succession Planning	Identification and development of individuals to assume strategic positions.
		Competency Mapping / Yellow Pages	Mapping and assessment of existing competencies.
		Training	In-person or remote training sessions or simulations.
		Job Rotation	Variation of responsibilities and functions for the professional development of employees.
		Training, Education, or Engagement Events	Lectures, courses, workshops, seminars, or similar initiatives for professional development and education, as well as for the dissemination of KM, recognition of partners, and employee engagement.
		Retirement Planning	Planning of retirements taking into account the need for knowledge retention.
		Job Shadowing	Learning through observation of task execution without interference.
		Recognition and Reward Program	Informal and formal rewards for achieving knowledge-sharing goals.
		Hiring of Specialists	Recruitment of specialists in knowledge at risk of loss.
		Onboarding / Employee Integration	Aimed at accelerating the learning and integration of newly hired employees or those transferred to other areas. May include orientations, training, mentoring, feedback, and support for professional adaptation and development.
Supporting technologies for CKR promotion practices	Technologies that can be employed in support of CKR practices and that may provide scalability gains.	Coaching	A relationship between individuals designed to improve the learning and performance of individuals and teams.
		Rehiring of Retirees	Engagement of retired professionals to conduct consulting, training, courses, or temporary work, with a focus on the transfer of critical knowledge at risk of loss.
		Document Base	Database for the archiving and retrieval of documented knowledge.
		Tecnologias de Comunicação	Systems supporting formal and informal communication.
		Artificial Intelligence	Application of Artificial Intelligence or Machine Learning to knowledge retention.
		Wikis	Collective online creation and modification of knowledge in web-based hypertext format.

Source: study results.



CONCLUSION

This empirical study aimed to validate and refine a method for organizational Critical Knowledge Retention. Its product, the ReConheCE^β Method (Figure 4), presents a sequence of stages designed to mitigate the problem of organizational critical knowledge loss and is indicated for organizations of any sector or size.

In terms of practical contributions, this method has the potential to generate practical implications for organizations facing the problem of critical knowledge loss and seeking objective and feasible guidance for addressing it.

Regarding theoretical contributions, the study demonstrated that the created artifact dialogues with both the KM literature and emerging themes in the Management field, such as Evidence-Based Management, Organizational Learning, and Digital Transformation. This research is understood to contribute to broadening the understanding of CKR by generating an artifact that encompasses knowledge consistent with the existing literature, while also contributing to filling gaps in the literature, as presented in the results.

With respect to methodological contributions, the combined use of methods employed in this research is evaluated positively. The Design Science Research method, which guides a trilogy of studies aimed at creating an artifact for CKR, was combined with the Integrative Literature Review and the Delphi Method. Regarding this association of methods, no negative aspects appeared from this integration. On the contrary, they are understood to have operated in harmony, with the contribution of each proving synergistic.

KM practitioner experts with experience in knowledge retention defined and sequenced the steps necessary for retaining critical organizational knowledge. In chronological order, these are: leadership awareness and sponsorship; knowledge retention program planning; pilot project; and implementation, which should follow a cycle like the PDCA, with three permanent activities added at the end of each cycle — document base management, tracking of indicators, and communication of the knowledge retention project.

The Practice Portfolio (Figure 6) is a supporting element of the method and is of great utility to stages three and four — pilot project and implementation — by presenting a list of 31 KM practices indicated for the knowledge retention objective, arranged in descending order of relevance according to the experts' categorization. Therefore, the proposition of the ReConheCE^β Method adequately fulfils the proposed objective of validating and refining a method for organizational CKR, defining its stages and guidelines for practical application.

This study presents some limitations. The sample of 15 practitioner experts was non-probabilistic; therefore, the results are not generalizable to the entire population. It should also be noted that the participation of Brazilian experts only precludes the possibility of generalizing the results on a global scale.

Future studies are recommended to conduct field tests with the created artifact, which is ready for testing in real environments and situations. Additionally, the artifact may be tested by non-academic practitioners, and for both types of use, adaptations (additions, exclusions, modifications) are encouraged. In view of the intention to prioritize the adaptability of the ReConheCE^β Method over its scalability, appropriate adaptations are recommended, subject to prior evaluation by qualified professionals.

This study departs from the recognition that the loss of Critical Knowledge represents a concrete threat to organizational continuity. The ReConheCE^β Method offers structured guidance to retain corporate knowledge in a strategic, comprehensive, and enduring manner.

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