The role of knowledge management at BSIP TAS Malang in improving public sector performances

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Abstract

Purpose: This study aims to improve civil servant training performance from a knowledge management (KM) perspective in the context of BSIP TAS's transition from a research institution to a standardization agency.

Methodology/Approach: A descriptive qualitative approach was employed, utilizing observation, in-depth interviews, and documentation. KM strategies were mapped using Dalkir's framework, which includes knowledge audit, gap analysis, and the development of a strategy roadmap.

Results/Findings: The findings indicate that BSIP TAS has begun implementing KM through need-based training and informal peer mentoring. However, challenges persist in terms of uneven knowledge distribution and the lack of systematic documentation.

Conclusions: To enhance training performance and prevent knowledge loss, BSIP TAS must strengthen its KM practices by adopting digital systems, formalizing archiving processes, and establishing structured knowledge-sharing forums. These initiatives are crucial for sustainable organizational performance.

Limitations: The study is limited to qualitative data from a single institution in transition, which may affect the generalizability of findings to other organizational contexts.

Contribution: This study advances the KM literature by uniquely applying Dalkir's framework to a government agency undergoing transformation, providing novel theoretical and practical insights into how tailored KM strategies can optimize performance and preserve critical knowledge amidst institutional change.

Keywords: *BSIP TAS Malang, Knowledge Management, Knowledge Transfer, Organizational Strategy, Public Administration*

1. Introduction

Knowledge management (KM) plays a pivotal role in enhancing public-sector performance. As the world increasingly revolves around information, the ability to effectively create, manage, and utilize knowledge has become essential for public organizations that aim to deliver better services. Public sector entities often lag behind their private counterparts in adopting KM practices, which significantly hampers their operational efficiency and performance. According to Baporikar (2017), organizations that prioritize KM can excel in knowledge creation, dissemination, and application, ultimately driving performance improvement in the Indian public sector.

The structured literature review conducted by Massaro, Dumay, and Garlatti (2015) reveals critical insights into the state of KM in the public sector. Their findings indicate that while there is an abundance

of KM research focusing on education and research, there is a notable scarcity of studies exploring its application in crucial public services such as emergency services and law enforcement. This gap signifies a missed opportunity to enhance service delivery through knowledge-based approaches (Massaro et al., 2015). Furthermore, Razzaq et al. (2018) asserted that many governments worldwide have recognized the potential of strategic KM in public policy, positioning it as a central tool for strategy formulation and implementation. This shift aims to foster an environment in which knowledge worker performance can be maximized, thus facilitating improved service delivery in government organizations.

In healthcare management, recent literature highlights the necessity of bridging the gap between managerial knowledge and functional performance. Marques, Nogueira, Gonçalves, and Rocha (2023) discussed how this disconnect can detrimentally affect healthcare organizations, advocating for a focus on enhanced control and negotiation by managers to optimize management processes. This emphasizes the broader theme that effective KM is not merely a function of technical implementation but requires a comprehensive approach that integrates leadership and organizational culture to realize its benefits fully.

Despite the recognized importance of KM, the public sector continues to experience barriers to effective implementation. Knowledge has emerged as a key organizational asset, necessitating the development of robust management strategies to leverage this resource effectively. The author discusses the role of KM in e-governance frameworks to improve operational efficiency and responsiveness in public service delivery (Upadhyay & Kumar, 2020). This reflects the growing consensus that, without a strategic approach to KM, public sector organizations risk diminishing their capacity to serve the public effectively and efficiently.

A critical analysis of these references demonstrates that the transition to a knowledge-driven public sector is multifaceted and requires the coordinated efforts of various stakeholders. First, cultivating a culture that values and rewards knowledge sharing is imperative. This is echoed in research that underscores the importance of not just implementing KM systems but also fostering an environment where employees feel empowered to share insights and collaborate (Massaro et al., 2015; Razzaq et al., 2018). Moreover, addressing the lack of awareness and understanding of KM principles within public entities is essential for overcoming the initial hurdles to effective adoption (Baporikar, 2017).

Successful KM implementation necessitates holistic strategies that integrate technology, personnel, and processes. Public sector organizations must invest in training and development initiatives that equip employees with the skills necessary to navigate KM frameworks effectively (Upadhyay & Kumar, 2020). Furthermore, there must be an emphasis on creating strategic partnerships across different sectors to enhance knowledge exchange and leverage the best practices in service delivery (Razzaq et al., 2018). The interplay between leadership and knowledge processes is significant; leaders must prioritize KM as part of their strategic vision, ensuring that it aligns with organizational goals and public service mandates (Marques et al., 2023).

In summary, KM possesses transformative potential for public sector performance improvement, particularly when strategically applied across various levels of governance. The interplay of organizational culture, employee engagement, leadership support, and technological infrastructure contributes to the successful implementation of KM practices (Massaro et al., 2015; Razzaq et al., 2018). Each of these elements must be carefully considered and woven together to create a coherent KM strategy that not only enhances public sector performance but also fosters a resilient and adaptable public administration capable of meeting the demands of contemporary society.

In the era of rapid and complex change, the government is required to increase responsiveness, efficiency, and transparency in its services. Professional, clean, and accountable government performance is the main requirement in creating public trust and supporting sustainable development (Hisriani, Jamil, & Simamora, 2023). Therefore, strengthening the management system and human resources (HR) is a strategic aspect that cannot be ignored (Nematollahi, Mohammadi, Gholipour, &

Mohammad Esmaeili, 2024). HR that is right on target will support the effectiveness of the organization in achieving its goals (Cahyana & Dewi, 2023). Knowledge is a strategic intellectual asset that has not been optimally utilized in many government agencies. Intellectual capital consists of knowledge possessed by individuals and organizations that, if managed properly, can increase competitiveness and innovation. Unfortunately, the distribution of knowledge in bureaucratic environments is often limited and undocumented; thus, when there is a mutation, retirement, or transfer of employees, the organization is at risk of losing important knowledge (Hafiz & Frinaldi, 2023).

Knowledge management is a strategic solution to ensure the sustainability of knowledge in an organization. Habib and Mehzabin (2024) emphasize the importance of creating, acquiring, disseminating, and utilizing knowledge to improve organizational performance. Previous research by Azizah (2021) showed that the systematic application of knowledge management can increase the competitiveness of institutions and strengthen performance sustainably. BSIP TAS, a technical implementation unit under the Agricultural Instrument Standardization Agency, faces challenges in knowledge distribution due to changes in its organizational structure and low levels of employee education. Data from 2024 show that 40% of BSIP TAS employees are high school graduates, while only 3% have doctoral degrees. This inequality has the potential to hinder the effectiveness of the implementation of increasingly complex tasks, especially amidst the institutional transformation that occurred after the implementation of Minister of Agriculture Regulation Number 13 of 2023.

This study focuses on BSIP TAS, a government agency responsible for inserting specific functions or sectors, which has experienced significant fluctuations in performance between 2019 and 2022. These performance variances underscore the critical need to develop an adaptive and sustainable organizational strategy that can respond effectively to internal challenges and external environmental changes. Although prior research has demonstrated the importance of knowledge management (KM) in enhancing public sector performance, a substantial gap remains in understanding how KM strategies are specifically applied within the BSIP TAS's operational context. Most existing studies tend to provide generalized frameworks without considering the unique organizational structure, culture, and resource constraints faced by agencies such as the BSIP TAS. This gap limits the practical implementation and effectiveness of KM initiatives tailored to these agencies. Therefore, the specific research question of this study is: How can targeted KM strategies be effectively implemented within the BSIP TAS to stabilize performance, enhance organizational efficiency, and support adaptation to evolving governance challenges? This study aims to explore this question to contribute both theoretically and practically, offering insights into how KM can be strategically employed to bolster resilience and responsiveness in specialized government agencies navigating complex socioeconomic landscapes.

2. Literature review and hypotheses development

Knowledge management (KM), or management knowledge, is a strategic approach focused on the creation, distribution, and utilization of knowledge within an organization to improve effectiveness and performance. Knowledge management is the process of transferring knowledge from the individual who owns it to others in need, with the aim of increasing organizational effectiveness. This emphasizes the importance of channeling knowledge so that information is not isolated but spread and used productively. In the context of BSIP TAS, KM involves systematically managing both technical and tacit knowledge to support service delivery and institutionalized learning. Given that the BSIP TAS operates in a dynamic environment, effective knowledge management is crucial for maintaining operational stability and public trust.

Knowledge management is the practice of creating, acquiring, capturing, sharing, and using knowledge to increase learning and performance in an organization. Dalkir (2013) confirmed that knowledge management is deliberate and systematic coordination from people, technology, processes, and structures in the organization frame add mark through innovation and utilization return knowledge. This means that KM not only maintains information but also creates a system for knowledge that is used return in a way effectively to support a sustainable learning process. KM practices in the public sector are fundamental for improving transparency, accountability, and responsiveness. KM is a process of

leveraging intellectual assets, such as knowledge and information generated within an organization, to create value through efficiency, decision-making, and innovation. In the context of BSIP TAS, which manages complex administrative functions, applying KM can enhance the accessibility and sharing of critical information across departments, thereby improving service quality and organizational agility. Furthermore, Dalkir (2013) highlights that the benefits of KM include improved performance at the individual, group, and organizational levels, making KM an essential foundation for advancing public sector performance. For BSIP TAS, implementing tailored KM systems can foster a collaborative environment that promotes problem-solving and adaptive capacity.

Within the public framework sector, knowledge management becomes crucial for increasing transparency, accountability, and responsiveness to society. Improvement performance in the public sector covers efficiency in the use of source power, acceleration of bureaucratic processes, and improvement in the quality of service output. Therefore, KM can play a role as the mover main in transforming public organizations to become more professional, innovative, and results-oriented (performance-oriented). The relationship between KM practices and performance improvement in the public sector is causal and synergistic. Effective KM can streamline workflows, accelerate decision-making, and support the achievement of organizational objectives in a more effective and efficient manner. Numerous studies have demonstrated that KM contributes significantly to performance improvement in various public organizations.

For instance, Azizah (2021) found that KM implementation through training and documentation in SMA Negeri 3 Yogyakarta helped facilitate a learning organization, empowering educators, and improving competitiveness. Similarly, Aprianti and Sugiarti (2022) designed a web-based KM system at the South Tangerang City Narcotics Agency that supported employee performance and encouraged knowledge sharing. However, these studies emphasize system development rather than managerial strategy, highlighting the need for strategic KM frameworks that are aligned with organizational goals. In the context of BSIP TAS, structured KM strategies, including leadership roles such as a Chief Knowledge Officer, clear organizational policies, and a culture supporting knowledge sharing, are essential to maximize performance improvements.

The study of the development of KMS in Bappeda Medan City can increase staff understanding and quality decision-making (Inkinen, 2016). KMS also improves satisfaction through facility collaboration and internal learning. Yulianti, Triharini, and Wahyudi (2024) in studies literature concluded that KM could increase the performance of nurses in the MAKP team. Factors that influence performance cover factor organizations, individuals, and jobs as relevant for context sector public in a way general (Elgargouh, Chbihi Louhdi, Zemmouri, & Behja, 2024). Research in various contexts underscores that barriers such as organizational structures, culture, and policy support can hinder effective KM. (Syazwina & Ikhwan, 2024) observed that KM practices in disaster management are often fragmented and technology-centric, lacking the integration of human, process, and structural dimensions. Similarly, studies have been conducted in Kenya (Ndiege & Wamuyu, 2019). showed ineffective coordination and poor documentation, reinforcing the need for a comprehensive KM strategy.

In the government context of South Africa, Ncoyini and Cilliers (2020) found that bureaucratic structures hinder knowledge flow between leaders and staff, which could be mitigated with stronger organizational support. Supporting this. Adinegoro (2022) states that tacit knowledge plays a vital role in fostering innovation and suggests that KM systems are solutions for sharing experiential knowledge across agencies. For BSIP TAS, fostering a knowledge-sharing culture, upgrading infrastructure, and developing supportive policies are critical for enhancing the institutional capacity. Finally, Fauzi and Hudaya (2024) mapped KM at STAIN Gajah Putih and found that forming a knowledge-sharing culture, infrastructure supporters, and policies that encourage the use of knowledge are important factors in improving the capabilities of educational organizations (Ndiege & Wamuyu, 2019).

Based on the study, it can be concluded that the right KM strategy contributes to the real improvement of performance of organizations in various sectors. However, a strategic and contextual approach is still needed, including in the public sector, such as BSIP TAS, which integrates the dimensions of people,

technology, structure, and processes to create adaptive, efficient, and sustainable organizations (Burke, Sharp, Woods, & Paradis, 2023). Based on the reviewed literature, it is evident that appropriate KM strategies are crucial for performance improvement in diverse sectors. However, context-specific approaches that integrate people, technology, structure, and processes are necessary, particularly for public organizations such as the BSIP TAS. Such strategies should aim to create adaptive, efficient, and sustainable organizations.

3. Methodology

This study aims to understand the performance improvement in the implementation of ASN training at BSIP TAS from a knowledge management perspective. BSIP TAS was chosen as the case because it is a representative example of a government institution undergoing significant organizational transformation, particularly in its training functions and knowledge management practices, making it an ideal bounded system for an in-depth exploration. Additionally, 's strategic role of the BSIP TASin public administration and its ongoing efforts to enhance ASN competency provide valuable insights into how KM strategies can facilitate organizational change within similar agencies. The researcher was an outsider aiming to objectively examine the processes within BSIP TAS, with efforts made to minimize subjective bias through systematic data collection and triangulation methods.

Data were collected through in-depth interviews, limited participant observation, and documentation. A total of 11 informants were selected purposively because they were considered to know and were directly involved in the planning, implementation, and evaluation of ASN training and knowledge management strategies at BSIP TAS. The informants included the head of the office, structural officials, implementing staff, technicians, and external partners. The diversity of informant positions allows researchers to obtain rich and varied data from various levels of an organization: individuals, groups, and institutions. Researchers also accessed supporting documents such as annual performance reports, training SOPs, material modules, and visual archives of training activities available on BSIP TAS internal and external media sources. The use of these documents aimed to strengthen and confirm the information obtained through interviews and observations.

Triangulation techniques, including triangulation of sources, techniques, and time, were used to strengthen the validity and reliability of the findings. This triangulation allows researchers to compare interview results from different actors, confirm official documents, and check the consistency of information at different observation times. The validity of data in qualitative research is very important, and as explained by Sahisnu and Zaim (2025), the uniqueness of the qualitative approach lies in "the ability of humans as the main instrument in capturing subjective meaning and value bias in a complex social context." Therefore, human instruments are the main element in exploring deep understanding from the informants.

The collected data were analyzed using the interactive analysis model of Miles, Huberman, and Saldana (2014), which includes four main stages: (1) data collection, (2) data condensation, (3) data presentation, and (4) drawing and verifying conclusions. After the interviews were conducted, the data were transcribed and coded manually. Data condensation was conducted by sorting relevant information according to the focus of the research, namely, improving the performance of three KM levels: individual, group, and organization. Furthermore, the data were displayed in the form of thematic narratives and visualizations, such as summary tables and organizational structure images.

4. Results and discussion

Improving the performance of training implementation carried out by BSIP TAS from a knowledge management perspective

4.1. Result

The research results are shown in the following table:

Tabel 1. Research Results

Individual Level	Group Level	Organization Level
At the individual level, the focus of the training implementation is on enhancing employee competencies through targeted programs. Training activities aim to improve understanding and practical skills, which are evaluated through certifications and supervisor assessments based on how well participants grasp the material and can apply it in their work. Evidence from interviews indicates that training is not merely about transmitting knowledge but ensuring participants can practice and internalize it, supporting the transfer of tacit knowledge through real work applications. The effectiveness of these trainings is further supported by evaluations measuring improvements in work efficiency, such as in ISO Quality Management System (QMS) practices. The role of knowledge management here is to facilitate continuous learning, reinforce self-efficacy, and promote ongoing skill development, which ultimately lead to more competent and confident employees.	At the group level, knowledge sharing and collaboration are vital in reinforcing learning outcomes from training. Although currently informal, peer mentoring and experience sharing among colleagues serve as catalysts for collective knowledge building. Training sessions often include sharing experiences that foster a community of practice, where group members exchange insights beyond formal discussions. Feedback mechanisms and leadership support play significant roles in nurturing a knowledge-sharing culture within teams, enabling better communication, problem-solving, and cross-unit collaboration, such as between BSIP TAS and external partners like the Muktiharjo Experimental Garden. When properly systematized, these activities enhance the group's overall performance, efficiency, and cohesion, driven by a culture that values continuous learning and mutual support.	At the organizational level, the training process contributes to building and strengthening institutional knowledge, which supports strategic decision-making and problem-solving across BSIP TAS. Data from training activities are compiled into organizational databases, fostering knowledge codification and preservation of institutional memory. Regular training programs, combined with the establishment of centralized training facilities, improve organizational coherence, standard operating procedures, and compliance with accreditation standards. This systematic approach results in measurable achievements such as increased utilization of research and development (R&D), better budget management, and higher standards adherence. Leadership support and technology integration further reinforce the results, enabling the organization to adapt and sustain improvements over time. These efforts contribute to a culture of continuous learning, strategic knowledge sharing, and overall institutional performance enhancement.

4.2. Discussion

4.2.1. Individual Level

Internal and external training aims to improve employee competency and is proven through certificates. Its effectiveness is evaluated by superiors based on their understanding of the material and its application in the field. Dalkir (2013) states that knowledge management helps individuals in their work by saving time, building a sense of community, providing the latest information, and opening opportunities for contribution to the organization. The following is an excerpt from an interview with one of the informants: "We do not only just convey material, but ensure participant understand and can to practice moment return to agency."

This shows that, at the individual level, training is designed to form personal competence through direct understanding and practice. The implementation of knowledge management (KM) is visible from knowledge transfer efforts explicit to tacit through practical work. This is in line with Nonaka (2009) approach regarding socialization and internalization in the SECI model. The effectiveness of the training is evaluated through an assessment sheet by the superior to measure the understanding and

application of training results in the field as part of the knowledge assessment. Sree and Basariya (2019) emphasized the importance of evaluation to assess the extent to which the knowledge gained can be applied and the benefits obtained by the organization. One of the findings shows that ISO Quality Management System (QMS) training can improve work efficiency, such as in proposing accredited laboratories.

Improving performance on an individual level for training implementation conducted by the BSIP TAS can significantly benefit from a comprehensive knowledge-management approach. Knowledge management (KM) encompasses strategies and practices aimed at identifying, creating, representing, distributing, and enabling the adoption of insights and experiences within an organization. From the perspective of training implementation, effective KM can lead to enhanced competency and higher self-efficacy among participants. Evidence supports the notion that enhancing individuals' foundational knowledge, coupled with ongoing training, leads to sustained improvements in practice. For instance, Yu, Chunmei, and Caiping (2023) highlighted how ongoing multidisciplinary collaboration and supervision can lead to continuous skill enhancement among nurses, particularly in the management of dysphagia. This exemplifies the role of KM in providing structured learning opportunities that directly influence patient-care outcomes. The integration of continuous feedback can help clarify job responsibilities and enhance the efficacy of the training process, which is a critical aspect of knowledge management.

Sangtarashani and Mehrara (2019) provide a detailed framework for implementing KM in training programs within organizations. Their findings indicate that a successful model incorporates essential elements, such as organizational culture, structure, effective communication channels, targeted leadership support, and benchmarking. This holistic approach is crucial for the BSIP TAS when designing and executing training programs. Implementing a structured KM framework that facilitates the sharing of insights and best practices can motivate participants and foster an environment of continuous improvement. In examining the impact of training on self-efficacy, research highlights the critical relationship between training initiatives and participants' confidence levels. Peng et al. (2024) focused on the effects of training programs on graduate teaching assistants, revealing that such training significantly enhanced self-efficacy and impacted overall teaching effectiveness. This finding supports the idea that building self-efficacy through targeted training programs is essential for improving performance at the individual level. Moreover, the potential for enhanced career development, as noted by Peng et al. (2024), is directly tied to the influence of KM in shaping an individual's competencies and confidence in their roles.

The Lead TA Program described by Haque and Meadows (2020) further illustrates the direct benefits of structured training initiatives for graduate teaching assistants (GTAs). The study showed that participants perceived significant gains in their instructional competency, affirming the importance of implementing supportive training mechanisms informed by KM principles. The iterative nature of feedback, mentorship from Lead TAs, and structured training significantly contributed to the development of the participants' confidence and instructional capabilities. Cognitive training programs, such as those discussed by Laiz, Díaz, Collado, Gomez-Pilar, and Hornero (2018), underscore the importance of tailored training that aligns with participants' specific needs. Their research demonstrates that cognitive interventions can lead to considerable improvements in daily functioning and autonomy among individuals with mild cognitive impairments, suggesting that customized training interventions disseminated through a robust KM framework can yield better results in enhancing individual performance.

In summary, improving individual performance within training implementations at BSIP TAS can be effectively achieved through a strategic knowledge management approach. This approach should include fostering an organizational culture supportive of continuous learning, employing structured communication channels for feedback, and ensuring that pertinent skills and knowledge are effectively shared among the participants. Insights from various studies suggest that both the nature of the training provided and the environment created by KM practices significantly influence participants' self-efficacy and lasting performance outcomes. Additionally, systematic evaluation and adaptation of training

programs based on participant feedback can lead to an iterative process of improvement, thereby enhancing the integration of knowledge management into training initiatives. Ultimately, the application of these KM principles will result in a more knowledgeable, skilled, and confident workforce capable of delivering high-quality outcomes.

4.2.2. Group Level

At the group level, knowledge management encourages collaboration through peer mentoring, where employees who have undergone training mentor other colleagues informally outside work hours because there is no formal mechanism. Although natural, this process needs to be optimized to be more structured in the future. For example, DUPAK preparation training helps employees mentor colleagues in reporting, as well as strengthening cross-unit collaboration, such as between BSIP TAS and the Muktiharjo Experimental Garden in seed development. The following is an excerpt from interview data from one of the informants: "During our training is sharing experiences between participants. So it's not only from speaker only, we also learn from other participants." Group level reflected in collaborative activity and exchange experience between participants. This process shows the dimensions of knowledge sharing in the group that became important for knowledge management (Wang & Noe, 2010). This also indicates that the group becomes a receptacle, and unification of individual knowledge becomes a shared, harmonious capital with a draft community of practice.

Although not yet systematic, this reflects the principle of group mentoring. Dalkir (2013) emphasized that peer mentorship, interaction between colleagues for two-way career development, is an effective tool in fostering personal and professional growth. This mentoring culture ensures that knowledge is evenly distributed within the group, thereby driving optimal collective performance. To enhance the group-level performance of training implementations conducted by the BSIP Taskforce, it is imperative to adopt a comprehensive knowledge management perspective that emphasizes the integration of feedback mechanisms, a strong knowledge-oriented leadership model, and the strategic utilization of training programmes. This multilayered approach addresses the complexities inherent in training effectiveness, particularly within organizational structures that aim to improve overall performance.

First, the significance of training feedback as a catalyst for improving job performance cannot be overstated. Inn, Zailani, Ramayah, and Fernando (2010) highlighted that appropriate feedback mechanisms following training have a profound effect on both learning effectiveness and the application of newly acquired knowledge in practical settings. The alignment of training objectives with job requirements is crucial, as it allows trainees to contextualize their learning and relate it directly to their performance in the workplace. Structured feedback sessions create an avenue for open dialogue between trainees and supervisors, facilitating the adjustment of learning objectives in accordance with performance outcomes. This interactive exchange not only bolsters motivation but also fosters a culture of continuous improvement within the organization, ultimately contributing to enhanced training effectiveness.

Moreover, knowledge-oriented leadership plays a paramount role in fostering a culture conducive to innovation and performance improvement. Suroso, Novitasari, Nugroho, Chidir, and Asbari (2021) assert that effective knowledge management capabilities, namely knowledge acquisition, application, and sharing, serve as mediators between knowledge-oriented leadership and innovation performance. This alignment illustrates that cultivating knowledge among employees is not merely an end goal but rather a strategic enabler aimed at facilitating decision-making and operational effectiveness. In this context, leaders must focus on succinctly distributing pertinent knowledge to employees, ensuring that information is accessible at critical decision-making junctures. By embedding these knowledge management practices into the organizational framework, BSIP can stimulate an environment that values agile responses to innovation-driven challenges, ultimately improving group-level performance.

In parallel, the implementation of diverse training methodologies is essential to maximize participant engagement and retention. Hardy, Griffiths, and Hunter (2019) conducted a meta-analysis that revealed that various training formats, whether face-to-face, online, or hybrid, significantly enhance knowledge, attitudes, and supportive behaviors among managerial personnel. This underscores the importance of

employing varied training delivery methods tailored to meet the specific needs of trainees. The flexibility offered by hybrid training programs can accommodate different learning styles and schedules, thereby encouraging greater participation and reinforcing the application of learned skills in real-world scenarios.

Furthermore, the imperative of training effectiveness as a contributor to team performance is underscored by the findings of Umar, Tamsah, Mattalatta, Baharuddin, and Latief R (2020), who demonstrated a direct positive correlation between effective training interventions and competency improvements, particularly in soft skills. Their research indicates that practical training experiences lead to improved work efficiency and productivity, as participants can apply what they have learned to effective simulations. To capitalize on this, BSIP should consider incorporating experiential learning opportunities within training programs that promote collaboration and active engagement among group members, thereby optimally leveraging training investments.

Equally crucial is the need to acknowledge the organizational factors that influence training outcomes, as discussed by Spector, Revolta, and Orrell (2016) in their systematic review of dementia care training programs. They emphasized that training duration and supervision alone do not guarantee improved staff outcomes without considering variables such as staff attendance and management support. This recognition compels BSIP to ensure that adequate management support is in place to foster an environment where training attendance is encouraged and valued. A concerted effort to address such organizational factors could translate into enhanced participant commitment and higher training success rates.

Moreover, to further cement these initiatives, a robust evaluation framework must be established to continuously assess the effectiveness of training programs. Continuous feedback mechanisms should be established not only for participants but also for trainers and facilitators, ensuring that all aspects of the training process are subjected to ongoing scrutiny and improvements. This could involve gathering qualitative and quantitative data on the impact of training interventions on performance and job satisfaction, allowing for an adaptive training strategy that evolves with organizational needs. It is equally important to provide platform-specific learning opportunities for team members to ensure that the competencies acquired through training match the real-time needs within the organization. This alignment can optimize knowledge application and reinforce newly acquired skills, thereby embedding a culture of learning that permeates the organizational ethos.

Furthermore, there is a need to design training influences that are directly aligned with the BSIP's organizational goals. Effective training should contribute to fulfillment not only on an individual level but also at a group level, thereby amplifying the cumulative impact of training initiatives across the organization. Interdepartmental collaboration in designing training challenges could foster stronger bonds and knowledge sharing among team members, further enhancing overall efficacy. An emphasis on cultivating a positive learning atmosphere is also vital. Organizations that prioritize psychological safety encourage employees to engage with training programs more effectively, leading to better skill retention and application. By creating a trusting environment where questions and mistakes are welcomed as part of the learning process, BSIP can maximize the benefits of training efforts.

To address the challenges of knowledge retention and application, BSIP must strategically implement post-training follow-up measures. These may include refresher courses, regular check-ins, or mentoring arrangements to ensure that knowledge remains current and applicable over time. Without such support systems, the potential gains from initial training sessions may dissipate, leading to a frustrating cycle of ineffective knowledge transfer and retention. Finally, facilitating inter-project learning through collaborative assignments or team projects can reinforce the improvements gleaned from training. By enabling team members to tackle practical challenges collaboratively, the BSIP can nurture an adaptive and innovative culture that continually seeks to leverage lessons learned and best practices.

In conclusion, improving the performance of the Group Level of training implementation at BSIP

requires a multifaceted strategy grounded in robust knowledge management principles. By integrating effective feedback mechanisms, promoting knowledge-oriented leadership, employing diverse training formats, ensuring rigorous evaluation processes, addressing organizational challenges, fostering a positive learning environment, and promoting interdepartmental collaborations, the BSIP can cultivate a high-performance training ecosystem that drives both individual and collective success.

4.2.3. Organization Level

Knowledge management-based training at the BSIP TAS at the organizational level increases the effectiveness of knowledge dissemination and problem-solving. Best practices are disseminated through workshops, helping employees understand work standards and procedures and reducing their dependence on individuals. Regular training improves technical and administrative skills, supporting the fulfillment of accreditation standards in the laboratory. The following is an excerpt from interview data from one of the informants: "We recorded results training and entering it in internal system as SOP or guideline reference."

In level organization, this data show that training No stop at individual or group, but utilized for creating an organizational database, strengthening institutional memory. This process supports knowledge codification and strengthens culture-sharing knowledge, which are important elements of knowledge management in the context of public organizations (T. N. Khan, 2023). The impact is seen in the increase in the utilization of R&D results by 145%, ZI value of 103.90%, and budget realization of 100.83%. Leadership support and job rotation encourage employees to be more actively involved with stakeholders and build collective organizational memory. Table 1 shows the Targets, Indicators, Work Achievements.

Table 2. Targets, Indicators, Work Achievements

No	Target	Indicator	Achievements	Activity
1.	Increasing Utilization Technology and Innovation Plants , Livestock and Veterinary	Amount results utilized R& D	145%	General Safety Workshop, Sample Exploration , Seed Quality Testing , ISO 17025:2017 Internal Audit
2.	Realization Effective , Efficient , and Service - Oriented Bureaucracy	ZI value towards WBK/WBBM	100.90%	ISO 19011:2018 Internal Audit, PNPS Preparation , ISO 17025:2017 Lab Management
3.	Managed Accountable and Quality Budget	Budget Performance Value of the Center	100.83%	Preparation of PNPS, SPI, Budget Performance Evaluation

Source: Analytical Resources, 2025

Knowledge management plays a role in supports the organizational learning process. As explained by Dalkir (2013), KM is used to support organizational learning ("knowledge management is being used to support organizational learning"). At BSIP TAS, periodic training has been proven to improve performance by improving employee competency according to operational needs. Based on the 2023 performance report, training activities significantly increased the achievement of the center's performance indicators.

To enhance the performance of training implementation at the organizational level, particularly for the BSIP TAS, adopting a comprehensive framework informed by knowledge management principles is vital. The effective implementation of training initiatives hinges on a multifaceted approach that considers various elements, including organizational culture, structure, and technology integration. Central to the success of training initiatives is the notion of a coordinated and centralized training facility. Rao et al. (2021) illustrated that the establishment of a central facility significantly improves communication and operational efficiency during training programs, especially in crisis situations such

as the COVID-19 pandemic. This centralization ensures that all staff are aligned in their understanding and engagement with the training, mitigating potential miscommunication that could impede the success of the training outcomes.

In the broader context of knowledge management, Sangtarashani and Mehrara (2019) presented a robust model highlighting the key components that underpin successful training implementation. Their findings emphasize the importance of organizational culture and structure, stating that a supportive environment is essential for fostering an atmosphere conducive to knowledge sharing and learning. This model articulates several critical dimensions, such as technology utilization, leadership support, and benchmarking, that facilitate the systematic management of organizational knowledge, ultimately enhancing training effectiveness and organizational performance. Moreover, the integration of multidisciplinary collaboration is critical for healthcare training programs, as indicated by Yu et al. (2023), who noted that effective team collaboration not only enhances individual responsibilities but also improves patient management among nursing staff. Their research underscores the need for contemporary training to adapt and include various professional roles within healthcare to ensure optimized patient care.

Training initiatives, as outlined by Srivastava and Ravichandran (2018), are essential for driving performance improvement within organizations. They assert that increasing investments in training reflect a growing recognition of its importance in enhancing individual and group performance. The provision of effective and targeted training programs can result in a more skilled workforce that is better equipped to meet the organizational goals. They further emphasized that consistent training efforts correlate strongly with overall organizational excellence, which should be a primary objective for BSIP TAS as it seeks to implement robust training programs. The practical implementation of effective training programs requires the establishment of sustainable frameworks that can adapt to current and emerging challenges. A. M. Khan et al. (2022) describe their experience in developing a systematic training package for healthcare workers during the COVID-19 crisis, which highlights the necessity for training programs to be both scalable and sustainable. Their approach includes the continuous evaluation and adaptation of training content to ensure relevance and effectiveness in addressing the needs of healthcare personnel in rapidly changing environments.

In conclusion, improving the performance of training implementation within the BSIP TAS necessitates a comprehensive understanding and application of knowledge management principles. This involves establishing a central facility for training, fostering a supportive organizational culture, leveraging technology, encouraging multidisciplinary collaboration, and creating sustainable training frameworks. By synthesizing insights from the literature, it becomes clear that effective organizational training requires not only significant investment in resources but also a strategic vision that unites all levels of personnel around shared goals.

5. Conclusions

Based on the previous description, it can be concluded that the application of knowledge management in organizing training at BSIP TAS contributes significantly to improving performance at the individual, group, and organizational levels. At the individual level, training improves employee competency and work effectiveness, as evidenced by their ability to implement training materials in real tasks, such as proposing accredited laboratories. At the group level, the practice of sharing knowledge between employees through informal mentoring strengthens collaboration and the effectiveness of completing joint tasks. Meanwhile, at the organizational level, training integrated with knowledge management principles encourages the dissemination of best practices, strengthens a culture of knowledge sharing, and increases operational efficiency and sustainability. The impact can be seen from the achievement of significant performance targets, such as the utilization of R&D results exceeding targets, increasing the value of Integrity Zone development, and optimizing budget use. This shows that knowledge management-based training not only strengthens employee capacity but also becomes a strategic instrument in supporting institutional transformation as a whole.

This study contributes to both theory and practice in the fields of knowledge management and organizational training. Theoretically, this reinforces the understanding that integrating KM principles into training programs enhances performance across multiple organizational levels–individual, group, and organizational–by fostering a culture of continuous learning, knowledge sharing, and innovation. It also provides empirical evidence supporting models such as the SECI theory Nonaka (2009), demonstrating how tacit and explicit knowledge transfer occurs effectively through training and informal mentoring in the public sector context. Practically, these findings suggest that organizations such as the BSIP TAS should design and implement KM-driven training strategies as part of their broader institutional transformation efforts. This involves establishing mechanisms for knowledge dissemination, fostering a sharing culture, and aligning training objectives with strategic targets, such as research utilization and operational efficiency. Implementing such approaches can lead to measurable improvements in performance and sustainability, making KM a vital instrument for organizational growth and innovation.

References

Adinegoro, K. R. R. (2022). Knowledge Management System: Solusi Alternatif Berbagi Tacit Knowledge Antar Aparatur Sipil Negara. *Jurnal Kebijakan dan Manajemen PNS, 16*(1), 48-60. doi:http://dx.doi.org/10.61133/pns.v16i1.387

Aprianti, R., & Sugiarti, Y. (2022). Analisis dan Perancangan Knowledge Management System Untuk Meningkatkan Kinerja Pegawai pada Badan Narkotika Nasional Kota Tangerang Selatan Berbasis Webiste. *Jurnal Komputasi, 10*(1), 84-94. doi:https://doi.org/10.23960/komputasi.v10i1.2950

Azizah, L. (2021). Knowledge Management Sebagai Upaya Pengembangan Learning Organization Untuk Meningkatkan Kinerja Guru di SMA Negeri 3 Yogyakarta. *Al-Mabsut: Jurnal Studi Islam dan Sosial, 15*(1), 13-27. doi:https://doi.org/10.56997/almabsut.v15i1.501

Baporikar, N. (2017). Knowledge Management for Excellence in Indian Public Sector. *International Journal of Social Ecology and Sustainable Development (IJSESD), 8*(1), 49-65. doi:https://doi.org/10.4018/ijsesd.2017010104

Burke, S., Sharp, L.-A., Woods, D., & Paradis, K. F. (2023). Advancing a Grounded Theory of Parental Support in Competitive Girls' Golf. *Psychology of Sport and Exercise, 66*, 1-12. doi:https://doi.org/10.1016/j.psychsport.2023.102400

Cahyana, A., & Dewi, N. (2023). Pengaruh Disiplin, Mutasi dan Penempatan Terhadap Kinerja Pegawai Negeri Sipil di Sekretariat Daerah Kabupaten Badung. *Kajian Ilmiah Hukum, 2*(1), 53-62.

Dalkir, K. (2013). *Knowledge Management in Theory and Practice*. London: Routledge.

Elgargouh, Y., Chbihi Louhdi, M. R., Zemmouri, E. M., & Behja, H. (2024). Knowledge Management for Improved Digital Transformation in Insurance Companies: Systematic Review and Perspectives. *Informatics, 11*(3), 1-20. doi:https://doi.org/10.3390/informatics11030060

Fauzi, F., & Hudaya, A. (2024). The Power of Binge-Watching on Continuation Intention of Video on Demand Mediated by Fear of Missing Out in the Young Generation. *Formosa Journal of Sustainable Research, 3*(12), 2555-2568. doi:https://doi.org/10.55927/fjsr.v3i12.12798

Habib, L., & Mehzabin, M. A. (2024). Motivation for Knowledge Management Approach and Future Prospects: A Review of Perspectives in Bangladeshi Organisations. *Annals of Human Resource Management Research, 4*(2), 127-151. doi:https://doi.org/10.35912/ahrmr.v4i2.2472

Hafiz, M., & Frinaldi, A. (2023). The Role of Knowledge Sharing and Innovation in Improving Public Sector Performance: A Literature Review. *Publica: Jurnal Pemikiran Administrasi Negara, 15*(1), 161-173. doi:https://doi.org/10.15575/jpan.v15i1.23020

Haque, A., & Meadows, K. N. (2020). Impact of the Lead TA Program on the Perceived Disciplinary Instructional Competence of Graduate Teaching Assistants. *The Canadian Journal for the Scholarship of Teaching and Learning, 11*(2), 1-18. doi:https://doi.org/10.5206/cjsotl-rcacea.2020.2.11103

Hardy, C., Griffiths, A., & Hunter, M. S. (2019). Development and Evaluation of Online Menopause Awareness Training for Line Managers in UK Organizations. *Maturitas, 120*, 83-89. doi:https://doi.org/10.1016/j.maturitas.2018.12.001

Hisriani, Jamil, B., & Simamora, B. (2023). Penerapan Prinsip-Prinsip Good Governance dalam Pelayanan Publik pada Kantor Kelurahan Teladan Timur Kecamatan Medan Kota. *Strukturasi: Jurnal Ilmiah Magister Administrasi Publik, 6*(2), 142-150. doi:http://dx.doi.org/10.31289/strukturasi.v6i2.4457

Inkinen, H. (2016). Review of Empirical Research on Knowledge Management Practices and Firm Performance. *Journal of Knowledge Management, 20*(2), 230-257. doi:https://doi.org/10.1108/JKM-09-2015-0336

Inn, T. C., Zailani, S., Ramayah, T., & Fernando, Y. (2010). An Investigation Into the Dimensions of Training Effectiveness on Post Training Outcomes of Quality Management System. *International Journal of Productivity and Quality Management, 5*(2), 171-199. doi:https://doi.org/10.1504/IJPQM.2010.030741

Khan, A. M., Patra, S., Jain, A. K., Madhu, S., Saxena, A., Aggarwal, A., . . . Singh, N. P. (2022). Development and Implementation of a Sustainable COVID-19 Training Package for Healthcare Workers: Experience from a Teaching Hospital of North India. *Journal of Family Medicine and Primary Care, 11*(9), 5345-5350. doi:https://doi.org/10.4103/jfmpc.jfmpc_2196_21

Khan, T. N. (2023). Using Knowledge Management to Enhance Organizational Performance and Effectiveness. *International Journal of Advanced Engineering, Management and Science, 9*(11), 1-17. doi:https://doi.org/10.22161/ijaems.911.1

Laiz, N. M., Díaz, S. D. V., Collado, N. R., Gomez-Pilar, J., & Hornero, R. (2018). Potential Benefits of a Cognitive Training Program in Mild Cognitive Impairment (MCI). *Restorative Neurology and Neuroscience, 36*(2), 207-213. doi:https://doi.org/10.3233/RNN-170754

Marques, I., Nogueira, F., Gonçalves, S., & Rocha, R. G. (2023). Leadership and Negotiation in Public Health Management: A Systematic Review of the Literature. *European Conference on Management Leadership and Governance, 259*, 2. doi:https://doi.org/10.34190/ecmlg.19.1.1609

Massaro, M., Dumay, J., & Garlatti, A. (2015). Public Sector Knowledge Management: A Structured Literature Review. *Journal of Knowledge Management, 19*(3), 530-558. doi:https://doi.org/10.1108/JKM-11-2014-0466

Miles, M. B., Huberman, M., & Saldana, J. (2014). Qualitative Data Analysis: A Methods Sourcebook. California: SAGE Publication.

Ncoyini, S. S., & Cilliers, L. (2020). Factors that influence knowledge management systems to improve knowledge transfer in local government: A case study of Buffalo City Metropolitan Municipality, Eastern Cape, South Africa. *SA Journal of Human Resource Management, 18*(1), 1-11. doi:https://doi.org/10.4102/sajhrm.v18i0.1147

Ndiege, J. R. A., & Wamuyu, P. K. (2019). Knowledge Management Practices and Systems in County Governments in Developing Countries: Perspectives from Selected Counties in Kenya. *VINE Journal of Information and Knowledge Management Systems, 49*(3), 420-439. doi:https://doi.org/10.1108/VJIKMS-01-2019-0014

Nematollahi, H., Mohammadi, H., Gholipour, A., & Mohammad Esmaeili, N. (2024). Strengthening Human Resource Management System with Digital Practices, Transformation, and Task Interdependence. *International Journal of Human Capital in Urban Management, 9*(4), 579-600. doi:https://doi.org/10.22034/IJHCUM.2024.04.03

Nonaka, I. (2009). The Knowledge-Creating Company. In J. C. Tony Siesfeld, Dale Neef (Ed.), *The Economic Impact of Knowledge* (pp. 175-187). London: Routledge.

Peng, H., Wu, Y., Zhou, R., Jiang, J., Chen, X., Wang, M., . . . Wu, T. (2024). Comparison of Self-Efficacy Among Graduate Teaching Assistants Before and After Training. *BMC Medical Education, 24*(1), 471. doi:https://doi.org/10.1186/s12909-024-05431-0

Rao, S., Rohilla, K. K., Kathrotia, R., Naithani, M., Varghese, A., Bahadur, A., . . . Kant, R. (2021). Rapid Workforce Development to Combat the COVID-19 Pandemic: Experience from a Tertiary Health Care Centre in North India. *Cureus, 13*(6), 1-15. doi:https://doi.org/10.7759/cureus.15585

Razzaq, S., Shujahat, M., Hussain, S., Nawaz, F., Wang, M., Ali, M., & Tehseen, S. (2018). Knowledge Management, Organizational Commitment and Knowledge-Worker Performance: The Neglected Role of Knowledge Management in the Public Sector. *Business Process Management Journal, 25*(5), 923-947. doi:https://doi.org/10.1108/BPMJ-03-2018-0079

Sahisnu, R. P., & Zaim, I. A. (2025). Mindful Marketing: A Marketing Strategy for Lingkar Organik to Support Sustainability Goals. *Journal of Multidisciplinary Academic and Practice Studies, 3*(2), 347-366. doi:https://doi.org/10.35912/jomaps.v3i2.3050

Sangtarashani, L. R., & Mehrara, A. (2019). Application Model of Knowledge Management Training Implementation. *Iranian Journal of Educational Sociology, 2*(2), 78-89. doi:https://doi.org/10.29252/ijes.2.2.78

Spector, A., Revolta, C., & Orrell, M. (2016). The Impact of Staff Training on Staff Outcomes in Dementia Care: A Systematic Review. *International Journal of Geriatric Psychiatry, 31*(11), 1172-1187. doi:https://doi.org/10.1002/gps.4488

Sree, V., & Basariya, S. R. (2019). Designing Implementing and Evaluating Employee Training Programs. *International Journal of Recent Technology and Engineering (IJRTE), 8*(3), 3055-3058. doi:https://doi.org/10.35940/IJRTE.C4863.098319

Srivastava, V., & Ravichandran, N. (2018). Achieving Excellence through Training Initiatives. *Review of Professional Management, 16*(1), 57-69. doi:https://doi.org/10.20968/rpm/2018/v16/i1/129254

Suroso, Novitasari, D., Nugroho, Y. A., Chidir, G., & Asbari, M. (2021). Managing MSME Innovation Performance: Analysis of Knowledge-Oriented Leadership and Knowledge Management Capability. *Jurnal Ilmu Pendidikan, 3*(6), 4541-4555. doi:https://doi.org/10.31004/edukatif.v3i6.1506

Syazwina, A. D., & Ikhwan, A. (2024). Pengembangan Knowledge Management System Untuk Peningkatan Pemahaman Pegawai di Badan Perencanaan dan Pembangunan Daerah Kota Medan. *Jurnal Inovtek Polbeng-Seri Informatika, 9*(1), 203-213. doi:http://dx.doi.org/10.35314/isi.v9i1.4039

Umar, A., Tamsah, H., Mattalatta, M., Baharuddin, B., & Latief R, A. (2020). Training-Effectiveness and Team-Performance in Public Organization. *The Journal of Asian Finance, Economics and Business, 7*(11), 1021-1031. doi:https://doi.org/10.13106/jafeb.2020.vol7.no11.1021

Upadhyay, P., & Kumar, A. (2020). The Intermediating Role of Organizational Culture and Internal Analytical Knowledge Between the Capability of Big Data Analytics and a Firm's Performance. *International Journal of Information Management, 52*. doi:https://doi.org/10.1016/j.ijinfomgt.2020.102100

Wang, S., & Noe, R. A. (2010). Human Resource Management Review. *Human Resource Management Review, 20*(2), 115-131. doi:https://doi.org/10.1016/j.hrmr.2009.10.001

Yu, C., Chunmei, L., & Caiping, S. (2023). A Survey of Nurses' Knowledge, attitudes, and Practices of Nurses Towards Patients with Dysphagia After Anterior Cervical Spine Surgery: A Prospective Multicentre Study. *BMC Nursing*, 1-15. doi:https://doi.org/10.21203/rs.3.rs-3648207/v1

Yulianti, M. G., Triharini, M., & Wahyudi, A. S. (2024). Model Metode Asuhan Keperawatan Profesional (MAKP) Tim Berbasis Structural Empowerment terhadap Kualitas Kehidupan Kerja Perawat. *Journal of Telenursing (JOTING), 6*(1), 1278-1286.