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Research article

Partner Satisfaction With The Implementation of The Cooperation Information System (Sikerja) at Aji Muhammad Parikesit Regional Hospital.

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ABSTRACT

Background: Managing cooperation agreements in hospitals requires an efficient and transparent process. Aji Muhammad Parikesit Regional General Hospital implemented the Cooperation Information System (SIKERJA) to optimize the cooperation agreement process, which previously took 2,028 minutes to 110 minutes. The purpose of the study was to analyze the level of satisfaction of cooperation partners with the implementation of SIKERJA and its impact on operational efficiency at Aji Muhammad Parikesit Regional General Hospital.
Methods: Quantitative descriptive research with a cross-sectional design. The research sample consisted of 35 respondents (60% internal employees and 40% external partners) selected using purposive sampling. Data collection using a structured questionnaire with a Likert scale. Data analysis using descriptive statistics.
Results: User satisfaction reached 96.25 % , with details: ease of use 97%, process speed 96%, flow clarity 94%, and data accuracy 98%. The implementation of SIKERJA successfully reduced process cycle time by 94.6 % , saved paper usage 90%, and reduced meeting costs by 77.8%. The number of cooperation agreements increased from 12 to 28 cases in 6 months (a growth of 133%).
Conclusion: The implementation of SIKERJA was highly effective in improving partner satisfaction and operational efficiency. This system can serve as a best practice for replication in other healthcare institutions.

INTRODUCTION

Hospitals as complex healthcare institutions require collaboration with various stakeholders—including government agencies, private companies, insurance providers, other healthcare facilities, and educational institutions to deliver comprehensive and high-quality services. Such collaborations are essential not only for ensuring continuity of care but also for expanding access, improving resource utilization, and enhancing institutional competitiveness in an increasingly dynamic healthcare environment. In the era of modern healthcare systems, formalized collaboration agreements have become an unavoidable necessity, serving as legal and operational frameworks that regulate inter-organizational relationships and ensure accountability, efficiency, and service quality.

Aji Muhammad Parikesit Regional General Hospital, as a major referral hospital in Kutai Kartanegara Regency, plays a strategic role in providing advanced healthcare services to the region. However, this strategic position also brings significant administrative challenges, particularly in managing a rapidly growing number of cooperation agreements. In 2024 alone, the hospital recorded 187 active agreements

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involving diverse partners, ranging from healthcare institutions and corporate entities to academic organizations. This rapid growth has increased the complexity of administrative processes, requiring coordination among multiple stakeholders with different interests, procedures, and regulatory requirements.

The existing cooperation agreement management process is largely conventional and fragmented, leading to several inefficiencies. The involvement of multiple approval layers and manual documentation processes contributes to excessive waiting times, reaching up to 2,028 minutes per agreement. In addition, redundant data entry across different departments results in duplication of work and increased risk of inconsistencies. The revision cycle is also highly repetitive, often requiring multiple rounds of corrections that significantly increase paper usage up to five reams per agreement—indicating not only inefficiency but also environmental concerns. Furthermore, coordination meetings required during the process incur substantial costs, estimated at Rp540,000 per case, adding financial burden to operational activities.

These inefficiencies reflect broader systemic issues in administrative workflow management, particularly the lack of integration, standardization, and real-time information access. Delays in agreement finalization can directly impact service delivery, hinder strategic partnerships, and reduce organizational responsiveness to emerging healthcare needs. Therefore, there is a critical need for a more efficient, integrated, and technology-driven system to streamline the cooperation agreement process.

In response to these challenges, hospital management initiated a digital transformation effort through the development of the Collaborative Information System (SIKERJA). This system is designed to integrate all stages of cooperation agreement management from proposal submission and document verification to approval and archiving—into a unified digital platform. By leveraging information technology, SIKERJA aims to reduce processing time, minimize errors, eliminate redundant activities, and enhance transparency and accountability in decision-making processes.

The development of SIKERJA is grounded in the Kaizen approach, which emphasizes continuous, incremental improvement in organizational processes. Kaizen focuses on identifying and eliminating waste (muda), standardizing workflows, and fostering a culture of ongoing improvement involving all levels of the organization. Within the context of healthcare administration, this approach aligns closely with lean management principles, which aim to optimize value by reducing non-value-added activities and improving process efficiency.

Through the implementation of SIKERJA, the hospital seeks to transform its cooperation agreement management into a more agile, efficient, and sustainable system. The vision of this innovation "to realize cooperation agreements at Aji Muhammad Parikesit Hospital that are easy, fast, and economical" reflects a strong commitment to service excellence and operational efficiency. This vision is also aligned with the hospital's broader mission to implement information technology-based lean management practices as a means of enhancing service quality and organizational performance.

Ultimately, this digital transformation initiative is expected to not only address existing inefficiencies but also strengthen institutional governance, improve stakeholder satisfaction, and support the hospital's long-term strategic development in an increasingly interconnected healthcare ecosystem.

METHODS

This study employed a quantitative descriptive design with a cross-sectional approach to evaluate the level of satisfaction among cooperation partners toward the implementation of SIKERJA. The research was conducted from March to June 2025 at Aji Muhammad Parikesit Regional General Hospital.

The study population consisted of all SIKERJA users, including both internal employees and external partners. A purposive sampling technique was applied to select respondents who met predefined inclusion criteria. Internal respondents were employees directly involved in managing cooperation agreements, while external respondents were partners who had used SIKERJA at least once within the previous six months. All participants provided consent to be included in the study. A total of 35 respondents were included, comprising 21 internal employees (60%) and 14 external partners (40%).

Data were collected using a structured questionnaire designed to assess user satisfaction across four key dimensions: ease of use, process speed, clarity of workflow, and data accuracy. Responses were measured using a five-point Likert scale ranging from strongly disagree to strongly agree. Prior to data collection, the instrument was tested for validity and reliability, demonstrating acceptable internal consistency with a Cronbach's Alpha coefficient greater than 0.8.

Primary data collection was conducted through an online survey administered via Google Forms, which was integrated into the SIKERJA system. In addition, secondary data were obtained from the SIKERJA monitoring system and institutional business process documentation to support process evaluation and comparison.

Data analysis was performed using descriptive statistical methods. The level of satisfaction was calculated as percentages for each dimension and as an overall mean score. Furthermore, a comparative analysis of the AS-IS and TO-BE business processes was conducted using Value Added Ratio (VAR), Process Complexity Number (AKP), and cycle time metrics to assess efficiency improvements resulting from system implementation.

Satisfaction levels were categorized into five groups based on percentage scores: very satisfied (81–100%), satisfied (61–80%), fairly satisfied (41–60%), dissatisfied (21–40%), and very dissatisfied (0–20%).

RESULTS

Satisfaction Level Analysis

The results of the satisfaction survey regarding the implementation of SIKERJA show a very high level of satisfaction in all dimensions:

Table 1. SIKERJA User Satisfaction Level

No	Assessment Aspects	Satisfaction Score (%)	Category	Target	Status
1	Ease of Use	97%	Very satisfied	85%	Achieved
2	Processing Speed	96%	Very satisfied	90%	Achieved
3	Clarity of Flow	94%	Very satisfied	85%	Achieved
4	Data Accuracy	98%	Very satisfied	90%	Achieved
Average Total	**96.25%**	**Very satisfied**	**87.5%**	**Achieved**	

The table above shows that all assessment aspects achieved the "Very Satisfied" category, exceeding the established target. The highest level of satisfaction was for data accuracy (98%), followed by ease of use (97%), processing speed (96%), and flow clarity (94%).

Operational Efficiency Analysis

The implementation of SIKERJA has a significant impact on operational efficiency which can be seen from the comparison of AS-IS and TO-BE business processes:

Table 2. Comparison of AS-IS and TO-BE Business Processes

Parameter	AS-IS Business Process	TO-BE Business Process	Delta Engineering Results	Percentage of Improvement
Value Added Ratio (VAR)	100%	100%	100%	Consistent
Process Complexity Score (PAC)	2,100	968	1,132	53.9%
Cycle Time	2,028 minutes	110 minutes	1,918 minutes	94.6%
Number of Actors	5	4	-1	20%
Number of Applications	1	1	0	-
Number of Channels	2	2	0	-
Number of Hand-offs	14	11	-3	21.4%
Process Steps	15	12	-3	20%

The analysis results showed significant improvements in almost all parameters:

1. **Cycle Time Reduction:** The time to complete a cooperation agreement was reduced from 2,028 minutes to 110 minutes, a reduction of 1,918 minutes (94.6 %). This achievement far exceeded the target of 80%.
2. **Process Complexity Decrease:** The AKP score decreased from 2,100 to 968, or a decrease of 1,132 points (53.9 %). This decrease indicates that the process has become simpler and more efficient.
3. **Resource Efficiency:**
   - Paper usage reduced from 5 reams to 0.5 reams per appointment (90% savings or Rp. 315,000)
   - Meeting costs dropped from Rp540,000 to Rp120,000 per case (a saving of 77.8 %)
4. **Increased Productivity: The number of** completed cooperation agreements increased from 12 cases to 28 cases in a 6-month period (133% growth) .

Impact of SIKERJA Implementation

Table 3. Impact of SIKERJA Implementation

Aspect	Conditions Before SIKERJA	Conditions After SIKERJA	Impact
Time Efficiency	2,028 minutes/case	110 minutes/case	Save 1,918 minutes (94.6 %)
Cost Efficiency	Rp. 540,000/case	Rp. 120,000/case	Save Rp. 420,000 (77.8 %)
Paper Use	5 rims/case	0.5 rim/case	Save 4.5 rims (90%)
Number of Agreements	12 cases/6 months	28 cases/6 months	Up 16 cases (133%)
Transparency	Manual, hard to track	Real-time monitoring	Increased 100%
Risk of Document Loss	Tall	Nothing	100% Elimination

User Perception of SIKERJA Benefits

Based on the survey results, respondents gave positive assessments of various aspects of SIKERJA's benefits:

Table 4. Perception of SIKERJA Benefits

Benefit Aspects	Strongly agree	Agree	Enough	Don't agree	Strongly Disagree
Simplify the application process	88.6%	11.4%	0%	0%	0%
Speed up turnaround time	85.7%	14.3%	0%	0%	0%
Increasing transparency	91.4%	8.6%	0%	0%	0%
Reduce operational costs	80.0%	17.1%	2.9%	0%	0%
Improve coordination	82.9%	17.1%	0%	0%	0%
Reducing data errors	94.3%	5.7%	0%	0%	0%

Evaluation of Target Achievement

Table 5. Evaluation of Implementation Target Achievement

Indicator	Target	Realization	Achievement	Status
Cycle time reduction	80%	94.6%	118.3%	Exceeding the target
User satisfaction	85%	96.25%	113.2%	Exceeding the target
Cost savings	70%	77.8%	111.1%	Exceeding the target
Increasing the number of PKS	50%	133%	266%	Exceeding the target
Risk elimination	90%	100%	111.1%	Exceeding the target
Average Achievement	**75%**	**100.4%**	**133.9%**	**Very Successful**

The evaluation results show that the implementation of SIKERJA achieved an average of 133.9 % of the set target, with all indicators exceeding the minimum target.

Contribution to the RPJMD

SIKERJA contributes significantly to the achievement of the Smart Public Service indicator in the 2025-2029 Kutai Kartanegara RPJMD, with an achievement of 115% of the annual target. This system is one of the leading indicators of digital transformation in the health sector in East Kalimantan.

Replication Potential

Other regional hospitals to adopt a similar system, demonstrating the high potential for replication and recognition of the best practices that have been achieved

DISCUSSION

The results of the study indicate a very high level of user satisfaction (96.25%) with the implementation of SIKERJA. This outcome not only surpasses the predetermined target (87.5%) but also firmly places the system within the "Very Satisfied" category. Such findings reinforce earlier studies suggesting that the adoption of user-friendly, reliable, and responsive information systems plays a critical role in enhancing overall user satisfaction and acceptance.

Among the evaluated dimensions, data accuracy achieved the highest score (98%), demonstrating that SIKERJA effectively minimizes input errors and enhances the quality and consistency of documentation. This result aligns with the core principles of lean management, which emphasize the elimination of waste—particularly in the form of errors, redundancies, and rework. Through features such as automated data validation and structured input formats, the digital system significantly reduces the likelihood of human error, a common issue in manual processes.

The ease-of-use dimension (97%) also emerged as a key success factor in the system's adoption. SIKERJA's intuitive interface, combined with its seamless integration with Google Forms, enables users from diverse professional and educational backgrounds to operate the system efficiently without requiring extensive training. This aspect is particularly important given the heterogeneous nature of its users, which includes both internal staff and external partners with varying levels of digital literacy. The system's accessibility therefore contributes directly to its widespread acceptance and sustained utilization.

Furthermore, the process speed score (96%) reflects SIKERJA's effectiveness in addressing one of the most significant challenges of the previous system—prolonged waiting times. The dramatic reduction in cycle time, from 2,028 minutes to just 110 minutes (a 94.6% improvement), clearly illustrates the transformative impact of digitalization. This acceleration not only enhances user satisfaction but also boosts organizational productivity by enabling a higher volume of cooperation agreements to be processed within the same timeframe.

The clarity of process flow (94%) indicates that digital standardization has successfully reduced ambiguity and inconsistencies commonly associated with manual procedures. By clearly defining each stage of the process, required documentation, and expected timelines, SIKERJA ensures that all stakeholders share a unified understanding of the workflow. This transparency minimizes miscommunication, reduces coordination challenges, and fosters smoother collaboration among involved parties.

Impact on Operational Efficiency

The implementation of SIKERJA has led to a fundamental transformation in the business process of managing cooperation agreements. This is evidenced by a substantial reduction in the Process Complexity Score (AKP) from 2,100 to 968 (a 53.9% decrease), indicating significant process simplification. Additionally, the decrease in hand-offs (from 14 to 11) and process steps (from 15 to 12) reflects the successful elimination of non-value-added activities, a key objective in process optimization initiatives.

The time efficiency improvement of 94.6% represents an exceptional achievement, far exceeding the initial target of 80%. Within the lean management framework, time is considered a critical and non-renewable resource; therefore, saving 1,918 minutes per agreement allows the organization to redirect its efforts toward more strategic priorities or to serve a greater number of partners without additional resource allocation.

In terms of cost efficiency, the 77.8% reduction in operational costs highlights the financial benefits of digital transformation. By reducing the need for face-to-face meetings—from three sessions to just one—the system lowers expenses related to transportation, meeting logistics, and the opportunity cost of participants' time. Moreover, the 90% reduction in paper usage supports environmental sustainability initiatives, aligning with green hospital principles and reducing the organization's ecological footprint.

Finally, the 133% increase in productivity over a six-month period (from 12 to 28 cooperation agreements) demonstrates the system's scalability and robustness. This substantial growth indicates that SIKERJA can accommodate increased workloads without requiring additional human resources, thereby confirming its effectiveness as a scalable digital solution capable of supporting long-term organizational expansion.

CONCLUSION

Based on the findings and conclusions of this study, several recommendations are proposed to ensure the sustainability and further development of SIKERJA implementation.

First, it is recommended that Aji Muhammad Parikesit Regional General Hospital continue strengthening and expanding the SIKERJA system by integrating it with other hospital information systems. This integration will enhance data interoperability, reduce duplication, and support more comprehensive decision-making processes.

Second, continuous improvement should be maintained by consistently applying the principles of Kaizen and Lean management. Regular evaluation, feedback collection from users, and periodic system updates are essential to ensure that the system remains responsive to evolving organizational needs.

Third, it is important to conduct regular training and capacity-building programs for both internal employees and external partners. This will ensure optimal utilization of the system, minimize user errors, and maintain high satisfaction levels.

Fourth, hospital management should develop clear standard operating procedures (SOPs) and governance policies related to digital collaboration management. This includes data security, user access control, and document standardization to strengthen accountability and compliance.

Fifth, further research is recommended to explore the long-term impact of SIKERJA on organizational performance, including service quality, stakeholder trust, and financial sustainability. Future studies may also adopt comparative or experimental designs to evaluate similar systems in other healthcare institutions.

Finally, the SIKERJA model can be considered for replication in other hospitals or public sector institutions facing similar administrative challenges. However, adaptation should consider organizational context, readiness for digital transformation, and availability of technological infrastructure.

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CONFLICTS OF INTEREST

No conflicts of interest were disclosed by the writers of this work

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