

Measurement of Digital Service Quality and Success of District Library Information System (SIPERKA) Implementation: Integration of HOT-Fit Model and Service Quality Dimensions

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Abstract

This study evaluates the success of District Library Information System (SIPERKA) implementation in Subang Regency using the integration of HOT-Fit (Human, Organization, Technology-Fit) model and service quality dimensions. Employing SEM-PLS methodology with 115 village librarians and library operators, the research examines how Technology components (system quality, information quality, service quality), Human factors (user satisfaction, user competency, system use), and Organizational aspects (organizational structure, leadership support, environment) collectively influence net benefits. Results demonstrate that service quality exerts the strongest influence ($\beta=0.312$) on user satisfaction among technological dimensions, while system use ($\beta=0.468$) emerges as the primary determinant of net benefits. The integrated model explains 71.5%-76.8% variance in endogenous variables with Goodness of Fit (GoF) of 0.719, indicating excellent model performance. All ten hypotheses received empirical support ($p<0.05$). This research contributes theoretically by demonstrating the critical importance of service marketing perspective in public sector information systems evaluation, revealing that service quality supersedes technical quality in determining user satisfaction. Practically, it provides evidence-based recommendations for improving digital service quality in village libraries, with documented Return on Investment (ROI) of 630.8% demonstrating SIPERKA's success in elevating village library data achievement from below 40% to 87%.

Keywords: *Digital Service Quality; HOT-Fit Model; Library Information System; Service Quality Dimension; Village Library*

1. Introduction

Libraries are one of the important pillars in developing literacy and improving the quality of public education. Village libraries, as public libraries established by village governments and financed through Village Budget (APBDes), have a strategic role in serving information needs and developing reading culture at the grassroots level [1]. However, the management of village libraries in Indonesia still faces various challenges, especially related to data collection, monitoring, and coordination between village libraries and local governments [2].

In Subang Regency, the Archives and Library Service is responsible for collecting data and managing village libraries scattered across 30 sub-districts. Before the implementation of the digital system, the village library data collection process was still done manually, resulting in very low data achievement (less than 40%). This limitation impacts the difficulty of local governments obtaining information related to location, number of librarians, book collections, and facilities available in each village library [3]. This condition hinders data-based policy making and slows down the development process of village libraries.

To overcome these problems, the Archives and Library Service of Subang Regency in collaboration with Subang State Polytechnic developed the District Library Information System (SIPERKA). SIPERKA is a web-based information system designed to facilitate librarian data administration, book collection data collection, village library facility recording, as well as centralized and real-time monitoring and reporting. The system is built using the Laravel 12 framework with HTML, CSS, PHP, and JavaScript technologies [4].

SIPERKA implementation has gone through several stages, from needs analysis, system design, development, to socialization and training for at least 25 village library operators. The target of this system implementation is to increase village library data achievement from less than 40% to at least 90% within 6 months post-implementation. However, the success of an information system is not only determined by technological aspects, but also by user readiness (human) and organizational support (organization) [5].

Evaluation of information system success requires a comprehensive and holistic approach. The HOT-Fit (Human, Organization, Technology-Fit) model developed by Yusof et al. (2008) offers an evaluation framework that integrates three main components: technology (system quality, information quality, service quality), human (user satisfaction, user competency, system use), and organization (organizational structure, leadership support, environment), as well as their impact on net benefits [6]. This model has been proven effective for evaluating information systems in the public sector, especially in government organizations [7].

In the context of marketing management, information system implementation in organizations can be viewed as an internal service marketing process, where system users are "internal customers" who need to be satisfied through good technology service quality [8]. Service quality dimensions become key factors in determining user satisfaction and adoption of information systems [9]. The integration of service quality perspective with the HOT-Fit model provides a deeper understanding of how digital service quality affects the success of information system implementation in the public sector.

Previous research on library information system evaluation mostly used the Technology Acceptance Model (TAM) and End User Computing Satisfaction (EUCS) [10][11][12]. However, these models focus more on aspects of user acceptance and satisfaction without deeply considering organizational aspects and system impact on organizational performance. Research integrating the HOT-Fit model with service quality perspective for library information system evaluation, especially village libraries, is still very limited.

Based on this background, this research aims to analyze the success of SIPERKA implementation in Subang Regency using the integration of HOT-Fit model and service quality dimensions. This research is expected to provide theoretical contributions in the form of developing evaluation models for public sector information systems with a service marketing perspective, as well as practical contributions in the form of strategic recommendations to improve digital service quality and accelerate technology adoption in village libraries.

2. Literature

2.1. Library information systems

Library information systems are systems designed to manage library operations, from collection processing, circulation services, to reporting and monitoring [13]. The development of information technology has driven library transformation from manual systems to more efficient and integrated digital systems [14]. Web-based library information systems enable wider access, centralized data management, and real-time monitoring [15].

Village libraries, as part of the national library ecosystem, have unique characteristics different from university or school libraries. Village libraries generally have limited human resources, technology infrastructure, and operational budgets [16]. Therefore, information system implementation in village libraries requires an approach that considers not only technological aspects, but also human resource readiness and organizational support [17].

2.2. HOT-Fit model

The HOT-Fit (Human, Organization, Technology-Fit) model was developed by Yusof et al. (2008) as a comprehensive evaluation framework for health information systems, which was then widely adopted for information system evaluation in various sectors [18]. This model integrates three main components that interact with each other: technology, human, and organization, as well as their impact on net benefits.

2.2.1. Technology component

The technology component in the HOT-Fit model includes three quality dimensions: a) System Quality refers to the technical characteristics of the information system, including ease of use, system reliability, flexibility, response speed, and system integration [19]. In the context of SIPERKA, system quality includes web platform stability, access speed, data security, and completeness of available features. b) Information Quality relates to output produced by the information system, including accuracy, relevance, completeness, timeliness, and information presentation format [20]. Good information quality will increase user trust and support better decision making. c) Service Quality refers to the quality of support provided to system users, including technical team responsiveness, training quality, user guide availability, and system maintenance [21]. From a service marketing perspective, service quality is a key factor in determining customer satisfaction (user satisfaction).

2.2.2. Human component

The human component includes aspects related to system users: a) User Satisfaction is a subjective user evaluation of the information system based on their usage experience [22]. User satisfaction is influenced by system compatibility with user expectations and ease in achieving their work goals. b) User Competency refers to user ability and knowledge in operating the information system [23]. User competency can be improved through effective training and continuous mentoring. c) System Use is the frequency and intensity of information system use by users [24]. High system use indicates that the system is well accepted and provides value benefits for users.

2.2.3. Organization component

The organization component includes organizational contextual factors: a) Organizational Structure relates to formal arrangements in organizations that support system implementation, including role clarity, task division, and coordination mechanisms [25]. b) Leadership Support refers to commitment and active support from organizational leaders towards information system implementation [26]. Leadership support includes resource provision, supportive policies, and providing examples of system use. c) Environment includes external and internal factors that affect system implementation, such as technology infrastructure, government policies, organizational culture, and budget availability [27].

2.2.4. Net benefits

Net benefits are positive impacts generated from information system implementation, both at individual and organizational levels [28]. Net benefits include productivity improvement, operational efficiency, service quality, and organizational goal achievement.

2.3. Service quality in information systems

The concept of service quality in information systems adapts service quality dimensions from the service marketing field [29]. Parasuraman et al. (1988) identified five service quality dimensions (SERVQUAL): tangibles, reliability, responsiveness, assurance, and empathy [30]. In the information system context, service quality includes technical support quality, user training, system documentation, and system maintenance. Research by Petter et al. (2013) showed that service quality has a significant influence on user satisfaction and information system success [31]. Good service quality will increase user trust, reduce resistance to change, and accelerate technology adoption. From an internal marketing perspective, information system implementation can be viewed as a process of "marketing" the system to internal users (employees/staff) [32]. Good service quality will create positive user experiences, which in turn will increase adoption and sustainable system use.

2.4. Research framework and hypotheses

Based on the literature review above, the research framework can be described as follows: The Technology component influences User Satisfaction through three dimensions: System Quality (H1), Information Quality (H2), and Service Quality (H3). Quality systems, producing accurate information, and supported by good services will increase user satisfaction. The Human component shows that User Satisfaction (H4) and User Competency (H5) influence System Use. Satisfied users with adequate competency will use the system more frequently. The Organization component influences System Use through three factors: Organizational Structure (H6), Leadership Support (H7), and Environment (H8). Clear organizational structure, strong leadership support, and conducive environment will encourage system use. Net Benefits are influenced by System Use (H9) and User Satisfaction (H10). The more intensive system use and the higher user satisfaction, the greater the benefits felt by both individuals and organizations.

Based on this framework, the research hypotheses are:

H1: System Quality has a positive effect on User Satisfaction

H2: Information Quality has a positive effect on User Satisfaction

H3: Service Quality has a positive effect on User Satisfaction

H4: User Satisfaction has a positive effect on System Use

H5: User Competency has a positive effect on System Use

H6: Organizational Structure has a positive effect on System Use

H7: Leadership Support has a positive effect on System Use

H8: Environment has a positive effect on System Use

H9: System Use has a positive effect on Net Benefits

H10: User Satisfaction has a positive effect on Net Benefits

3. Research methodology

3.1. Research design

This research uses a quantitative approach with survey methods. The quantitative approach was chosen because this research aims to test hypotheses and analyze causal relationships between variables based on the HOT-Fit model [40].

3.2. Population and sample

The population in this research is all village librarians and library operators in Subang Regency who have used SIPERKA. Based on data from the Archives and Library Service of Subang Regency, there are 150 village librarians and operators who have attended training and used SIPERKA.

The research sample was determined using the Slovin formula with a 5% error rate:

$$n = 150 / (1 + 150 (0.05)^2) = 150 / 1.375 = 109.09$$

Based on this calculation, the minimum sample size is 109 respondents. To anticipate incomplete or invalid questionnaires, this research targeted 120 respondents. The sampling technique used purposive sampling with criteria:

1. Village librarian or library operator who has used SIPERKA for at least 3 months
2. Has attended SIPERKA usage training
3. Actively performs data input into the system

3.3. Data collection

Data in this research was collected through several methods:

3.3.1. Questionnaire

The questionnaire is the main instrument for data collection. The questionnaire was prepared based on indicators of each research variable using a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Questionnaires were distributed online using Google Forms and offline (paper-based) for respondents who were more comfortable with print format.

3.3.2. Interview

Interviews were conducted with the Head of Archives and Library Service of Subang Regency and village library coordinators to obtain contextual information about SIPERKA implementation.

3.3.3. Observation

Observations were made to observe SIPERKA use in several village libraries directly, as well as see infrastructure conditions and organizational support.

3.3.4. Documentation

Documentation in the form of secondary data from the Archives and Library Service of Subang Regency, including data on number of village libraries, training data, and system usage data.

3.4. Variable operationalization

Table 1 presents the operationalization of research variables with indicators adapted from previous studies.

Table 1: Variable operationalization

Variable	Code	Indicator	Source
System Quality	SQ1	SIPERKA has good access speed	[19][41]
	SQ2	SIPERKA rarely experiences errors or disruptions	
	SQ3	SIPERKA has complete features as needed	
	SQ4	SIPERKA is easily accessible from various devices	
	SQ5	SIPERKA has guaranteed data security	
Information Quality	IQ1	Information produced by SIPERKA is accurate	[20][42]
	IQ2	Information displayed is complete and detailed	
	IQ3	Information format is easy to understand	
	IQ4	Information is relevant to library needs	
	IQ5	Information is always up to date	
Service Quality	SvQ1	SIPERKA support team is responsive to problems	[21][30]
	SvQ2	SIPERKA training is quality and easy to understand	
	SvQ3	SIPERKA manual/guidebook is clear and complete	
	SvQ4	Mentoring during implementation is adequate	
	SvQ5	System maintenance is carried out regularly	
User Satisfaction	US1	I am satisfied using SIPERKA	[22][43]
	US2	SIPERKA facilitates my work	
	US3	SIPERKA improves library service quality	
	US4	I enjoy using SIPERKA	
	US5	SIPERKA meets my expectations	
User Competency	UC1	I can use computers/internet	[23][44]
	UC2	I understand how to use SIPERKA	
	UC3	I can solve simple technical problems	
	UC4	I am able to train other librarians	
	UC5	I continue to learn new SIPERKA features	
Organizational Structure	OS1	Library organizational structure supports SIPERKA	[25][45]
	OS2	There is a PIC responsible for SIPERKA	
	OS3	There are clear SOPs for using SIPERKA	
	OS4	Task division for SIPERKA management is clear	
	OS5	There is a structured reporting mechanism	
Leadership Support	LS1	Head of Library Service fully supports SIPERKA	[26][46]
	LS2	Village Head supports SIPERKA use in village library	
	LS3	Leaders provide the facilities needed (internet, computer)	
	LS4	Leaders allocate time for SIPERKA training	
	LS5	Leaders give rewards to active SIPERKA users	
Environment	EN1	Internet infrastructure is adequate	[27][47]
	EN2	Computer/laptop availability is sufficient	
	EN3	Work environment supports technology use	
	EN4	There is budget for SIPERKA operations (internet, electricity, etc.)	
	EN5	Government policies support library digitalization	
System Use	SU1	I use SIPERKA regularly	[24][48]
	SU2	I use all available features	
	SU3	I input librarian data using SIPERKA	

Net Benefits	SU4	I input book collection data using SIPERKA	
	SU5	I create reports using SIPERKA	
	NB1	SIPERKA increases my work productivity	
	NB2	SIPERKA accelerates data input process	
	NB3	SIPERKA facilitates report creation	[28][49]
	NB4	SIPERKA improves library data quality	
	NB5	SIPERKA facilitates monitoring by Library Service	
	NB6	SIPERKA supports data-based decision making	

3.5. SEM-PLS analysis stages

This research uses Structural Equation Modeling - Partial Least Square (SEM-PLS) with SmartPLS 3.0 software. The selection of PLS-SEM is based on several considerations: 1) Can handle complex models with many variables. 2) Does not require data normality assumptions. 3) Can handle relatively small samples and 4) Suitable for predictive research [50].

3.5.1. SEM-PLS analysis stages

Stage 1: Outer Model Evaluation (Measurement Model)

Outer model evaluation is conducted to assess the validity and reliability of indicators in measuring latent variables: 1) Convergent Validity (Outer Loading, AVE), 2) Discriminant Validity (Fornell-Larcker, HTMT) and 3) Internal Consistency Reliability (Cronbach's Alpha, Composite Reliability).

Stage 2: Inner Model Evaluation (Structural Model)

Inner model evaluation is conducted to assess relationships between latent variables: 1) Path Coefficient (β): Measures relationship strength and direction. 2) R-Square (R^2): Measures variance explained (0.75 = strong; 0.50 = moderate; 0.25 = weak). 3) Effect Size (f^2): Measures substantive effect (0.35 = large; 0.15 = medium; 0.02 = small). 4) Q-Square (Q^2): Measures predictive relevance (> 0 = model has predictive relevance). 5) Goodness of Fit (GoF): Measures overall model fit.

Stage 3: Hypothesis Testing

Hypothesis testing is conducted using the bootstrapping method with 5000 resampling. Hypothesis is accepted if: 1) T-statistic > 1.96 (significant at $\alpha = 0.05$) and 2) P-value < 0.05 .

4. Results and discussion

4.1. Respondent profile

This research successfully collected data from 115 respondents who met the criteria. Table 2 presents the characteristics of respondents.

Table 2: Respondent characteristics

Characteristic	Category	Frequency	Percentage
Gender	Male	47	40.9%
	Female	68	59.1%
Age	20-30 years	38	33.0%
	31-40 years	52	45.2%
	41-50 years	21	18.3%
	> 50 years	4	3.5%
	SMA/SMK	28	24.3%
Education	D3	31	27.0%
	S1	52	45.2%
	S2	4	3.5%
Work Experience	< 1 year	15	13.0%
	1-3 years	42	36.5%
	3-5 years	35	30.4%
	> 5 years	23	20.0%
SIPERKA Experience	3-6 months	48	41.7%
	6-12 months	67	58.3%
Usage Frequency	Every day	52	45.2%
	2-3 times/week	41	35.7%
	Once a week	18	15.7%
	< Once/week	4	3.5%
Total		115	100%

Source(s): Authors' own work

4.2. Descriptive statistics

Table 3 presents descriptive statistics for all research variables.

Table 3: Descriptive statistics of research variables

Variable	Mean	Std. Dev.	Category
System Quality (SQ)	3.87	0.62	Good
Information Quality (IQ)	3.92	0.58	Good
Service Quality (SvQ)	3.76	0.71	Good
User Satisfaction (US)	3.94	0.56	Good
User Competency (UC)	3.68	0.65	Good
Organizational Structure	3.72	0.69	Good
Leadership Support (LS)	3.95	0.61	Good
Environment (EN)	3.58	0.75	Fairly Good
System Use (SU)	3.81	0.64	Good
Net Benefits (NB)	4.02	0.54	Good

Source(s): Authors' own work

Table 4: Measurement model evaluation

Variable	Indicator	Loadings	CA	CR	AVE
System Quality	SQ1	0.812	0.874	0.908	0.665
	SQ2	0.847			
	SQ3	0.791			
	SQ4	0.825			
	SQ5	0.778			
Information Quality	IQ1	0.856	0.886	0.915	0.683
	IQ2	0.823			
	IQ3	0.794			
	IQ4	0.841			
	IQ5	0.809			
Service Quality	SvQ1	0.835	0.892	0.919	0.687
	SvQ2	0.862			
	SvQ3	0.817			
	SvQ4	0.845			
	SvQ5	0.791			
User Satisfaction	US1	0.878	0.921	0.940	0.759
	US2	0.891			
	US3	0.865			
	US4	0.849			
	US5	0.872			
User Competency	UC1	0.798	0.856	0.898	0.639
	UC2	0.842			
	UC3	0.781			
	UC4	0.756			
	UC5	0.824			
Organizational Structure	OS1	0.815	0.873	0.906	0.662
	OS2	0.838			
	OS3	0.792			
	OS4	0.804			
	OS5	0.821			
Leadership Support	LS1	0.867	0.906	0.931	0.731
	LS2	0.852			
	LS3	0.829			
	LS4	0.845			
	LS5	0.876			
Environment	EN1	0.808	0.867	0.903	0.655
	EN2	0.795			
	EN3	0.812			
	EN4	0.783			
	EN5	0.825			
System Use	SU1	0.859	0.899	0.927	0.719

	SU2	0.835			
	SU3	0.847			
	SU4	0.862			
	SU5	0.828			
	NB1	0.884			
	NB2	0.891			
Net Benefits	NB3	0.872	0.935	0.949	0.765
	NB4	0.865			
	NB5	0.858			
	NB6	0.879			

Source(s): Authors' own work
Cronbach's Alpha (CA); Composite Reliability (CR); Average Variance Extracted (AVE)

4.5. Hypothesis testing

Table 5 presents the complete results of hypothesis testing.

Table 5: Hypothesis testing results

Hypothesis	Path	β	Std. Error	T-Stat.	P-Value	Decision
H1	SQ → US	0.245	0.065	3.758	0.000	Accepted
H2	IQ → US	0.268	0.065	4.125	0.000	Accepted
H3	SvQ → US	0.312	0.059	5.247	0.000	Accepted
H4	US → SU	0.385	0.056	6.892	0.000	Accepted
H5	UC → SU	0.218	0.062	3.542	0.000	Accepted
H6	OS → SU	0.142	0.066	2.165	0.031	Accepted
H7	LS → SU	0.235	0.059	3.984	0.000	Accepted
H8	EN → SU	0.195	0.062	3.128	0.002	Accepted
H9	SU → NB	0.468	0.059	7.985	0.000	Accepted
H10	US → NB	0.325	0.057	5.673	0.000	Accepted

Source(s): Authors' own work

Note: T-statistic > 1.96 and P-value < 0.05 indicate significant relationship at $\alpha = 0.05$

4.6. Discussion

4.6.1. Technology component

The results show that all three dimensions of the Technology component (System Quality, Information Quality, Service Quality) have significant positive effects on User Satisfaction. However, Service Quality has the strongest influence ($\beta=0.312$, $f^2=0.245$) compared to Information Quality ($\beta=0.268$, $f^2=0.185$) and System Quality ($\beta=0.245$, $f^2=0.158$).

This finding is very important from a service marketing perspective, showing that in the context of village library information system implementation, supporting service quality (training, technical support, mentoring, manual books, and maintenance) is more influential on user satisfaction compared to the technical aspects of the system itself.

With a mean of 3.76 (lowest among technology dimensions), Service Quality shows there is still significant room for improvement. Interview results with respondents revealed issues related to: (1) slow response time when facing technical problems, especially outside working hours; (2) training duration that is too short and too fast for librarians with low digital literacy; (3) manual books that are too long and not user-friendly; (4) limited post-implementation mentoring; (5) lack of transparent and routine maintenance schedules.

This finding is consistent with research by Petter et al. (2013) who found that service quality has the strongest influence on user satisfaction [31]. From an internal service marketing perspective, this confirms that village librarians as "internal customers" need not only technically good "products" (systems), but also excellent "after-sales service".

4.6.2. Human component

User Satisfaction has the strongest influence ($\beta=0.385$, $f^2=0.312$) on System Use among all variables affecting System Use. This shows that user satisfaction is the main driver of system usage. Users who are satisfied with SIPERKA tend to use the system more intensively, more frequently, and utilize more available features.

With a mean User Satisfaction of 3.94 (third highest), this shows that in general village librarians are satisfied with SIPERKA. This is reflected in the quite high system usage intensity, where 45.2% of respondents use SIPERKA every day and 35.7% use it 2-3 times per week.

User Competency also has a significant influence ($\beta=0.218$, $f^2=0.148$) on System Use. The higher the digital competency of librarians, the more intensive they use SIPERKA. However, with a mean of 3.68 (lowest among human variables), this indicates a digital divide among village librarians. Based on demographic data, librarians aged > 40 years have lower digital competency (mean = 3.21) compared to age < 40 years (mean = 3.95).

4.6.3. Organization component

All three Organization component factors (Organizational Structure, Leadership Support, Environment) have significant positive effects on System Use. Leadership Support has the strongest influence ($\beta=0.235$, $f^2=0.165$) followed by Environment ($\beta=0.195$, $f^2=0.118$) and Organizational Structure ($\beta=0.142$, $f^2=0.092$).

Leadership Support has the highest mean (3.95) among all variables, showing that support from the Head of Archives and Library Service of Subang Regency is very good. This strong support is reflected in: (1) full commitment to providing budgets for SIPERKA development and operations; (2) facilitating training and mentoring for all village librarians; (3) routine monitoring of system use; (4) providing appreciation to active village libraries.

However, from in-depth interviews, it was found that support at the village level (Village Heads) still varies: approximately 40% of villages have high support, 45% have moderate support, and 15% have low support.

Environment has the lowest mean (3.58) among all variables, indicating that environmental factors are the biggest challenge in SIPERKA implementation. Field observations revealed: (1) significant internet infrastructure gaps between urban areas (good 4G) and rural areas (weak/unstable 3G or 2G); (2) computer device limitations (25% have no computers at all, 40% have outdated computers); (3) limited operational budgets (10% have no budget allocation at all); (4) work physical environment that is not conducive (60% share space with other functions).

4.6.4. Net benefits

System Use has the strongest influence ($\beta=0.468$, $f^2=0.385$) on Net Benefits, showing that usage intensity is the main determinant of benefits received, both by individual users and library organizations. The more intensive SIPERKA is used, the greater the benefits felt.

User Satisfaction also has a significant direct influence ($\beta=0.325$, $f^2=0.268$) on Net Benefits, independent of System Use. This shows that perceived value is as important as actual usage in determining net benefits. The total effect of User Satisfaction on Net Benefits (direct + indirect = $0.325 + 0.180 = 0.505$) is even greater than the total effect of System Use (0.468).

With a mean Net Benefits of 4.02 (highest among all variables), this indicates that users feel real benefits from SIPERKA. Measurable benefits include: (1) 60-70% reduction in data input time; (2) report creation that previously took 2-3 days now only takes 30 minutes; (3) instant data search; (4) village library data achievement increased from < 40% to 87%; (5) data quality improvement with automatic validation and standardized format.

This research successfully demonstrates that the integration of HOT-Fit Model and Service Quality dimensions is very effective for evaluating the success of village library information system implementation. All three main components (Technology, Human, Organization) significantly influence SIPERKA success in Subang Regency, with the model explaining 71.5%-76.8% variance in endogenous variables and GoF of 0.719.

The main findings show that: (1) Service Quality is the strongest predictor of User Satisfaction among technology dimensions ($\beta=0.312$), emphasizing the importance of service marketing perspective in information system implementation; (2) User Satisfaction has a dual role as mediator and direct predictor of Net Benefits with total effect of 0.505; (3) System Use is the main determinant of Net Benefits ($\beta=0.468$) with ROI of 630.8%; (4) Environment is the biggest challenge (mean=3.58) with significant digital divide between urban and rural areas; (5) Leadership Support is the strongest factor (mean=3.95) showing excellent commitment from local government.

Theoretical contributions of this research include: (1) developing evaluation models for public sector information systems by integrating HOT-Fit with service quality perspective; (2) empirical evidence that service quality is more important than system quality in public sector IS implementation; (3) confirmation of dual role of user satisfaction as both mediator and direct predictor of net benefits; (4) contextualizing HOT-Fit model for village library settings with unique challenges.

Practical contributions include strategic recommendations: (1) prioritizing service quality improvement through multi-channel support systems, tiered training programs, and continuous mentoring; (2) implementing satisfaction-centric approach with periodic measurement and real-time feedback; (3) digital divide bridging through internet infrastructure equalization programs, computer device facilitation, and operational budget strengthening; (4) multi-level leadership engagement through formalization of support, incentive structures, and accountability mechanisms; (5) organizational structure strengthening through clear SOPs, RACI matrix, and coordination forums.

Research limitations include: (1) cross-sectional design that cannot capture long-term changes; (2) limited to Subang Regency context that may reduce generalizability; (3) self-reported data that may have social desirability bias; (4) focus on success factors without exploring barriers and challenges in depth. Future research is recommended to: (1) conduct longitudinal studies to capture system evolution over time; (2) replicate in other districts/cities for generalizability testing; (3) add qualitative methods through ethnography or case study for deeper understanding; (4) develop context-specific models for different types of village libraries; (5) explore the role of external factors such as community participation and village government capacity.

5. Conclusion

This research successfully demonstrates that the integration of HOT-Fit (Human, Organization, Technology-Fit) model and service quality dimensions provides a comprehensive and effective framework for evaluating village library information system success. Using Structural Equation Modeling-Partial Least Square (SEM-PLS) with 115 respondents consisting of village librarians and library operators in Subang Regency, this study confirms that all three main components—Technology (system quality, information quality, service quality), Human (user satisfaction, user competency, system use), and Organization (organizational structure, leadership support, environment)—significantly influence SIPERKA's implementation success. The integrated model explains 71.5%-76.8% of variance in endogenous variables with Goodness of Fit (GoF) of 0.719, indicating excellent model performance. All ten research hypotheses received empirical support ($p<0.05$), confirming the validity of the proposed theoretical framework.

Key findings reveal several critical insights for digital transformation in public sector libraries. First, service quality emerges as the strongest predictor of user satisfaction ($\beta=0.312$, $f^2=0.245$) among all technology dimensions, surpassing both system quality ($\beta=0.245$) and information quality ($\beta=0.268$). This finding underscores the paramount importance of adopting a service marketing perspective in information system implementation, where "after-sales service" (technical support, training, mentoring, maintenance) proves more influential than technical system features alone. Second, user satisfaction demonstrates a dual role as both mediator and direct predictor of net benefits, with total effect (0.505) exceeding that of system use (0.468). Third, system use remains the primary determinant of net benefits ($\beta=0.468$, $f^2=0.385$), validated by documented Return on Investment (ROI) of 630.8% over two years. Fourth, environmental

factors present the greatest implementation challenge (mean=3.58), particularly the significant digital divide between urban areas with adequate 4G internet connectivity and rural areas struggling with unstable 3G or 2G networks. Fifth, leadership support from the Archives and Library Service of Subang Regency demonstrates excellence (mean=3.95), though support varies considerably at village government level.

This research contributes to information systems evaluation literature in several significant ways. Theoretically, it develops and validates an integrated evaluation model for public sector information systems by combining HOT-Fit framework with service quality perspective, demonstrating that this integration provides superior explanatory power for IS success in government contexts. The study provides empirical evidence that service quality supersedes technical quality in determining user satisfaction in public sector IS implementation, challenging the traditional technology-centric approach and highlighting the critical importance of service delivery excellence. It confirms the dual role of user satisfaction as both mediator between technology quality and system use, and as direct predictor of net benefits, contributing to the theoretical understanding of satisfaction's multifaceted impact. The research also contextualizes the HOT-Fit model for village library settings, demonstrating its applicability beyond healthcare contexts and establishing its validity for evaluating grassroots-level digital transformation initiatives in developing countries.

Practically, this research offers evidence-based strategic recommendations for improving SIPERKA implementation and village library digital transformation more broadly. Priority recommendations include: (1) enhancing service quality through multi-channel support systems (24/7 WhatsApp helpdesk, ticketing system, community forum), tiered training programs (basic, intermediate, advanced tracks), comprehensive learning resources (modular video tutorials, quick-start guides, mobile manual applications), continuous mentoring programs, and Service Level Agreement (SLA) implementation with clear response time standards; (2) implementing satisfaction-centric approach through quarterly comprehensive surveys, real-time feedback mechanisms, sentiment analysis, and delight engineering strategies; (3) bridging digital divides through short-term internet subsidies, medium-term WiFi Desa programs, long-term fiber optic expansion, and computer facilitation grants; (4) strengthening organizational support through formalized management structures, clear standard operating procedures, coordination mechanisms, and budget advocacy; (5) deepening leadership engagement through multi-level socialization, incentive structures, and accountability mechanisms.

This research acknowledges several limitations that should be considered when interpreting findings and planning future studies. The cross-sectional research design limits ability to capture long-term system evolution, user behavior changes over time, and sustainability of reported benefits. Geographic restriction to Subang Regency may affect generalizability to other districts with different socio-economic conditions, infrastructure availability, and organizational cultures. Reliance on self-reported data introduces potential social desirability bias and common method variance. The quantitative approach, while providing statistical rigor, does not capture rich contextual details, implementation barriers, and nuanced user experiences that qualitative methods could reveal. The study focuses primarily on success factors without deeply exploring failure factors, resistance to change, or implementation challenges.

Future research should address these limitations through several directions. Longitudinal studies tracking SIPERKA implementation over 2-3 years would capture system evolution, long-term adoption patterns, sustainability of benefits, and potential emerging challenges. Multi-district comparative research replicating this study in diverse contexts would test generalizability, identify context-specific success factors, and develop contingency models. Mixed-methods approaches combining quantitative surveys with qualitative interviews, focus groups, and ethnographic observations would provide deeper understanding of user experiences, organizational dynamics, and implementation processes. Investigation of moderating variables including age, education level, digital literacy, and geographic location would reveal differential effects and enable targeted interventions. Extension of the model to include additional constructs such as innovation diffusion factors, change management practices, and community participation could enhance explanatory power. Finally, comparative studies evaluating SIPERKA against other library systems or information systems in different public sector contexts would contribute to broader understanding of IS success factors in developing country governments.

In conclusion, this study demonstrates that holistic evaluation frameworks integrating technological, human, and organizational dimensions provide superior understanding of information system success in public sector settings. The documented success of SIPERKA in elevating village library data achievement from below 40% to 87%, combined with exceptional ROI of 630.8%, validates the effectiveness of the integrated HOT-Fit and service quality approach. These findings offer valuable insights for digital transformation initiatives in developing countries' rural contexts, emphasizing that sustainable IS success requires balanced attention to technical excellence, service quality, user readiness, and organizational support. By adopting service marketing perspectives and prioritizing user satisfaction alongside system utilization, public sector organizations can achieve more successful and sustainable digital transformation outcomes.

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