

# The Effectiveness of *Sistem Informasi Pengelolaan Arsip Surat* (SIPAS) for Retrieval of Incoming and Outgoing Letters at Vocational High Schools 8 Semarang

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#### ABSTRACT

Vocational High School 8 Semarang is one of the educational institutions that manually stilluses agenda books for managing their letters. Therefore, an innovative filing system was created in the form of a Sistem Informasi Pengelolan Arsip Surat (SIPAS). The purpose of this research is to find out how effective the application of SIPAS was for retrieval of incoming and outgoing letters at Vocational High School Negeri 8 Semarang. The research method used is descriptive quantitative. The results of the data analysis show that SIPAS obtains 100% accuracy in letters archive retrieval and the retrieval time is only 8 to 10 seconds.

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**KEYWORDS:** 

effectiveness

SIPAS

retrieval

Vocational High School 8 Semarang

#### **INTISARI**

SMKN 8 Semarang merupakan salah satu lembaga pendidikan yang masih secara manual menggunakan buku agenda dalam pengelolaan surat. Oleh karena itu, dibuatlah inovasi sistem pemberkasan berupa Sistem Informasi Pengelolan Arsip Surat (SIPAS). Tujuan dari penelitian ini adalah untuk mengetahui seberapa efektif penerapan SIPAS untuk pengambilan surat masuk dan surat keluar di SMK Negeri 8 Semarang. Metode penelitian yang digunakan adalah deskriptif kuantitatif. Hasil analisis data menunjukkan bahwa SIPAS memperoleh akurasi 100% dalam pengambilan arsip surat dan waktu pengambilan hanya 8 sampai 10 detik. **KATA KUNCI:** 

efektivitas

SIPAS

temu kembali

SMKN 8 Semarang

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#### INTRODUCTION

Technological developments are accompanied by the increasing need for information in every organization. Therefore, archives as a source of information will be very useful if they are able to provide information services easily and quickly (Mulvadi, 2018). Archival information services can be said to be good if they have the effectiveness of a good archive retrieval system. A Retrieval system is an activity or process carried out to find documents needed by users with the aim of obtaining documents that are needed or relevant (Juniarso & Krismavani, 2018). Relevance in question is as said according to (Saracevic, 2008), namely, The objective of relevance judgments in IR tests is to get as close as possible to real-life situations so that test results would have real-life validity. Meanwhile, the effectiveness of archive retrieval is the degree of suitability of the requested document with the user's request or relevance (Karyono et al., 2012). Vocational High School 8 Semarang is one of the educational institutions that manually still uses agenda books in managing incoming and outgoing letters. This makes retrieval of letters archives take a long time. Therefore, researchers are interested in creating an innovation in the form of a filing system called the Letters Archive Management Information System (SIPAS) as a retrieval of incoming and outgoing letters at Vocational High School 8 Semarang. It is hoped that the existence of SIPAS can make it easier for archivists to record, store, and especially retrieve incoming and outgoing letters archives electronically.

# **RESEARCH METHOD**

The subjects used in this study were all administrative employees of Vocational High School 8 Semarang, while the main object of the research was the Letters File Management Information System (SIPAS). The research method used is descriptive research method with a quantitative approach. Descriptive research is research that seeks to describe a symptom, event, event that is happening at the present time. As for the quantitative approach, (Arikunto, 2013) explains that the approach uses quantitative because it uses numbers, starting from data collection, interpretation of the data, and the appearance of the results.

The data collection used in this research includes literature study, interviews, socialization, and experiments. The literature study is used to find information about the creation of an archive system program and how to test the effectiveness of the archive retrieval of the program. The researcher conducted interviews with Mr. Budi Prastowo as the head of Administration and Mrs. Desi Tresiana as one of the archive managers at Vocational High School 8 Semarang, the interviews were conducted to find out the advantages and disadvantages of SIPAS so that SIPAS can be improved even better. The socialization was carried out with the aim of introducing SIPAS to all Administrative employees of Vocational High School 8 Semarang, in this socialization activity, researchers received criticism and suggestions for the perfection of SIPAS.

The last stage is an experiment, an experiment is carried out to test the effectiveness of the SIPAS meeting on each incoming and outgoing letters keywords. The incoming letters has 5 keywords including *Undangan, Permohonan, Penawaran, Lomba, Observasi.* Outgoing letters has 9 keywords including *Surat Tugas, Cuti, Undangan , SK, MOU.* The effectiveness of each keyword is calculated using the accuracy matrix proposed by Chowdury.

#### Tabel 1. Matrix of Accuracy(Source: (Chowdury, 2004))

Query	Relevant	Irrelevant	Total
Rediscovered	a (success)	b (disturbance)	a+b
Not Found	c (negligent)	d (rejected)	c+d
	a+c	b+d	a+b+c+d

Based on the table above, the accuracy and acquisition will be obtained with the following formula:

Acquisition =  $[a / (a + c)] \times 100\%$ Accuracy =  $[a / (a + b)] \times 100\%$ In Principle: Retrieval =

Number of relevant records recovered Number of archives relevant to the collection Accuracy =

Number of relevant records recoveredNumber of recovered files

In addition to using the accuracy matrix proposed by Chowdury to test the effectiveness of the accuracy of incoming and outgoing letters retrieval, the researcher alsoexamines how long it takes to conductretrieval using a stopwatch on each of the incoming and outgoing letters keywords. The time needed to do archive retrieval manually 30 minutes, if the retrieval time is faster using SIPAS than manually, then SIPAS retrieval can be said to be efficient and effective. The results of the research that have been calculated will be described to clarify the conclusions from the results of the calculation of the accuracy matrix.

# **RESULTS AND DISCUSSION**

#### **Effectiveness of SIPAS Retrieval on TheIncoming Letters**

(	Sur	at Masuk					Hari ini Selasa, N	overnber 15, 20
SIPAS	Q,	Cari Surat disini					+ Tambah Data	Display ~
SMKN 8 Semarang	Jumial	h surat ditemukan:	38					
		NO SURAT MASUK	TGL SURAT MASUK	NO SURAT ASAL	TGL. SURAT ASAL	PENGRIM	PERIHAL	
🕈 Dashboard		005/540/2022	Oct. 26, 2022	147.002/UND/BEM_FISIP/X/2022	Oct. 24, 2022	Univ 17 Agustus	Undangan seminar "Membid	Edit Detail
🗗 Surat Kaluar		005/538/2022	Oct. 24, 2022	005/43935	Oct. 18, 2022	Dinas Pertanian dan Perkebunan	Undangan peliputan	Edit Detail
🛍 Administrator		005/534/2022	Oct. 21, 2022	058/UDN-Pajak-FEB/X/2022	Oct. 13, 2022	Univ 17 Agustus	Undangan tax competition	Edit Detail
⊖ Log Out		800/534/2022	Oct. 21, 2022	896/17201	Oct. 24, 2022	BPSDMD	Undangan upacara orienta	Edit Detail

Figure 1. Research Results with Keywords: Undangan Source: Research Documentation

	Surat Masuk					Hari ini Selasa, N	ovember 15, 20
SIPAS	Q Cari Surat disini					+ Tambah Data	Display 🗸
SMKN 8 Semarang	Jumlah surat ditemukan:						
	NO SURAT MASUK	TGL SURAT MASUK	NO SURAT ASAL	TGL SURAT ASAL	PENGIRIM	PERIHAL	
n Dashboard	000/549/2022	Oct. 28, 2022	2	Oct. 28, 2022	CV Harapan 45	Penawaran minyak dan air	Edit Detail
På Surat Manuk Få Surat Keluar	000/550/2022	Oct. 28, 2022	2	Oct. 28. 2022	Rukun Senior Living	Penawaran hotel	Edit Detail
Administrator	000/551/2022	Oct. 28, 2022	<i>ā</i>	Oct. 28, 2022	PT Hetero Niaga Global	Penawaran barang dan jasa	Edit Detail
🕞 Log Out	000/545/2022	Oct. 26, 2022	1517/IPS/MKT_P/X/2022	Oct. 24, 2022	Indonesia Partner Solution	Penawaran kontrak kerja	Edit Detail

Figure 2. Research Results with Keywords: *Penawaran* Source: Research Documentation

Table 2. Research Results with Keywords: Undangan

Undangan	Relevant	Irrelevant	Total
Rediscovered	38	0	38
Not Found	0	74	74
Total	38	74	112

Acquisition: <u>38</u> × 100% = 100% 38 Accuracy: <u>38</u> × 100% = 100%

38

The results of the research on the SIPAS effectiveness test on the incoming letters menu with the keyword *Undangan* obtained 100% accuracy results where the archive was recovered, namely relevant was 38 and irrelevant was 0. While the archive was not recovered, namely relevant was 0 and irrelevant was 74. In total, there are 112 letters at Vocational High School 8 Semarang. Retrieval is only done within 8seconds.

Table 3. Research Results with Keywords: Penawaran

Penawaran	Relevant	Irrelevant	Total
Rediscovered	28	0	28
Not Found	0	84	84
Total	28	84	112

Acquisition:  $\frac{28}{28} \times 100\% = 100\%$ Accuracy:  $\frac{28}{28} \times 100\% = 100\%$ 28 The results of the research on the SIPAS effectiveness test on the incoming letters menu with the keyword *Penawaran* obtained 100% accuracy results where the archive was recovered, namely relevant was 28 and irrelevant was 0. While the archive was not recovered, namely relevant was 0 and irrelevant was 84. In total, there are 112 letters at Vocational High School 8 Semarang. Retrieval is only done within 10 seconds.

	Sur	at Masuk					Hari ini Selasa, N	ovember 15, 20
SIPAS		Cari Surat disini					+ Tambah Data	Display 🗸
SMKN 8 Semarang	Jumla	h surat ditemukan: NO SURAT	19 TGL SURAT	NO SURAT ASAL	TGL SURAT	PENGRIM	PERIHAL	
A Dashboard		MASUK	MASUK	NO SUKAI ASAL	ASAL	PENGINIM	PENHAL	
H Districture		800/502/2022	Oct. 10, 2022	005/5152	Oct. 10, 2022	Cabdin Wil 1	Permohonan usulan PH KTU	Edit Detail
174 Surat Manuk			2022		2022		KI04	
🖅 Surat Keluar		800/473/2022	Sept. 27, 2022	800/4898	Sept. 26, 2022	Cabdin Wil 1	Permohonan pengisian sur	Edit Detail
Administrator		000/474/2022	Sept. 27, 2022	055/SRT.02/LJ/DE/DX/2022	Sept. 28, 2022	Lazis Jateng	Permohonan sinergi progr	Edit Detail
🕞 Log Out		420/424/2022	Sept. 2, 2022	02011/NEI.Ina/VIII/2022	Sept. 2, 2022	New Era Institute	Permohonan kunjungan	Edit Detail

Figure 3. Research Results with Keywords: *Permohonan* Source: Research Documentation

	71251							1
	Sur	at Masuk					Hari ini Rabu, N	ovember 16, 20
	Q, (	Cari Surat disini					+ Tembeh Data	Display ~
SIPAS	Jumlah	surat ditemukan:	18					-A-
SMKN 8 Semarang		NO SURAT MASUK	TGL SURAT MASUK	NO SURAT ASAL	TGL. SURAT ASAL	PENGIRIM	PERIHAL	
🛊 Dashboard		420/541/2022	Oct. 26. 2022	031/UN7/HMMAL/MIKAT/SU/2022	Oct. 23, 2022	UNDIP	Lomba Futsal SMA/SMK	Edit Detail
मि Surat Keluar		420/530/2022	Oct. 21, 2022	2849/USM.H/Q/2022	Oct. 13, 2022	USM	Lomba lari USM SMK RUN 1	Edit Detail
B Administrator		420/512/2022	Oct. 13, 2022	5-146/KR.03/2022	Oct. 10, 2022	ОЛК	Lomba Video Competition	Edit Detail
G+ Log Out		420/513/2022	Oct. 13. 2022	B/012/SUB-A/MHDP/0X/22	Sept. 25, 2022	Panitia Aksi Paskibra 2022 Komando Sub A	Lomba aksi paskriba	Edit Detail

Figure 4. Research Results with Keywords: Lomba Source: Research Documentation

Table 4. Research Results with Keywords: Permohonan

Permohonan	Relevant	Irrelevant	Total
Rediscovered	19	0	19
Not Found	0	93	93
Total	19	93	112

Acquisition: <u>19</u> × 100% = 100%

19

Accuracy: <u>19</u> × 100% = 100%

19

Table 5. Research Results with Keywords: Lomba

Lomba	Relevant	Irrelevant	Total
Rediscovered	18	0	18
Not Found	0	94	94
Total	18	94	112

Acquisition:  $\frac{18}{18} \times 100\% = 100\%$ 18 Accuracy:  $\frac{18}{18} \times 100\% = 100\%$ 18

The results of the research on the SIPAS effectiveness test on the incoming letters menu with the keyword *Lomba* obtained 100% accuracy results where the archive was recovered, namely relevant was 18 and irrelevant was 0. While the archive was not recovered, namely relevant was 0 and irrelevant was 94. In total, there are 112 letters at Vocational High School 8 Semarang. Retrieval is only done within 8 seconds.

	Sur	at Masuk					Hari ini Selasa, f	November 15,	202
SIPAS	Q	ari Surat disini					+ Tambah Dat	a Display	~
SMKN 8 Semarang	Jumlah	surat ditemukan:	9						
since sensing		NO SURAT MASUK	TGL SURAT MASUK	NO SURAT ASAL	TGL, SURAT ASAL	PENGIRIM	PERIHAL		
<ul> <li>Dashboard</li> <li>Surat Masuk</li> </ul>		070/552/2022	Oct. 28, 2022	B/15937/UN37.1.1/PG/2022	Oct. 24, 2022	UNNES	Observasi : Anggraheni P	Edit Detail	
≅† Surat Keluar		070/553/2022	Oct. 28, 2022	B/16017/UN37.1.1/PG/2022	Oct. 24, 2022	UNNES	Observasi : Muh Arfinsa	Edit Detail	Ū
80 Administrator		017/545/2022	Oct. 26, 2022	B/11576/UN37.2/PG/2022	Oct. 20, 2022	UNNES Pasca sarjana	Observasi : Luluk Latifa	Edit Detail	۵
Ge Log Out		017/521/2022	Oct. 17, 2022	140/A.15.02/UDN-05/X/22	Oct. 10, 2022	UDINUS	Observasi : Nada Salsabi	Edit Detail	0

Figure 5. Research Results with Keywords: *Observasi* Source: Research Documentation

Observasi	Relevant	Irrelevant	Total
Rediscovered	9	0	9
Not Found	0	103	103
Total	9	103	112

Acquisition:  $\frac{9}{9} \times 100\% = 100\%$ Accuracy:  $\frac{9}{9} \times 100\% = 100\%$  $\frac{9}{9}$ 

The results of the research on the SIPAS effectiveness test on the incoming letters menu with the keyword *Observasi* obtained 100% accuracy results where the archive was recovered, namely relevant was 9 and irrelevant was 0. While the archivewas not recovered, namely relevant was 0 and irrelevant was 103. In total, there are 112 letters at Vocational High School 8 Semarang. Retrieval is only done within 8 seconds.

# **Effectiveness of SIPAS Retrieval on TheOutgoing Letters**

	Surat Keluar				Hari ini Rabu	Novem	ber 16, 2
SIPAS	Q. Cari Surat disini				+ Tambah C	lata	Display
SMKN 8 Semarang	Jumlah surat ditemukan: S NO SURAT	0 TGL SURAT	KEPADA	PERIHAL	KODE		
A Dashboard	094/589/2022	Sept. 14, 2022	Bu Endang dan Bu ida Test	Surat tugas kegiatan FGD	094	Edit D	etall 🖬
₽, Surat Masuk	094/590/2022	Sept. 14, 2022	Bu Susi	Surat tugas rapat koordi	094	Edit D	etail 🖬
🖏 Surat Keluar	094/591/2022	Sept. 14, 2022	Bu Emi dan Pak Afit	Surat tugas pembukaan pa	094	Edit D	etail 🖬
Administrator	094/578/2022	Sept. 9, 2022	Hendra Dwi Permana, S.Pd	Surat tugas narasumber w	094	Edit D	etail 🗖

Figure 6. Research Results with Keywords: *Surat Tugas* Source: Research Documentation

Table 7. Research Results with Keywords: Surat Tugas

SuratTugas	Relevant	Irrelevant	Total
Rediscovered	50	0	50
Not Found	0	40	40
Total	50	40	90

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Acquisition: \frac{50}{50} \times 100\% = 100\%
50
Accuracy: \frac{50}{50} \times 100\% = 100\%
50
```

The results of the research on the SIPAS effectiveness test on the outgoing letters menu with the keyword *Surat Tugas* obtained 100% accuracy results where the archive was recovered, namely relevant was 50 and irrelevant was 0. While the archive was not recovered, namely relevant was 0 and irrelevant was 40. In total, there are 90 letters at Vocational High School 8 Semarang. Retrieval is only done within 10 seconds.

	Sura	at Keluar				Hari in	i Rabu, Nover	ber 16, 20
SIPAS	Qa	ari Surat disini				+ 1	ambah Data	Display
SMKN 8 Semarang	Jumlah	surat ditemukan: 16						
		NO SURAT	TGL. SURAT	KEPADA	PERIHAL	KODE		
n Dashboard		853/580/2022	Sept. 9, 2022	Nurbiyanti	Cuti sakit 1 hari	853	Edit Detail	8
₩ Surat Masuk		853/581/2022	Sept. 9, 2022	Dany Tri Utomo	Cuti sakit 1 hari	853	Edit Detail	8
🕎 Surat Keluar		853/559/2022	Sept. 1, 2022	Pak Ibnu	Cuti sakit 1 hari	853	Edit Detail	ō
M Administrator		853/560/2022	Sept. 1, 2022	Bu Uly	Cuti sakit 1 hari	853	Edit Detail	ō
C+ Log Out								

Figure 7. Research Results with Keywords: *Cuti* Source: Research Documentation

Cuti	Relevant	Irrelevant	Total
Rediscovered	16	0	16
Not Found	0	74	74
Total	16	74	90

**Table 8.** Research Results with Keywords: Cuti

Acquisition: <u>16</u> × 100% = 100% 16

Accuracy:  $\frac{16}{16} \times 100\% = 100\%$ 

The results of the research on the SIPAS effectiveness test on the outgoing letters menu with the keyword *Cuti* obtained 100% accuracy results where the archive was recovered, namely relevant was 16 and irrelevant was 0. While the archive was not recovered, namely relevant was 0 and irrelevant was 74. In total, there are 90 letters at Vocational HighSchool 8 Semarang. Retrieval is only done within 8 seconds.

A	Sur	at Keluar				Hari ini Rabu	, Novembe	16, 20
SIPAS	Q	Cari Surat disini				+ Tambah I	Data Dé	splay
SMKN 8 Semarang	Jumlai	h surat ditemukan: 10						
		NO SURAT	TGL SURAT	KEPADA.	PERIHAL	NODE		
R Dashboard		420/565/2022	Sept. 2, 2022	David Farhansyah XIII CG	Undangan panggilan ortu	420	Edit Deta	i 🖸
≆ Surat Masuk		005/519/2022	Aug. 18, 2022	Pimpinan G Media	Undangan Podcast	005	Edit Deta	a 🖬
🖅 Surat Keluar		420/500/2022	Aug. 9, 2022	Siswa	Undangan edaran pengambi	420	Edit Deta	. 8
B Administrator		094/493/2022	Aug. 5, 2022	Pak Hendra & Pak Bas	Undangan rapat koordinas	094	Edit Deta	
⊖≱ Log Out								

# Figure 8. Research Results with Keywords: Undangan Source: Research Documentation

Table 9. Research Results with Keywords: Undangan

Undangan	Relevant	Irrelevant	Total
Rediscovered	10	0	10
Not Found	0	80	80
Total	10	80	90

Acquisition:  $\frac{10}{10} \times 100\% = 100\%$ Accuracy:  $\frac{10}{10} \times 100\% = 100\%$ 10

						0000000	55 1	
	Sur	at Keluar				Hari ini Rab	u, Novemi	ber 16, 20
	Q	Cari Surat disini				+ Tambah	Data	Display \
SIPAS SMKN 8 Semarang	Jumlal	h surat ditemukare 10				100		
Junity of Jerrianang		NO SURAT	TGL. SURAT	KEPADA	PERIHAL	KODE		
A Dashboard		800/646/2022	Oct. 10, 2022	Yang Bersangkutan	SK Tim Penilaian Kinerja	900	Edit De	tail 🖬
🖏 Surat Masuk		800/605/2022	Sept. 21, 2022	Yang Bersangkutan	SK Kirab Budaya	800	Edit De	tail 🖬
₹† Surat Keluar		800/577/2022	Sept. 9, 2022	Yang Bersangkutan	SK Pembentukan Panitia Wat	800	Edit De	tail 🖬
Administrator		800/562/2022	Sept. 1, 2022	Yang Bersangkutan	SK Pembentukan Pameran 8	800	Edit De	tail 🔲
G→ Log Out								
				1.43	>			

**Figure 9.** Research Results with Keywords: *SK* Source: Research Documentation

Table 10. Research Results with Keywords: SK

SK	Relevant	Irrelevant	Total
Rediscovered	10	0	10
Not Found	0	80	80
Total	10	80	90

Acquisition:  $\frac{10}{10} \times 100\% = 100\%$ 10

Accuracy: <u>10</u>× 100% = 100% 10

The results of the research on the SIPAS effectiveness test on the outgoing letters menu with the keyword *SK* obtained 100% accuracy results where the archive was recovered, namely relevant was 10 and irrelevant was 0. While the archive was not recovered, namely relevant was 0 and irrelevant was 80. In total, there are 90 letters at Vocational HighSchool 8 Semarang. Retrieval is only done within 8 seconds.

	Sur	at Keluar				Hari ini Rabu	, Novem	iber 16,
SIPAS	Q	Cari Surat disini				+ Tambah I	Data	Display
SMKN 8 Semarang	Jumla	n surat ditemukan: 4						
		NO SUBAT	TGL. SURAT	KEPADA	PERIHAL	KODE		
A Dashboard		420/561/2022	Sept. 1, 2022	Yayasan Ausbilung	MOU Internasional dengan	420	Edit D	etail 🖬
174 Surat Masuk		027/535/2022	Aug. 25, 2022	IDF	MOU Kelas Industri	027	Edit D	letail 🖸
🖅 Surat Keluar		015/419/2022	July 8, 2022	Rukun Living Senior	MOU SMK 8 dengan Rukun L	015	Edit D	etail
Administrator		019.5/418/2022	July 7, 2022	RSS	MOU RSS dengan SMK 8 Sem	019.5	Edit D	etail 🖬
⊖ Log Out								

Figure 10. Research Results with Keywords: *MOU* Source: Research Documentation

**Table 11.** Research Results with Keywords: MOU

MOU	Relevant	Irrelevant	Total
Rediscovered	4	0	4
Not Found	0	86	86
Total	4	86	90

Acquisition:  $\underline{4} \times 100\% = 100\%$ 

4

Accuracy:  $\underline{4} \times 100\% = 100\%$  $\underline{4}$ 

The results of the research on the SIPAS effectiveness test on the outgoing letters menu with the keyword *MOU* obtained 100% accuracy results where the archive was recovered, namely relevant was 4 and irrelevant was 0. While the archive was not recovered, namely relevant was 0 and irrelevant was 86. In total, there are 90 letters at Vocational HighSchool 8 Semarang. Retrieval is only done within 6 seconds.

## CONCLUSION

Based on the results of the research and discussion, it can be concluded that Vocational High School Negeri 8 Semarang accepts the SIPAS program as a substitute for the agenda book in the management of active archives, especially incoming and outgoing letters electronically. SIPAS has good effectiveness in archive retrieval, both incoming and outgoing letters. The results of the effectiveness test of incoming and outgoing letters retrieval on each keyword obtained an accuracy of 100%. Retrieval which was previously done manually took approximately 30 minutes, with SIPAS archive retrieval only took between 8 to 10 seconds. Researchers have high hopes that SIPAS can be useful to support the archival system, especially the management of incoming and outgoing letters.

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