

DAFTAR PUSTAKA

- Aprilia, R., & Nasution, H.A. (2019). *Pemodelan Matematika*. Medan.
- Adigun, K., Adekele, A., Adewusi, O., Olubiyi, O., Halid, O., & Bayowa, B. (2019). Modelling Infection Diseases Using Markov Chain. *ASRJETS*: **61(1)**. 280-288
- Banks, Jerry. (2001). *Third Edition Discrete-Event System Simulation*. Prentice Hall. New Jersey.
- Ceres, Kristina, M., Schukken, Y.H., & Grohn, Y.T. (2020). Characterizing Infectious Disease Progression Through Discrete State Using Hidden Markov Models. *PLoS ONE*: **15(11)**
- Nar, Herrhyanto, G.T. (2009). *Pengantar Statistika Matematis*. Bandung: Yrama Widya.
- Hillier, F.S., Lieberman. (2008). *Introduction to Operation Research*. Yogyakarta: Andi Offset.
- Hasan, Iqbal. (2008). *Analisis Data Penelitian Dengan Statisti*. Jakarta: Bumi Aksara.
- Kementerian Kesehatan RI. (2014). Pusat Data dan Informasi. Infodatin Hepatitis. Jakarta Selatan
- Kementerian Kesehatan RI. (2004). Profil Kesehatan Indonesia tahun 2013. Jakarta
- Lekone, P.E., & B. F. Finkenstadt. (2006). Statistical Inference in a Stochastic Epidemic SEIR Model with Control Intervention: Ebola as a Case Study. *Biometrics*: **62**. 1170-1177.
- Manqib, M., Fauziah, I., & Mujiyanti, M. (2019). Mathematical Model for MERS-COV Disease Transmission with Medical Mask Usage and Vaccination. *In-prime*: **1(2)**.30-42.
- Mustofa, S., Kurniawaty E. (2013). *Manajemen Gangguan Saluran Cerna: Panduan Bagi Dokter Umum*. Bandar Lampung: Aura Printing & Publishing.
- Nasell, I. (2002). Stochastic Models of Some Endemic Infections. *Mathematical Biosciences*: **179**: 1-19.
- Nata, T.W., Puspita, D. (2016). *Aplikasi Komputer dan Pengolahan Data*. Malang: UB Press.
- Nurhasanah, B., Setiawaty, & Bukhari, F. (2016). Pemodelan Poisson Hidden Markov untuk Prediksi Banyaknya Kecelakaan di Jalan Tol Jakarta-Cikampek. *JMA* : **15(1)**. 1-12.
- Nurhayati, N. (2014). *Teori Peluang*. Jawa Tengah: (PAM 2231)-Unsoed.

- Padi, T.R., V. Kanimozhi & P.T. Sakkeel. (2022). Hidden Markov Model of Disease Progression and Control with Reference to COVID-19 Spread. *Asian Research Journal of Mathematics (ARJOM)* : **18(7).**15-31
- Rabiner, R., & Lawrence. (1989). A Tutorial on Hidden Markov Models and Selected. *IEEE*: **77(2).** 257-286.
- Riset Kesehatan Dasar (Risikesdas). (2018). Laporan Provinsi Sumatera Utara. Jakarta: Lembaga Penerbit Badan Penelitian dan Pengembangan Kesehatan (LPB).
- Sarvi, F., Nadali, A., Khodadost, M., Moghaddam, M.K., & Sadeghifar, M. (2017). Application of Poisson Hidden Markov to Predict Number of PM2.5 Exceedance Days in Tehran During 2016-2017. *Avicenna J Environ Health Eng (AJEHE)* : **10.** 1-8
- Siswanto. (2020). *Epidemologi Penyakit Hepatitis*. Samarinda: Mulawarman University Press.
- Soemohajo, Soewignjo. (2008). *Hepatitis Virus B*. Jakarta: Kedokteran EGC.
- Sugiyarto, Surono. (2021). Pengantar Proses Stokhastik. Skripsi. Yogyakarta: Universitas Ahmad Dahlan
- Supranto, J. (2009). *Statistik Teori dan Aplikasi*. Jakarta: Erlangga.
- Suryandaru, R. (2015). Estimasi Model Terbaik Banyaknya Gempa Bumi Menggunakan Poisson Hidden Markov Models dan Algoritma EM. Skripsi Jakarta:Universitas Islam Negeri Syarif Hidayatullah.
- Walpole, R.E. (1993). *Pengantar Statistika*. Jakarta: Gramedia Pustaka Utama.
- Widoyono. (2011). *Penyakit Tropis Epidemiologi, Penularan, Pencegahan dan Pemberantasan*. (edisi ke-2). Jakarta: Erlangga.
- Yerinzo, Nasution, M.L. (2003). *Pengantar Stokhastik*. Diktat. Pengetahuan Alam Padang: Universitas Negeri Padang.
- Zucchini, Iain, & McDonald. (2009). *Hidden Markov Models for Time Series*. London: CRC Press.

LAMPIRAN

Lampiran 1. Data Pasien Hepatitis B

Bulan Ke-	Banyak Pasien	Infeksi	Hepatitis B
1	0	Tidak	Tidak
2	2	HBsAg	Kronis
3	1	HBsAg	Kronis
4	3	HBsAg	Kronis
5	1	HBsAg	Akut
6	0	Tidak	Tidak
7	0	Tidak	Tidak
8	0	Tidak	Tidak
9	1	HBsAg	Kronis
10	2	HBsAg	Kronis
11	1	HBsAg	Kronis
12	2	HBsAg	Kronis
13	1	HBsAg	Kronis
14	2	HBsAg	Kronis
15	0	Tidak	Tidak
16	2	HBsAg	Kronis
17	1	HBsAg	Kronis
18	1	HBsAg	Kronis
19	0	Tidak	Tidak
20	0	Tidak	Tidak
21	10	HBsAg	Kronis
22	0	Tidak	Tidak
23	1	HBsAg	Kronis
24	1	HBsAg	Kronis
25	6	HBsAg	Akut
26	2	HBsAg	Akut
27	0	Tidak	Tidak
28	0	Tidak	Tidak
29	0	Tidak	Tidak
30	1	HBsAg	Akut
31	1	HBsAg	Kronis
32	4	HBsAg	Kronis
33	8	HBsAg	Kronis
34	0	Tidak	Tidak
35	0	Tidak	Tidak
36	3	HBsAg	Akut

UNIVERSITAS ISLAM NEGERI
SUMATERA UTARA MEDAN

Lampiran 2. Hasil *Output* SPSS

Keadaan Tersembunyi 2

Continuous Variable Information					
	N	Minimum	Maximum	Mean	Std. Deviation
Dependent Variable Bulan_Ke	33	1	36	17.79	10.621

Goodness of Fit ^a			
	Value	df	Value/df
Deviance	3236.284	28	115.582
Scaled Deviance	33.000	28	
Pearson Chi-Square	3236.284	28	115.582
Scaled Pearson Chi-Square	33.000	28	
Log Likelihood ^b	-122.489		
Akaike's Information Criterion (AIC)	256.977		
Finite Sample Corrected AIC (AIACC)	260.208		
Bayesian Information Criterion (BIC)	265.956		
Consistent AIC (CAIC)	271.956		

Dependent Variable: Bulan_Ke

Model: (Intercept), Banyak_Pasien

a. Information criteria are in smaller-is-better form.

b. The full log likelihood function is displayed and used in computing information criteria.

Continuous Variable Information					
	N	Minimum	Maximum	Mean	Std. Deviation
Dependent Variable Bulan_Ke	3	21	33	26.33	6.110

Keadaan Tersembunyi 3

Continuous Variable Information

	N	Minimum	Maximum	Mean	Std. Deviation
Dependent Variable Bulan Ke-	33	1	33	17.27	9.995

Goodness of Fit^a

	Value	df	Value/df
Deviance	2955.276	29	101.906
Scaled Deviance	33.000	29	
Pearson Chi-Square	2955.276	29	101.906
Scaled Pearson Chi-Square	33.000	29	
Log Likelihood ^b	-120.990		
Akaike's Information Criterion (AIC)	251.980		
Finite Sample Corrected AIC (AICC)	254.202		
Bayesian Information Criterion (BIC)	259.462		
Consistent AIC (CAIC)	264.462		

Dependent Variable: Bulan Ke-

Model: (Intercept), BanyakPasien^a

a. Information criteria are in smaller-is-better form.

b. The full log likelihood function is displayed and used in computing information criteria.

Continuous Variable Information

	N	Minimum	Maximum	Mean	Std. Deviation
Dependent Variable Bulan_Ke	2	1	2	1.50	.707

Continuous Variable Information

	N	Minimum	Maximum	Mean	Std. Deviation
Dependent Variable Bulan_Ke	2	1	2	1.50	.707

Keadaan Tersembunyi 4

Continuous Variable Information

	N	Minimum	Maximum	Mean	Std. Deviation
Dependent Variable Bulan Ke-	31	1	35	16.42	9.650

Goodness of Fit^a

	Value	df	Value/df
Deviance	171.039	27	6.335
Scaled Deviance	171.039	27	
Pearson Chi-Square	148.779	27	5.510
Scaled Pearson Chi-Square	148.779	27	
Log Likelihood ^b	-153.619		
Akaike's Information Criterion (AIC)	315.238		
Finite Sample Corrected AIC (AICC)	316.776		
Bayesian Information Criterion (BIC)	320.974		
Consistent AIC (CAIC)	324.974		

Dependent Variable: Bulan Ke-

Model: (Intercept), BanyakPasien^a

a. Information criteria are in smaller-is-better form.

b. The full log likelihood function is displayed and used in computing information criteria.

Continuous Variable Information

	N	Minimum	Maximum	Mean	Std. Deviation
Dependent Variable Bulan_Ke	2	25	33	29.00	5.657

Continuous Variable Information

	N	Minimum	Maximum	Mean	Std. Deviation
Dependent Variable Bulan_Ke	1	21	21	21.00	.000

Continuous Variable Information

	N	Minimum	Maximum	Mean	Std. Deviation
Dependent Variable Bulan_Ke	3	4	36	24.00	17.436



UNIVERSITAS ISLAM NEGERI
SUMATERA UTARA MEDAN