

DAFTAR PUSTAKA

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Jakarta, 28 Februari 2003

No. : Kam 1.504
Hal : Surat Keterangan
Penelitian
Lamp. : -

Kepada
Sdr. Dikan Fakultas Ekonomi
Universitas Islam Indonesia
Di
Yogyakarta

Salah satu siswa di Bank Indonesia, No.009 DEK 10 Bag. Um I 2003 tanggal 06 Januari 2003.

Menunjuk surat diatas dengan ini kami beritahukan hal-hal sebagai berikut :

Nama : Yoyok Budi Sulisyo
No.Mhs : 98311608
Jurusan : Ekonomi Manajemen

Telah melakukan penelitian selama 12 (dua belas) hari kerja dari tanggal 27 Januari 2003 sampai dengan tanggal 11 Februari 2003 dalam rangka penelitian dan pengumpulan data untuk membuat skripsi dengan judul : **ANALISIS TEORI ANTRIAN DALAM MENENTUKAN JUMLAH FASILITAS PELAYANAN YANG OPTIMAL PADA PT. BANK NEGARA INDONESIA (PERSERO) TBK KANTOR CABANG UTAMA KRAMAT JAKARTA PUSAT.**

Demikian Surat Keterangan ini dibuat agar dapat dipergunakan sebagaimana mestinya.



PT. Bank Negara Indonesia (Persero) Tbk
Kantor Cabang Utama Kramat

Drs. Gde Rata Semadi
Pemp. Bid. Operasional

Keterangan Tabel

$$n = 1304$$

Waktu untuk melayani para nasabah dalam hitungan detik dan jumlah nasabah

$$95 = 264 \text{ orang}$$

$$98 = 126 \text{ orang}$$

$$120 = 152 \text{ orang}$$

$$125 = 148 \text{ orang}$$

$$160 = 210 \text{ orang}$$

$$195 = 144 \text{ orang}$$

$$230 = 90 \text{ orang}$$

$$260 = 60 \text{ orang}$$

$$295 = 40 \text{ orang}$$

$$325 = 25 \text{ orang}$$

$$395 = 10 \text{ orang}$$

$$360 = 20 \text{ orang}$$

$$425 = 5 \text{ orang}$$

$$460 = 5 \text{ orang}$$

$$480 = \frac{1 \text{ orang}}{1304 \text{ orang}}$$

----- Queuing Performance for KOMPUTER1 -----
 02-26-2003 08:57:55

The System is M/M/1/5193/3193

Customer arrival rate (lambda)	=	25 per jam
Service rate per server (mu)	=	23 per jam
Overall system effective arrival rate	=	23 per jam
Overall system effective service rate	=	23 per jam
Overall system effective utilization factor	=	1.000015
Average number of customers in the system (L)	=	193.1798
Average number of customers in the queue (Lq)	=	192.1797
Average time of a customer in the system (W)	=	8.39912 jams
Average time of a customer in the queue (Wq)	=	8.355641 jams
The probability that all servers are idle (Po)	=	6.01E-14
The probability an arriving customer waits (Pw)	=	100
The total server cost (Cs)	=	\$0 per jam
The total customer waiting cost (Cw)	=	\$0 per jam
The total customer balking cost (Cb)	=	\$0 per jam
The overall total cost	=	\$0 per jam

----- Queuing Performance for KOMPUTER2 -----
 02-26-2003 09:02:38

The System is M/M/1/5193/3193

Customer arrival rate (lambda)	=	25 per jam
Service rate per server (mu)	=	23 per jam
Overall system effective arrival rate	=	27.98107 per jam
Overall system effective service rate	=	27.98107 per jam
Overall system effective utilization factor	=	1.000015
Average number of customers in the system (L)	=	1.921000
Average number of customers in the queue (Lq)	=	1.711000
Average time of a customer in the system (W)	=	1.068953 jams
Average time of a customer in the queue (Wq)	=	0.025474 jams
The probability that all servers are idle (Po)	=	24.34719
The probability an arriving customer waits (Pw)	=	46.01276
The total server cost (Cs)	=	\$0 per jam
The total customer waiting cost (Cw)	=	\$0 per jam
The total customer balking cost (Cb)	=	\$0 per jam
The overall total cost	=	\$0 per jam

----- Queuing Performance for KOMPUTER3 -----
 02-26-2003 09:04:43

The System is M/M/1/5193/3193

Customer arrival rate (lambda)	=	25 per jam
Service rate per server (mu)	=	23 per jam
Overall system effective arrival rate	=	27.98107 per jam
Overall system effective service rate	=	27.98845 per jam
Overall system effective utilization factor	=	1.000015
Average number of customers in the system (L)	=	1.316000
Average number of customers in the queue (Lq)	=	0.090000
Average time of a customer in the system (W)	=	0.047000 jams
Average time of a customer in the queue (Wq)	=	0.003501 jams
The probability that all servers are idle (Po)	=	25.57301
The probability an arriving customer waits (Pw)	=	14.58666
The total server cost (Cs)	=	\$0 per jam
The total customer waiting cost (Cw)	=	\$0 per jam
The total customer balking cost (Cb)	=	\$0 per jam
The overall total cost	=	\$0 per jam

----- Queuing Performance for KOMPUTER4 -----
 02-26-2003 09:06:15

The System is M/M/4/3193/3193

Customer arrival rate (λ) =	28 per jam
Service rate per server (μ) =	23 per jam
Overall system effective arrival rate =	27.98918 per jam
Overall system effective service rate =	27.98918 per jam
Overall system effective utilization factor =	.3092302
Average number of customers in the system (L) =	1.233821
Average number of customers in the queue (Lq) =	0.015899
Average time of a customer in the system (W) =	0.044082 jams
Average time of a customer in the queue (Wq) =	0.000603 jams
The probability that all servers are idle (Po) =	29.49998 %
The probability an arriving customer waits (Pw) =	3.671318 %
The total server cost (Cs) =	\$0 per jam
The total customer waiting cost (Cw) =	\$0 per jam
The total customer balking cost (Cb) =	\$0 per jam
The overall total cost =	\$0 per jam

----- Queuing Performance for KOMPUTER5 -----
 02-26-2003 09:06:15

The System is M/M/4/3193/3193

Customer arrival rate (λ) =	28 per jam
Service rate per server (μ) =	23 per jam
Overall system effective arrival rate =	27.98931 per jam
Overall system effective service rate =	27.9893 per jam
Overall system effective utilization factor =	.3413853
Average number of customers in the system (L) =	1.219715
Average number of customers in the queue (Lq) =	0.002788
Average time of a customer in the system (W) =	0.043577 jams
Average time of a customer in the queue (Wq) =	0.000099 jams
The probability that all servers are idle (Po) =	29.59198 %
The probability an arriving customer waits (Pw) =	.868406 %
The total server cost (Cs) =	\$0 per jam
The total customer waiting cost (Cw) =	\$0 per jam
The total customer balking cost (Cb) =	\$0 per jam
The overall total cost =	\$0 per jam

----- Queuing Performance for KOMPUTER6 -----
 02-26-2003 09:09:25

The System is M/M/6/3193/3193

Customer arrival rate (λ) =	28 per jam
Service rate per server (μ) =	23 per jam
Overall system effective arrival rate =	27.98933 per jam
Overall system effective service rate =	27.98933 per jam
Overall system effective utilization factor =	.2028212
Average number of customers in the system (L) =	1.217351
Average number of customers in the queue (Lq) =	0.000424
Average time of a customer in the system (W) =	.0434934 jams
Average time of a customer in the queue (Wq) =	0.000015 jams
The probability that all servers are idle (Po) =	29.60504 %
The probability an arriving customer waits (Pw) =	.1670404 %
The total server cost (Cs) =	\$0 per jam
The total customer waiting cost (Cw) =	\$0 per jam
The total customer balking cost (Cb) =	\$0 per jam
The overall total cost =	\$0 per jam

----- Queuing Performance for KCM001ER7 -----
 02-28-2003 09:11:10

The System is M/M/7/3193/3193

Customer arrival rate (lambda) =	28 per jam
Service rate per server (mu) =	23 per jam
Overall system effective arrival rate =	27.98933 per jam
Overall system effective service rate =	27.98933 per jam
Overall system effective utilization factor =	.1738467
Average number of customers in the system (L) =	1.216986
Average number of customers in the queue (Lq) =	0.000058
Average time of a customer in the system (W) =	0.043480 jams
Average time of a customer in the queue (Wq) =	0.000002 jams
The probability that all servers are idle (Po) =	29.60677
The probability an arriving customer waits (Pw) =	0.007987
The total server cost (Cs) =	\$0 per jam
The total customer waiting cost (Cw) =	\$0 per jam

----- Queuing Performance for KCM001ER8 -----
 02-28-2003 09:11:10

The System is M/M/7/3193/3193

Customer arrival rate (lambda) =	28 per jam
Service rate per server (mu) =	23 per jam
Overall system effective arrival rate =	27.98933 per jam
Overall system effective service rate =	27.98933 per jam
Overall system effective utilization factor =	.1501159
Average number of customers in the system (L) =	1.216986
Average number of customers in the queue (Lq) =	0.000007
Average time of a customer in the system (W) =	0.043478 jams
Average time of a customer in the queue (Wq) =	0.000000 jams
The probability that all servers are idle (Po) =	29.60698
The probability an arriving customer waits (Pw) =	0.004133
The total server cost (Cs) =	\$0 per jam
The total customer waiting cost (Cw) =	\$0 per jam
The total customer balking cost (Cb) =	\$0 per jam
The overall total cost =	\$0 per jam

----- Queuing Performance for KCM001ER9 -----
 02-28-2003 09:13:10

The System is M/M/7/3193/3193

Customer arrival rate (lambda) =	30 per jam
Service rate per server (mu) =	23 per jam
Overall system effective arrival rate =	27.98933 per jam
Overall system effective service rate =	27.98933 per jam
Overall system effective utilization factor =	.13852142
Average number of customers in the system (L) =	1.216986
Average number of customers in the queue (Lq) =	0.000000
Average time of a customer in the system (W) =	0.043478 jams
Average time of a customer in the queue (Wq) =	0.000000 jams
The probability that all servers are idle (Po) =	29.60701
The probability an arriving customer waits (Pw) =	0.004506
The total server cost (Cs) =	\$0 per jam
The total customer waiting cost (Cw) =	\$0 per jam
The total customer balking cost (Cb) =	\$0 per jam
The overall total cost =	\$0 per jam


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----- Queuing Performance for KOMPUTER10 -----
02-26-2003 09:14:31
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The System is M/H/10/3193/3193
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Customer arrival rate (lambda) = 26 per jam
Service rate per server (mu) = 23 per jam
Overall system effective arrival rate = 27.98933 per jam
Overall system effective service rate = 27.98933 per jam
Overall system effective utilization factor = 1.216927
Average number of customers in the system (L) = 1.216928
Average number of customers in the queue (Lq) = 9.040E-6
Average time of a customer in the system (W) = 0.043478 jams
Average time of a customer in the queue (Wq) = 3.230E-9 jams
The probability that all servers are idle (Po) = 29.60701
The probability an arriving customer waits (Pw) = 0.000052
The total server cost (Cs) = $0 per jam
The total customer waiting cost (Cw) = $0 per jam
The total customer balking cost (Cb) = $0 per jam
The overall total cost = $0 per jam
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DAFTAR III

Daftar Nilai Chi-Pangkatdua

d.f.	$\chi^2_{0,050}$	$\chi^2_{0,025}$	$\chi^2_{0,010}$	$\chi^2_{0,005}$	d.f.
1	3,841	5,024	6,635	7,879	1
2	5,991	7,378	9,210	10,597	2
3	7,815	9,348	11,345	12,838	3
4	9,488	11,143	13,277	14,860	4
5	11,070	12,832	15,086	16,750	5
6	12,592	14,449	16,812	18,548	6
7	14,067	16,013	18,475	20,278	7
8	15,507	17,535	20,090	21,955	8
9	16,919	19,023	21,666	23,589	9
10	18,307	20,483	23,209	25,188	10
11	19,675	21,920	24,725	26,757	11
12	21,026	23,337	26,217	28,300	12
13	22,362	24,736	27,688	29,819	13
14	23,685	26,119	29,141	31,319	14
15	24,996	27,488	30,578	32,801	15
16	26,296	28,845	32,000	34,267	16
17	27,587	30,191	33,409	35,718	17
18	28,869	31,526	34,805	37,156	18
19	30,144	32,852	36,191	38,582	19
20	31,410	34,170	37,566	39,997	20
21	32,671	35,479	38,932	41,401	21
22	33,924	36,781	40,289	42,796	22
23	35,172	38,076	41,638	44,181	23
24	36,415	39,364	42,980	45,558	24
25	37,652	40,646	44,311	46,928	25
26	38,885	41,923	45,642	48,290	26
27	40,113	43,194	46,963	49,645	27
28	41,337	44,461	48,278	50,993	28
29	42,557	45,722	49,588	52,336	29
30	43,773	46,979	50,892	53,672	30

Daftar ini telah diambil dari Table III dari buku R.A. Fisher, *Statistical Methods for Research Workers*, diterbitkan oleh Oliver & Boyd Ltd., Edinburgh, dan dengan seijin pengarang dan penerbit.

Kepada Yth
Bapak/ Ibu/Sdr/I
Nasabah PT BNI Persero
Cabang Kramat

Dalam rangka penyusunan skripsi kami yang berjudul "Analisis Teori Antrian dan Pengaruhnya Terhadap Penentuan Jumlah Fasilitas Pelayanan Optimal Pada PT. Bank Negara Indonesia (Persero,tbk) Cabang Kramat, Jakarta Pusat" kami mohon bantuan dari bapak/ibu/sdr/I untuk meluangkan waktu sejenak guna mengisi kuisioner yang berhubungan dengan tanggapan dan sikap anda terhadap beberapa atribut yang ditawarkan oleh BNI (Persero) cabang Karamat. Untuk itu sudilah kiranya bapak:ibu/sdr/I untk mengisi daftar pertanyaan ini dengan sejujur-jujurnya.

Dalam penelitian ini kami tidak mempunyai maksud dan tujuan apapun dibalik pengisian pertanyaan tersebut, kecuali kepentingan ilmiah dan hanya sebagai sarana untuk penulisan skripsi.

Atas segala kesediaan dan bantuan bapak/ibu/sdr/I kami mengucapkan banyak terimakasih.

Hormat peneliti

Yoyok Budi Sulisty
Mahasiswa Universitas Islam Indonesia

Fakultas Ekonomi--Program Studi Manajemen

Kuisisioner

A. Profil pribadi responden

Anda dimohon untuk menjawab beberapa pertanyaan umum mengenai data pribadi anda dengan memberi tanda (X) pada jawaban yang sesuai.

1. Berapakah usia saudara

- a. kurang dari 20 tahun
- b. 20-30 tahun
- c. 31-40 tahun
- d. lebih dari 40 tahun

2. Tingkat pendidikan yang telah saudara capai

- a. SD
- b. SMP
- c. SMU
- d. Akademi/sarjana

3. Berapakah tingkat pendapatan saudara

- a. dibawah Rp.500.000,-
- b. 500.000 – 1000.000
- c. >1000.000

4. Apakah pekerjaan saudara

- a. pegawai negeri
- b. wiraswasta
- c. petani
- d. TNI/ABRI
- e. Pelajar/ mhs
- f. Pensiunan
- g. Lain-lain (sebutkan.....)

B. Pertanyaan tentang penilaian responden

Anda dimohon untuk menjawab beberapa pertanyaan mengenai atribut-atrribut yang dimiliki oleh BNI (Persero) cabang Kramat dengan memberi tanda (V) pada jawaban yang anda paling anggap tepat.

I. Fasilitas

NO	SS	S	KS	TS
1				
2				
3				
4				
5				
6				

1. Jumlah kasir yang tersedia sangat memadai
2. Ruang tunggu dan kondisi ruangan yang tersedia membuat anda nyaman
3. Fasilitas BNI (Persero) cabang Kramat yang sudah di terapkan oleh BNI cab.Kramat sudah berfungsi dengan baik.
- 4 BNI menyediakan mesin ATM yang tedapat di tempat strategis.
5. Fasilitas tempat parkir yang tersedia sangat memadai.
6. Faktor fasilitas yang lengkap merupakan faktor utama bagi anda sehingga mendorong anda untuk menjadi nasabah PT Bank BNI (Persero) cabang Kramat.

2. Pelayanan

NO	SS	S	KS	TS
1				
2				
3				
4				

1. Para karyawan beserta dengan staf-stafnya melayani anda dengan sangat baik
2. Para karyawan memberikan informasi yang anda butuhkan sesuai dengan kebutuhan anda.
3. Kasir melayani dengan cepat, teliti, serta ramah.
4. Faktor pelayanan yang memuaskan merupakan faktor utama bagi anda sehingga mendorong anda untuk menjadi nasabah PT Bank BNI (Persero) cabang Kramat.