

Titunic Cubert of 15 Pauxengery					
Subset of 15 Paixinger					
PID	Swifined	Polays	· Sex		
KLV-	0	3	М		
2	1		F		
3	3	3	F		
4	7.1. * :	(\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	12 10 F		
5	O	, ' 3	M_		
6	0	3	М		
7	0	3	I IT . M	170	
8	0		14		
9	1	3	· MOLIF.	77.61	
10	1	2	F		
16	1	2	F		
18	1	2	M	-	
21	0	2	M		
24	1	1	M		
34	0	2	M		
			1 1		
"Swivi ved	$0 = N_0$	5, L = Yes	1	7 1 0	
"Swivived": 0= No, L = Yes "Pelan: ": 1 = 1st clans, 2 = 2nd clans, 3 = 3rd clans "See": male or female:					

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-	

1.) Calculate Prior probabilitia:

- Compute prior, probability of survival, P(s)
basedon the overall survival rate in the sample

P(s) = No of survivors
Total no of parsengers

n=15 (sample size)

no.of sunvivous = 8

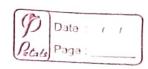
 $\rho(s) = 8 = 6.533$

Calculate Likelihoods:

- specify a probability model

we assume a binomial distribution for birany distribution (e.g. "sunvived" or "not convived")

assume a unitorm elistribution,



	we will choose uniform distribution on [0,1]. 97 donnot encode strong prior pelicy				
	p ~ Beta[], []				
	× ×				
2	Ikelihood P(DIS) and P(DI~S):				
	P(DIS) = No.07 Sunvivors who have feeture P. total no.07 sunvivors				
	P(D/~s) = No. of non-survivors who have feature p				
	4(aseg -				
	· D = female · D = Male · D - lavange 1 1 (lavange)				
	• D = Passengen is 1st (lass • D =				

P(D=Panenger 9x female
$$|S| = 6 = 3$$

P(D= Panenger is female $|S| = 0 = 0$

$$P(D = 1st Clay S) = \frac{3}{8}$$

$$P(D = 1st Clay S) = \frac{1}{2}$$

$$P(D=2 \text{ rd days}) = 3$$

$$P(D=2 \text{ rd days} \sim S) = 2$$

$$P(D=3rd clays) = 2 = 1$$

 $P(D=3rd clays) = 4$

Calculate a Postation probability:

P(S|D= Panenger nimale) = P(D|S)P(S) P(D)

P(D) = P(DIS) P(s) + P(DI~S) P(~S)

 $=\frac{1}{4}$ $\times \frac{8}{15}$ $=\frac{2}{15}$ $=\frac{2}{9}$

 $\frac{1 \times 9 + 1 \times 7}{4 \times 15}$ $\frac{2 + 7}{15 \times 15}$ $\frac{9}{15 \times 15}$

= 0.22

P(SID = Panenger in Female) = P(DIS) P(S)
P(D)

 $= 63 \times 8 = 1$

4 15

3 x 8 + C

P(SID = Lst Class) = P(DIS) P(s)

P(D)

= $3 \times 8 = 3 = 3 \times 15 = 3$

(B + | V + 3 + |

8 15 7 15 15 15

=0.75

$$P(S|D=2nd Class) = P(D|S) P(S)$$

$$= \frac{3 \times 8}{8 \cdot 15 \cdot 11 \cdot 15} = \frac{3}{15} = \frac{3}{15} = 0.60$$

$$\frac{3 \times 8 + 2 \times 7}{8 \cdot 15 \cdot 7 \cdot 15} = \frac{5}{15}$$

$$P(S|D=3rd Clas) = P(D|S)P(S)$$
 $P(D)$

$$= \frac{72 \times 8}{8 \times 15} = \frac{2}{15} = \frac{1}{3} = 0.33$$

$$\frac{2 \times 8 + 14 \times 7}{15 \times 7} = \frac{1}{5}$$

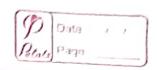
8 13 17 15

Interepretations

E

we see that make survival rate is four less.

female survivor rate i perfect



the sample is small we the entirity of data.	carrot Inference it tox
73	5

we see that 3rd Class forkerger had a lever survival rate compared to 1st and 2nd day

But it is less extreme.

swe see that being a female has the biggest ampact on survival rate.

4 second would be belonging to 1stor 2nd class it will have minimal small effect on survival rate