

R

:
()
, R

(Statistics)

- 1 가 (observation) (variable) ,
- 2 ,
- 3 가 (binomial distribution)
- 4 (probability density function) , 가
(normal distribution) .
- 5 가
- 6 가 ,
- 7 가 : 가 ,
- 8 :
- 9 : (analysis of
variance, ANOVA) 가 가 .
- 10 가 : (correlation coefficient)
가 . (regression
analysis)
- 11 : 가 (contingency
table) (test of independence) (test of homogeneity)

1

(data) , ,
:
()
:
가

1.2

(1.1) 가 5

- :
• :
• : 5
• :

(1.2) A 5 10 50 10,000

- : A 5 10,000
• :
• : 10 50
• :

- () (/)
• ()
• ()
• ()
•

1.3

- (observation)
• (variable)

- (qualitative data)
- (quantitative data)

가

(categorical data)

가 , , (cm), (kg)

- - - (:)
 - (:)
 - - (:)
 - (:)

2

2.1

: (frequency)

: (frequency table)

(2.1) 55

B A B A A B O A A A O B A B B A B A B A A O A B O A B O B B A A O A A A B B B O B B B A A B A A B O B B
O B O B A A A B A A

A , 20 (20/55=) 0.364 .

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A	20	0.364
B	18	0.327
C	10	0.182
D	7	0.127
	55	1.000

2.2

2.1 (continuous data)

2.3

(class)

(class interval)

2.4

가

$$\begin{array}{l} \bar{x} = \frac{\{x_1\} + \{x_2\} + \dots + \{x_n\}}{\{n\}} = \\ \frac{1}{n} \sum_{i=1}^n \{x_i\} \end{array}$$

(median)

(I) $\{n\}$ 가 , $\frac{\{n+1\}}{2}$

(II) $\{n\}$ 가 , $\frac{\{n\}}{2}$ $\frac{\{n\}}{2} + 1$

$\{n\}$, $\{x_1, x_2, \dots, x_n\}$,
 \bar{x} 가 $\{(x_i - \bar{x})\}$ (deviation)

0 , $\frac{1}{n}$ 가

$\{s^2\}$

(sample variance)

$\{n\}$ $\{x_1, x_2, \dots, x_n\}$, \bar{x}

$$s^2 = \frac{1}{n-1} \sum_{i=1}^n \{(x_i - \bar{x})^2\}$$

가 가 , $\{s\}$

(sample standard deviation)

$\{n\}$ $\{x_1, x_2, \dots, x_n\}$ $\{s^2\}$,

$$s = \sqrt{s^2}$$

(inter-quartile range)

$$IQR = Q_3 - Q_1 = \{Q_3\} - \{Q_1\}$$

2.5

2.6 R-

3

3.1

(probability) (experiment) 가 가 (sample space)

(measure) .

, $\{S\}$.

A가 $\{P(A)\}$, .

$$P(A) = \frac{|A|}{|S|}$$

3.2

(random variable)

가 (continuous random variable) (discrete random variable)

3.3

가 가 가 (probability distribution) 가 (probability distribution function) 가

가

$$f(x) = P(X=x)$$

- $f(x) \geq 0$ $0 \leq f(x) \leq 1$
- $\sum_x f(x) = 1$

3.4

가 가 (expected value) X $\{E(X)\}$,

$$\{E(X)\} = \sum_{\{x\}} \{x\} \{f(x)\}$$

(3.1) 가 0.5 2 가 1 2 0.3 가 , 가 . 1

$$\{X\} , \{X\}$$

x	0	1	2	
f(x)	0.2	0.5	0.3	1

$\{X\}$ 3 가 ,

$$\{E(X)\} = \sum_{\{x\}} \{x\} \{f(x)\} = 0 \times 0.2 + 1 \times 0.5 + 2 \times 0.3 = 1.1$$

1.1

- R

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