

Handout on Estimating Value for Open-Ended Interval

Example using respondent's income, General Social Survey, 1998 (see attached)

Herman P. Miller. 1966. Income Distribution in the U.S. (1960 Census Monograph). Washington, D.C. (pp. 215-20)

$$\bar{X} = X (V/(V-1)), \text{ where } V = (c-d)/(b-a)$$

X=lower limit of open-ended interval

a=log of lower limit of interval preceding open-ended interval

b=log of lower limit of open-ended interval

c=log of sum of frequencies in open-ended interval and interval preceding

d=log of frequencies in open-ended interval

[Note: both natural log and log₁₀ will work]

$$\begin{aligned} V &= \frac{c-d}{b-a} = \frac{\ln(60) - \ln(40)}{\ln(110,000) - \ln(90,000)} = \frac{4.094 - 3.689}{11.608 - 11.408} \\ &= \frac{.405}{.2} = 2.025 \end{aligned}$$

$$\bar{X} = 110,000 \left(\frac{2.025}{2.025-1} \right) = 110,000 \left(\frac{2.025}{1.025} \right)$$

$$\bar{X} = \$217,317$$

Codebook Variable : RINCOM98

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Pick Variable

Next

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49. Respondent's income on the 1998 survey. For question wording, see Q.38.

HAND

CARD K

RESPONSE	PUNCH	YEAR									COL: 157- 158
		1972- 82	1982B	1983- 87	1987B	1988- 91	1993	1994	1996	1998	
Under \$1,000	01	0	0	0	0	0	0	0	0	42	42
\$ 1,000 to 2,999	02	0	0	0	0	0	0	0	0	42	42
\$ 3,000 to 3,999	03	0	0	0	0	0	0	0	0	40	40
\$ 4,000 to 4,999	04	0	0	0	0	0	0	0	0	27	27
\$ 5,000 to 5,999	05	0	0	0	0	0	0	0	0	32	32
\$ 6,000 to 6,999	06	0	0	0	0	0	0	0	0	43	43
\$ 7,000 to 7,999	07	0	0	0	0	0	0	0	0	41	41
\$ 8,000 to 9,999	08	0	0	0	0	0	0	0	0	63	63
\$10,000 to 12,499	09	0	0	0	0	0	0	0	0	110	110
\$12,500 to 14,999	10	0	0	0	0	0	0	0	0	89	89
\$15,000 to 17,499	11	0	0	0	0	0	0	0	0	92	92
\$17,500 to 19,999	12	0	0	0	0	0	0	0	0	106	106
\$20,000 to 22,499	13	0	0	0	0	0	0	0	0	127	127
\$22,500 to 24,999	14	0	0	0	0	0	0	0	0	111	111
\$25,000 to 29,999	15	0	0	0	0	0	0	0	0	160	160
\$30,000 to 34,999	16	0	0	0	0	0	0	0	0	169	169
\$35,000 to 39,999	17	0	0	0	0	0	0	0	0	107	107
\$40,000 to 49,999	18	0	0	0	0	0	0	0	0	178	178
\$50,000 to 59,999	19	0	0	0	0	0	0	0	0	109	109
\$60,000 to 74,999	20	0	0	0	0	0	0	0	0	64	64
\$75,000 to 89,999	21	0	0	0	0	0	0	0	0	37	37
\$90,000 to 109,999	22	0	0	0	0	0	0	0	0	20	20
\$110,000 or over	23	0	0	0	0	0	0	0	0	40	40
Refused	24	0	0	0	0	0	0	0	0	118	118
Don't know	98	0	0	0	0	0	0	0	0	26	26
No answer	99	0	0	0	0	0	0	0	0	41	41
Not applicable	BK	13626	354	7542	353	5907	1606	2992	2904	798	36,082