

Chapter VIII. THE COST OF THE QUALITY CONTROL

Neither the budget nor the cost accounts separate all quality control work from other activities. Estimates have been prepared, from a time-study analysis of the field work, of the time spent by crew leaders, field reviewers, and District Office personnel on activities that related to quality control.

The cost of the crew-leader work that was purely on quality control represents 47 percent of the total cost of salaries and travel paid to crew leaders. The total estimated cost for quality control work thus derived is \$8,571,254. See table 51.

One point to remember is that the crew leader cost

of statistical quality control is not an incremental cost. That is, the Bureau of the Census would have spent the same amount for crew leaders whether they conducted formal statistical quality control programs or whether they instead used informal and varying methods of reviewing and judging the enumerator's work that took the same amount of time.

It has been estimated that the entire field operation probably cost 60 million dollars. Experience in the Bureau in other areas has shown that an effective quality control program usually represents a cost of at least 20 percent of the entire operation. In 1960, it was about 14 percent of the total cost.

Table 51.--Estimated Cost of Quality Control of Field Work

Operation	Mean hours per EA ¹			Estimated cost in dollars ¹			
	Stage I EA's (137,000)	Stage II EA's (137,000)	Single-stage EA's (34,000)	Stage I	Stage II	Single-stage	Total
Total.....	(Y)	(Y)	(Y)	(Y)	(Y)	(Y)	\$8,571,254
In field.....	(Y)	(Y)	(Y)	(Y)	(Y)	(Y)	7,241,268
Crew Leaders.....	(Y)	(Y)	(Y)	(Y)	(Y)	(Y)	4,547,650
Preparatory ²	2.433	(X)	2.433	605,142	(X)	151,819	756,961
Field review.....	1.600	2.682	3.000	427,440	716,496	198,800	1,342,836
Closeout review ³	0.924	0.665	.900	246,847	177,548	59,670	484,065
Transcription verification....	0.718	(X)	.700	191,814	(X)	46,410	238,224
Clean-up.....	0.888	1.306	1.000	237,229	348,898	66,300	652,427
Travel time ⁴	0.668	1.041	0.882	183,032	285,234	59,976	528,242
Mileage ⁵	(X)	(X)	(X)	(Y)	(Y)	(Y)	544,895
Field reviewers ⁶	-	-	-	-	-	-	71,667,618
Field review.....	2.029	2.582	3.000	444,757	565,974	163,200	1,173,931
Closeout review.....	0.229	0.229	0.229	50,197	50,197	12,458	112,852
Transcription verification....	0.276	(X)	0.275	60,499	(X)	14,960	75,459
Clean-up.....	0.218	0.235	0.220	47,786	51,512	11,968	111,266
Mileage ⁸	(X)	(X)	(X)	(Y)	(Y)	(Y)	194,110
Enumerator fee.....	(X)	(X)	(X)	548,000	274,000	204,000	1,026,000
In District Office.....	(Y)	(Y)	(Y)	(Y)	(Y)	(Y)	91,329,986
Damaged books.....	0.023	0.023	0.023	5,325	5,325	1,322	11,972
Closeout.....	0.028	0.028	0.028	6,483	6,483	1,609	14,575
Office edit.....	0.168	0.518	0.520	38,897	119,933	29,879	188,709
Payroll verification.....	0.228	0.073	0.150	52,789	16,901	8,619	78,309
Transcription verification....	0.382	(X)	0.382	88,444	(X)	21,950	110,394
Correction.....	0.050	0.050	0.050	11,577	11,577	2,873	26,027

See end of table for footnotes.

QUALITY CONTROL OF THE FIELD ENUMERATION

Table 51.—Estimated Cost of Quality Control of Field Work—Continued

Operation	Mean hours per EA ¹			Estimated cost in dollars ¹			
	Stage I EA's (137,000)	Stage II EA's (137,000)	Single-stage EA's (34,000)	Stage I	Stage II	Single-stage	Total
In District Office—Continued							
QC supervisors ¹⁰	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	400,000
Technical Officers ¹¹	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	400,000
Leave.....	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	100,000

NA Not available. Y Not calculated. X Not applicable.

¹Estimated times per EA and costs are based, unless otherwise noted, upon sample data presented in: U.S. Bureau of the Census. U.S. Censuses of Population and Housing, 1960: Enumeration Time and Cost Study. Washington, D.C., 1963. The average time spent per crew leader and field reviewer was divided by 17 to obtain the number of hours per EA. Crew leader hours were paid at \$1.95 per hour; field reviewer hours, \$1.60.

This study only covered the two-stage areas; estimates for the single-stage areas are thus guesses.

This study did not cover the entire range of activities upon which the District Office personnel spent their time as it did for crew leaders and field reviewers. It is therefore possible that the costs for the District Offices represent underestimates of the quality control work done there.

²Costs for this work are based on the original number of EA's (127,550 in two-stage areas; 32,000 in single-stage), and include travel time.

³The time estimated for "closeout" undoubtedly includes some final field review and payroll work.

⁴This includes 50 percent of all travel time other than for preparatory work.

⁵.07 per mile for 50 percent of all miles traveled.

⁶Travel time is included with the associated activity.

⁷Another estimate from a one percent sample of payrolls of enumerator appointment personnel showed \$1,607,000.

⁸.07 per mile for all miles traveled.

⁹Another estimate from a one percent sample of payrolls of enumerator appointment personnel showed \$1,581,300.

¹⁰This estimate is an "educated guess".

¹¹This estimate has been obtained by weighting the salaries by the number of weeks the District Offices were open after April 1, 1960.

Source: Enumeration time and cost study, and one percent sample of payrolls of enumerator appointment personnel.