CHAPTER THREE: SURVEY OF EMPLOYEE ATTITUDES ABOUT TRAINING PROGRAMS

Using data from an interagency organization-climate survey, this chapter examines employee opinions about training as the basis for a training performance measure. While the climate survey has certain limitations (most notably that it includes opinions of employees in non-statistical functions and asks about training in general), the subcommittee concludes that perceptions and attitudes about training currently vary by agency. Overall, a majority of employees agree that they receive the training necessary to perform their jobs, but just over one-third believe that training is given high priority at their agency. In the recommendations section the subcommittee explores ways to heighten awareness and communication of training.

1.   Attitudes/Opinions as Performance Measures

Chapter Two provided a quantitative benchmark of the volume, variety, cost, and enrollment of training courses offered by each agency. This chapter examines training from a different perspective — that of performance measurement.

One of the principles recommended by the Committee on National Statistics (CNSTAT) for adoption by the statistical agencies is that the agencies devote resources to the professional advancement of staff. A key element of this policy is the continuing education and training of staff. (*Martin and Straf*) To monitor whether goals like these are being met, a set of performance measures should be established and maintained over time. (*NPR*; *Kirkendall and Staller*; *Sink and Tuttle*) In this case, the performance method is straightforward: Ask employees about their experience with training.

Performance measures are a valuable addition to the assessment of training because they serve as agency "barometers" of how employees perceive training opportunities. They also act as benchmarks for evaluating efforts to improve training. Although performance measures are more subjective than data from the training inventory survey, they are still critical if we wish to under- stand differences in training among the statistical agencies and identify recommendations for improvement. If, after all, an agency has an outstanding training curriculum, but its employees are either not aware of it or feel that they are not given a chance to participate, how effective can it really be?

2.   Methodology

To report on training from the employee's perspective, the subcommittee used performance measures from an organizational climate survey of federal statistical agencies. As part of the 1996-1997 Survey Practicum, the Joint Program in Survey Methodology (JPSM) at the University of Maryland conducted an organizational climate survey of employees in nine federal statistical agencies. One of the Practicum objectives was to help agencies comply with the Government Performance and Results Act (GPRA) by supplying first-time measures that federal statistical agencies could replicate and then use as benchmarks. Prior thereto, there was no existing database of employee perceptions by which a statistical organization could measure its comparative performance.

In the five largest agencies, the data were collected under a split panel design using a combination of mail survey (paper and pencil) and electronic mail (e-mail) questionnaire that went to all employees of the participating organizational units. The census data collection methodology included a pre-notice letter from the agency head, a pre-notice letter from the JPSM, the survey questionnaire (mail or e-mail), a follow-up postcard (or e-mail), and finally, a telephone follow-up reminder. Data collection occurred between January and April of 1997. (*University of Maryland Survey Research Center*)

The agencies participating in the survey included: Bureau of the Census, National Agricultural Statistics Service, Energy Information Administration, Bureau of Transportation Statistics, Bureau of Justice Statistics, National Science Foundation Division of Science Resource Studies, National Center for Education Statistics, Bureau of Economic Analysis and Economic Research Service. With the exception of temporary workers and field interviewers, the survey attempted to deliver a questionnaire to every employee in each agency. Consequently, the design was closer to a census than a sample of agency employees. This is important to note since the rest of the subcommittee's report concentrates more specifically on employees who perform statistical functions.[2]

Response rates varied from agency to agency (BoC=51.6%; NCES=52.8%; BJS=61.0%; BTS=61.9%; NSF=62.2%; EIA=64.1%; BEA=65.6%; ERS=67.2% and NASS=71.8%). All agencies combined, 4,834 employees responded, for an overall response rate of 56.9 percent. The e-mail response rate was significantly lower than the mail panel (42.9% versus 70.2%).

3.   Limitations

Several limitations are noted before discussing the climate survey results. First, it is important to emphasize that an organizational climate survey differs greatly from factual or event-based surveys typically carried out by statistical agencies (many of which routinely achieve response rates of 90 percent or more). Typically, opinion surveys have a higher perception of sensitivity and thus, more potential for nonresponse than non-opinion based data collections. Further, even though the survey was administered by an outside organization, it is likely that some employees were still concerned about the confidentiality of responses.

There were also technical problems with the e-mail panel that hampered the data collection. The e-mail respondents at both EIA and BoC had great difficultly viewing, editing and returning the e-mail questionnaires. As a result, the e-mail response rates at these agencies were lower than others.

These factors contributed to the overall response rate (56.9%) being somewhat below some climate/attitude surveys conducted previously at federal statistical agencies. For example, NASS climate surveys achieved 66 percent in 1990, 63 percent in 1993 and 77 percent in 1994. At the Census Bureau, employee attitude surveys had a 73 percent response rate in 1989, 62 percent in 1991 and 56 percent in 1993. None of these surveys included e-mail as a response mode.

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[2] For confidentiality reasons, we were prevented from limiting the climate survey analysis to those in statistically-related job series.

Because of the low response rate, the measures reported in this chapter are not likely to be representative of the entire agencies' population and in fact, may be biased due to nonresponse. For example, employees who decided to participate in the climate survey may have a greater trust in their agency and been less concerned about confidentiality of their responses. These employees may also have an overall higher opinion of their agency compared to those who chose not to respond. Conversely, it is possible that those who responded were motivated to do so because they were unhappy with conditions at their agency and wanted the opportunity to voice these opinions. The climate survey did not conduct any type of nonrespondent debriefing, therefore the subcommittee does not know if the opinions of nonrespondents differ significantly from respondents. Consequently, all inferences in this chapter reflect only the subpopulations within each agency that chose to respond. However, the results do not have sampling or random error as the survey was a census of the agency employees.

Another limitation concerns the climate survey questions themselves. The survey asked questions on a range of topics related to organizational climate. One of these topics dealt with employees' perception and attitudes toward their agency's training and career development. Members of the FCSM Training Subcommittee provided several questions pertaining to training and were allowed to review and comment on them during the questionnaire design process. However, it is very important to note that the questions about training were general rather than specific to statistical training. Thus, the findings in this chapter are broader than those in the previous chapter — which focus specifically on survey and statistical training.

4.   Data and Results

Since the survey was intended to measure organization-wide concepts, respondents were instructed to answer questions based on the experiences of the overall climate in their agency rather than from an individual perspective. For the purposes of our analysis, both the mail and e-mail responses are combined.[3]

The section on training had five questions addressing the respondents' perception of agency training. In order to avoid response set biases, the third question was intentionally worded in the reverse direction of the other questions. That is, a high score indicated a *negative* perception of training. This item was appropriately recoded before conducting the analysis. An additional question addressed the respondent's individual satisfaction with their training. This last question was at the end of the questionnaire with other questions addressing respondent satisfaction with their work environment. The questions are stated in Figure 1.

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[3] The subcommittee found little evidence that responses differed significantly by mode of response. For the Bureau of the Census, of the 14 questionnaire topic mean scores, half of the topic scores differed by mode of response while the other half did not. Of those that were significantly different, the e-mail mean responses were significantly higher for half of the topics while the mail mean scores were higher for the other half.

Figure 1. Questions on Employee Satisfaction with Training

On the following scale, circle the number to indicate how much you agree or disagree with each statement.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Don't Know
Employees receive the training necessary to do their jobs.	1	2	3	4	5	
	9					
Employees receive needed training about new technologies.	1	2	3	4	5	
	9					
Training opportunities are unfairly allocated across employees or work units.	1	2	3	4	5	
	9					
Supervisors/team leaders support employee efforts to learn outside the job (e.g., conferences, cont. education, membership in trade or prof. org.).	1	2	3	4	5	
	9					
High priority is given to providing appropriate training.	1	2	3	4	5	
	9					

	Very Dissat.	Dissat.	Neutral	Satisfied	Very Satisfied
Overall, how satisfied are you with the training you have received at the agency?	1	2	3	4	5

Tables 1 through 6 contain survey results for the training questions, by agency. The table columns are arranged in descending order by number of employees responding to the particular question. There is a large variability in the size of the agencies in the survey and consequently, in the number of survey participants. The size of the organization may be a factor in the development and delivery of training to its employees.

Table 1. Employees Receive Training Necessary to do their Jobs

	BoC	NASS	ERS	BEA	EIA	NCES	BJS	NSF	BTS	Total
Disagree	29.4%	20.4%	19.4%	18.7%	21.1%	26.3%	20.0%	7.1%	15.4%	25.7%
Neutral	17.0	15.5	22.5	18.7	24.5	15.8	22.9	10.7	7.7	17.7
Agree	52.3	64.0	56.9	61.9	53.2	57.9	54.3	82.1	69.2	55.6
D.K.	1.3	0.0	1.1	1.0	1.1	0.0	2.9	0.0	7.7	1.0
N	2892	847	355	278	278	57	35	28	13	4783

More than half of those surveyed (55.6%) believe that they receive the necessary training to perform their jobs (responses of 'agreed' and 'strongly agreed' are combined, likewise responses of 'disagreed' and 'strongly disagreed' are combined). The BoC had the lowest agreement with this sentiment (52.3%) while the NSF had the highest (82.1%).

Table 2. Employees Receive Training to Keep Up with New Technologies

	BoC	NASS	ERS	BEA	EIA	NCES	BJS	NSF	BTS	Total
Disagree	36.7%	22.1%	17.7%	14.5%	24.2%	21.0%	20.0%	7.1 %	15.4%	30.1%
Neutral	18.1	19.1	17.4	17.4	22.0	15.8	14.3	7.1	15.4	18.3
Agree	43.3	58.2	64.0.	67.7	51.6	63.2	65.7	85.6	69.2	50.2
D.K.	1.9	0.6	0.8	0.4	2.2	0.0	0.0	0.0	0.0	1.4
N	2892	847	355	278	278	47	35	28	12	4783

Again, half (50.2%) agreed that the training they receive allows them to keep up with new technologies. The percent of agreement was lowest for employees at the BoC (43.4%) and highest at the NSF (85.6%).

Table 3. Training Opportunities are Unfairly Allocated

	BoC	NASS	ERS	BEA	EIA	NCES	BJS	NSF	BTS	Total
Disagree	36.6%	50.8%	55.0%	50.9%	48.6%	52.6%	48.6%	71.4%	76.9%	42.6%
Neutral	23.1	20.3	17.1	22.8	20.7	12.3	14.3	7.1	15.4	21.7
Agree	29.9	25.2	18.8	15.0	21.5	22.8	20.0	10.7	7.7	26.6

D.K.	10.4	3.8	9.0	11.4	9.5	12.3	17.1	10.7	0.0	9.1
N	2892	849	356	281	275	57	35	28	13	4786

Just over one-quarter of the combined responses (26.6%) express a belief that opportunities for training are unfairly allocated across employees or work areas. This was most evident at BoC, where 30% agreed with the statement. Conversely, at BTS, fewer than 10% believed that training opportunities are not uniformly available.

Table 4. Supervisors Support Employee Learning Outside the Job

	BoC	NASS	ERS	BEA	EIA	NCES	BJS	NSF	BTS	Total
Disagree	26.7%	13.6%	18.5%	16.0%	14.9%	29.8%	14.3%	0.0%	7.7%	22.2%
Neutral	23.3	18.6	14.9	20.2	23.3	14.0	5.7	0.0	7.7	21.2
Agree	43.0	64.8	65.2	59.2	60.0	52.6	77.2	100	84.6	51.3
D.K.	7.0	3.1	1.4	4.6	1.8	3.5	2.9	0.0	0.0	5.3
N	2895	849	356	282	275	57	35	28	13	4790

Table 4 shows employee opinion of agency support for external learning opportunities such as conferences, continuing education classes, and participation in professional associations. Just over half (51.3%) feel that their agency supports off-the-job learning. At the NSF, there was unanimity on this point (100%); at the BOC, fewer than half agreed (43%).

Table 5. High Priority is Given to Training

	BoC	NASS	ERS	BEA	EIA	NCES	BJS	NSF	BTS	Total
Disagree	39.4%	22.9%	30.4%	23.8%	32.3%	47.4%	28.6%	21.4%	23.1%	34.3%
Neutral	26.0	24.6	31.8	29.8	29.8	19.3	14.3	14.3	38.5	26.4
Agree	30.5	50.4	35.2	42.6	36.7	28.1	48.6	60.7	38.5	35.7
D.K.	4.2	2.1	2.5	3.9	1.1	5.3	8.6	3.6	0.0	3.5
N	2897	846	355	282	275	57	35	28	13	4788

Respondents were somewhat ambivalent whether they perceive training at their agency to have high priority: over one-quarter (26.4%) marked the "neutral" category. Just over one-third of those surveyed (36%) believe that their agency places a high priority on training. At the extremes were NSF and NCES. NSF employees were most likely to say that training is given high priority while those at NCES were least likely.

Table 6. Overall, how satisfied are you with the training you have received?

	BoC	NASS	ERS	BEA	EIA	NCES	BJS	NSF	BTS	Total
Dissatisfied	25.8%	17.8%	14.4%	17.4%	19.9%	25.0%	22.9%	7.4%	0.0%	22.5%
Neither	22.7	19.5	26.8	23.8	25.3	35.7	34.3	22.2	30.8	22.9
Satisfied	51.6	62.6	58.9	58.7	54.9	39.3	42.9	70.4	69.2	54.6
N	2900	851	355	281	277	56	35	27	13	4795

In response to the overall satisfaction question, more than half the combined sample (55%) indicated that they were satisfied with the training they have received at their agency. Employees at the NSF and BTS had the largest percentage of satisfied employees, 70.4 percent and 69 percent, respectively, while NCES and the BJS had the two lowest percentages, 39.3 percent and 42.9 percent, respectively.

The individual questions provide detail about training perceptions as measured in the organizational climate survey. In order to make summary comparisons across agencies, a training "score" was created. Scores to the six training questions (i.e., Strongly Disagree=1, Disagree=2, Neutral=3, etc.) were summed together and divided by 6. Answers of Don't Know were excluded while missing values were recoded to the overall mean scale score. Higher scale scores in Table 7 reflect a positive perception of training and career development while lower scores reflect a less positive outlook.

Table 7. Training Mean Scale Scores, by Agency

	BoC	NASS	ERS	BEA	EIA	NCES	BJS	NSF	BTS
Mean Scale Score	3.08	3.46	3.41	3.48	3.34	3.19	3.46	3.88	3.76
N	2449	799	316	238	247	49	29	25	12

The NSF had the highest absolute mean training score (3.88) and BoC the lowest (3.08). To gain some perspective on these scores, we compared the combined agency training mean score to that of the other climate survey topic areas (e.g., rewards, job security, innovation, etc.). The training score ranked near the middle, that is, there were seven topics that received a higher mean rating and six that received a lower rating. The combined agency mean training score was 3.2, which is slightly above the neutral rating of 3 on the 5 point scale.

5.   Summary and Conclusions

For a training program to be effective, it must be perceived as useful and available by employees who seek it. By examining the training questions from the JPSM organizational climate survey, one can study the current attitudes about the statistical training opportunities across agencies and use them as performance measures. However, the design and content of the climate survey place certain limitations on our conclusions because first, the survey reflects all types of employees, not just statisticians and, second, because the questions about training refer to all types of training, not just statistical. Moreover, the results must be interpreted in the context of a somewhat low response rate that reflect only a subgroup from each agency. These findings cannot be inferred to the nonrespondent population within each agency.

There was a fair amount of variation among some agencies, but, overall, roughly half of the respondents perceive that employees are receiving the training necessary to do their jobs and keep up with new technologies. Similarly, over half view their agency as being supportive of external training opportunities offered through conferences and professional associations. However, less than half of those surveyed perceive training to be a high priority at their agency or to be fairly allocated across work units or employees.

What are the implications? The subcommittee's performance measures of employee satisfaction suggest a need for improvement at some agencies. Findings from the previous chapter indicate that the number, type, and length of courses offered to statistical employees varies across agencies, but that, overall, statistical training opportunities are fairly abundant. The subcommittee's findings from the employee survey suggest that employee perception of training availability does not reflect the real abundance of offerings. Perhaps the agencies that reflect this discrepancy need to elevate the visibility of their training opportunities, encourage more employees to participate, and communicate that training is a high priority.

To explore this further, the subcommittee inquired about the training program at the NSF since they consistently scored high in employee training satisfaction. We found that in 1993, an NSF training committee developed a policy with training principles and procedures. The recommendations contained guidelines to ensure that training is distributed wisely and equitably. For example, the policy recommends adherence to three principles: (1) that all training be deemed useful to the employer, (2) that training be directly related to an individual's job, and (3) that training not be taken too far in advance of the time when it is likely to be used. The policy also recommends that both staff and management share in the development, planning, conduct, and evaluation of training strategies. Although NSF represents one of the smaller statistical organizations, their principles may be relevant to other statistical agencies.

The committee also recommended that quarterly training reports on all training and conference activities be produced. These summaries allow NSF staff to see where they are relative to others and to generate ideas on the types of training they want to take. They keep information "out in the open," thus assuring staff that training resources and opportunities are being allocated equitably. NSF reports that since the

training policy was put into effect, visibility in training activities has increased. This is encouraging, but its largest impact is on lower level employees. It is unclear what its training implications are for "statistical" employees.

Perhaps some agencies should consider conducting focus groups with different subpopulations of employees in order to explore their awareness of training (where and how they get their information), what kinds of training they want more or less of, and why they may fail to take advantage of the opportunities available. Sometimes these simple exercises can help expose weaknesses in the communication chain between those who plan and provide for training and those for whom it is intended.

While measures of employee satisfaction may be useful in some aspects of planning for training, these measures are subjective, relating largely to the employee's most recent training experience. Objective measures (e.g., evaluations of program, performance and product) provide a better (albeit more difficult) gauge of the payoff from training. A standard measure of average per-employee training cost would have been useful in comparing training-perception scores with training expenditures. The subcommittee discovered that a valid measure of training cost is not available across agencies (due to differences in accounting practices, training classifications, and training definitions). An interagency training database with standardized definitions and variables could provide the basis for measures to test work performance. Ideally, these measures would correlate — to work performance — both the type and extent of training received and some objective measure of employee satisfaction with training opportunities.

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