INSTITUT LATIHAN STATISTIK MALAYSIA

KOLOKIUM STATISTIK 2015

A STUDY ON THE TRAINING EFFECTIVENESS IN SCHOOL OF METHODOLOGY, RESEARCH AND QUALITY, ILSM.

27-28 OKTOBER 2015

SCHOOL OF METHODOLOGY, RESEARCH AND QUALITY (MPK)

OUTLINE OF PRESENTATION

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- INTRODUCTION
- RESEARCH QUESTIONS
- OBJECTIVE OF THE STUDY
- LITERATURE REVIEW
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- RESULTS
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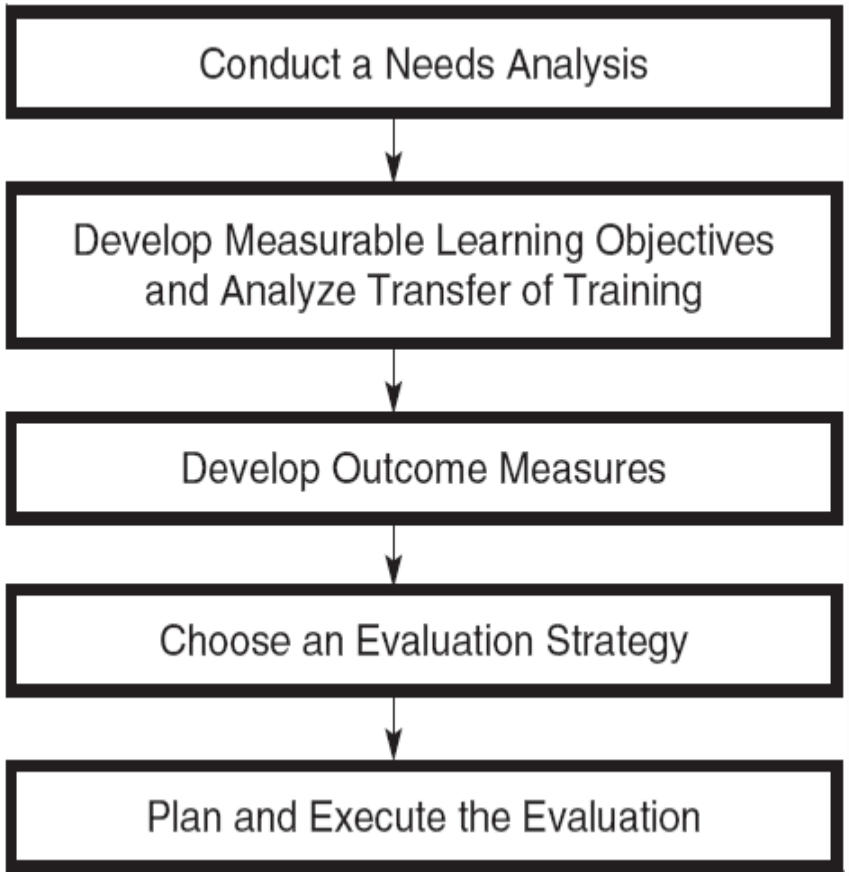
INTRODUCTION

A training program should be evaluated:

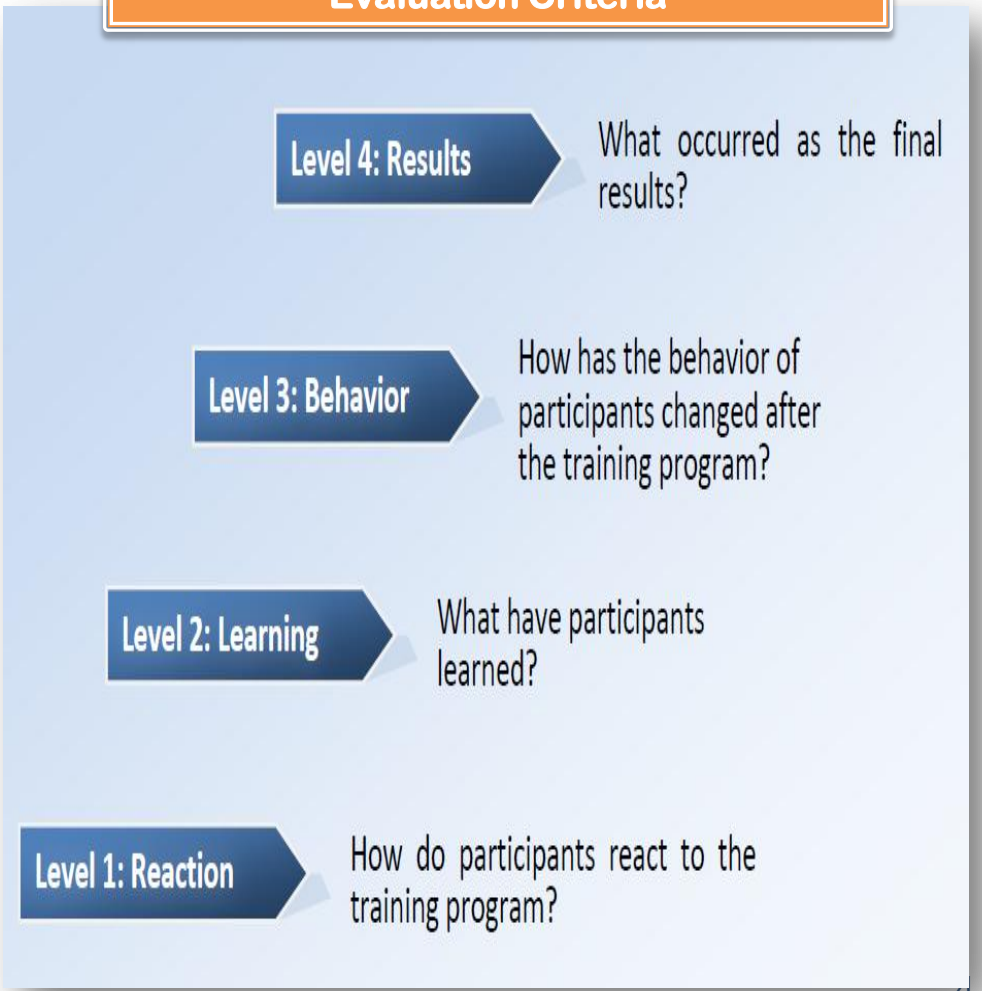
- To identify the program's strengths and weaknesses
- To assess whether content, organisation, and administration of the program contribute to learning and the use of training content on the job
- To identify which participants benefited most or least from the program
- To gather data to assist in marketing training programs
- To determine the financial benefits and costs of the program
- To compare the costs and benefits of:
  - training versus non-training investments
  - different training programs to choose the best program

INTRODUCTION

The Evaluation Process



Kirkpatrick's Four-Level Framework of Evaluation Criteria



RESEARCH QUESTIONS

Training and development is becoming an increasingly important function in human resource management. In statistical organisation, staff's training is one of the main pillars of ensuring higher quality statistics product. To achieve this, ILSM is responsible to produce knowledgeable staff in the field of statistics.

As an institute that operated less than 5 years, the challenging task is to focus on both academic and administration function. Steps must be taken to ensure its training program effective to the staff.

The research questions of this study are mainly to answer what is the satisfaction level of the participant in the training programs perceived by the participants and also to what extend was its as perceived by the participant's supervisor?

OBJECTIVE OF THE STUDY

1. To determine the satisfaction level of participants in the training program organised by the School of Methodology, Research and Quality (MPK)

2. To evaluate the effectiveness of the training program as perceived by the participants

3. To evaluate the effectiveness of the training program as perceived by the participant's supervisor

LITERATURE REVIEW

- Statistical Training- Article

Enrico Giovannini, UNECE (2013) - Human resources are the most important asset of statistical offices. Appropriate and skilled human resources are essential to ensure the production of high quality statistics and to implement more efficient and effective production processes based on new technologies. Proactive human resources management is essential to achieve the above mentioned change and to allow statistical offices to meet the challenges today and in future.

Riikka Mäkinen, Statistics Finland (2013) - Statistical work and professionalism have many aspects, in which you can only become skilled by means of on-the-job learning or specific training provided by the statistics sector. For this reason, personnel training is of key importance to statistical institutes. Professional skills in statistical work include know how associated with producing statistics (for example methodology), knowledge of the phenomena on which statistics are compiled, as well as competence relevant to needs for and presentation of statistical information. These aspects comprise the central learning objects of the Training Programme in Statistical Skills.

LITERATURE REVIEW

- Statistical Training- Article

Anne Kofoed, Marius Suciu and Marcus Zwick, Eurostat (2013) - Statistical literacy is one of the main topics for National Statistical Institutes (NSI) around the world. Education and advanced training for staff members has played a prominent role within the statistical offices and, in the last decades, statistical training has become more and more relevant, reaching even beyond NSI offices.

Josefine Oberhausen, Eurostat (2007) - Users of official statistics become increasingly demanding by putting pressure on official statistics to provide high quality data and related services. There is a need to define the profile of an "international official statistician". In addition, it seems increasingly important to establish a closer link between statistical education at universities and the working areas of official statistics.

LITERATURE REVIEW

- Training Effectiveness - Journal

Neeraj S. Borate, Gopalkrishna and Sanjay L.Borate (2014) – Training evaluation is the systematic collection of descriptive as well as judgemental information necessary to make effective training decisions related to the selection, adoption, value and modification of various intructional activities involved in training.

Siti Fardaniah Abdul Aziz (2013) - The effectiveness of training is not consistent if trainees show high training transfer or individual performance, but low learning or learning performance.

Dr. Vimala Sanjeevkumar (2011) - Training not only improves the skills of workers, but also increases awareness of the value of their own employees to have a better understanding of the objectives. Training also adapt to market changes, competitive advantage.

LITERATURE REVIEW

- Training Effectiveness - Publication

Donald L. Kirkpatrick introduced a four-step approach to training evaluation in 1959 (Shelton & Alliger, 1993). He describes his approach in a chapter titled *'Evaluation' in the* three editions of the *Training and Development Handbook; (1987, 1976, 1967). In these* chapters, Kirkpatrick states, 'nearly every one would agree that a definition of evaluation would be *the determination of the effectiveness of a training programme' (1987, p.302). His* four steps have become commonly known in the training field as: Level One, Level Two, Level Three, and Level Four Evaluation.

METHODOLOGY

The Training Program

The training program organised by School of Methodology, Research and Quality (MPK), ILSM during the year 2012 to 2013 were studied. The training program were aimed to provide training in fundamental statistical techniques and operations, statistical frameworks and methodologies on the fields of official statistics.

Scope of the study

In this research, 39 training programs (N=789) were analysed to determined the level of satisfaction and effectiveness of the training perceived by the participant. While 33 training programs (N=575) were analysed to evaluate the effectiveness of the training perceived by the participant's supervisor.

METHODOLOGY

Data Collection

Two types of evaluation forms using 10-point Likert Scale were used to collect information stated as below:

1. Training Effective Evaluation Form which focusing on this aspects:

    a. **Objective Achievement**
    b. **Level of Knowledge and Skills Aquired**
    c. **Course Content**
    d. **Training Techniques**
    e. **Managerial**
    f. **Course Benefit**
    g. **Knowledge and Skills Aquired Before and After Course**

METHODOLOGY

Data Collection (cont.)

2. Supervisory Evaluation Form which focusing on three aspects:

   a. Work outcome
   Quantity, Quality, Effectiveness and Timeliness

   b. Self quality
   Leadership, discipline, commitment, proactive and innovative, corporation and communication effectiveness

   c. Knowledge and skills
   Knowledge and skills in the field of work, policy implementation, administrative rules and regulations

METHODOLOGY

Data Analysis

A descriptive statistics were to describe the profile of the study area. The interpretation of the score for the aspect of training effectiveness is as below:

Score	Criteria	Training Effectiveness Index
1.0 – 4.9	Less satisfy	1
5.0 – 7.9	Satisfy	2
8.0 – 10.0	Good	3

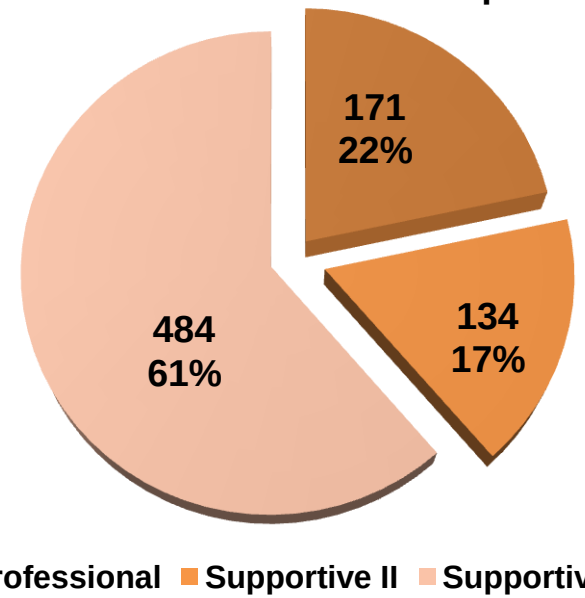
The Chi-Square test were conducted to determine there is an association between training effectiveness with the state group of the study. While a Paired Sample T-Test were used to compare the means of the three aspects of the training effectiveness perceived by participant's supervisor.

RESULTS

Descriptive Statistics

Evaluation by participants

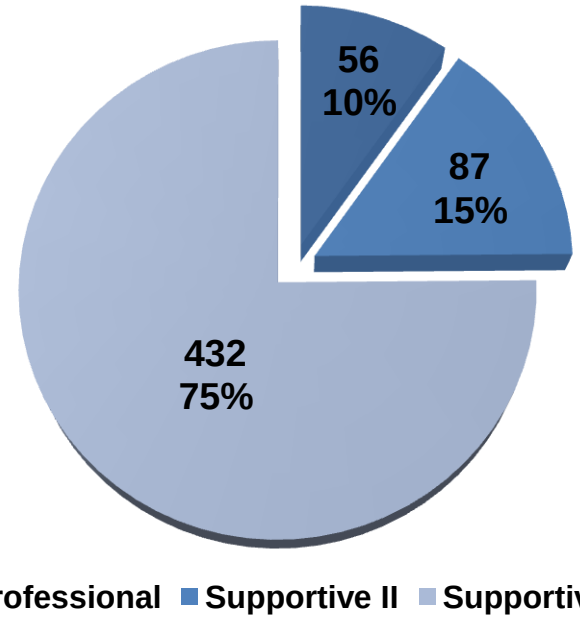
Chart 1: Number of Participants



The distribution of the participant was higher for supportive I with a total of 484 participants (61%).

Evaluation by participant's supervisor

Chart 2: Number of Participants



About 75% of supportive I with a total of 432 participants have been evaluated

RESULTS

Descriptive Statistics – Evaluation by participants

80.5%

Most of the participant rated that the training programs are good.

Table 1: Statistics

Statistics	Value
N	789
Mean	2.80
Median	3.00
Mode	3
Std. Deviation	0.397

Table 2: Overall level of satisfaction

	Frequency	Percent	Valid Percent	Cumulative Percent
Satisfy	154	19.5	19.5	19.5
Good	**635**	**80.5**	**80.5**	**100.0**
Total	789	100.0	100.0	

Table 3: Comparison of ratings between designation of the participants

Designation	Mean	Median	Std. Deviation
Professional	2.91	3.00	0.284
Supportive II	2.78	3.00	0.413
Supportive I	2.77	3.00	0.420
Total	2.80	3.00	0.397

- On the average, Professional has a higher mean overall rating (2.91) compared to Supportive II (2.78) and Supportive I (2.77)
- There is a higher variability (s = 0.420) in the ratings for Supportive I compared with the others
- Overall, the majority of participants in the group are satisfied with the training programs that they participate (median score=3.0=good)

RESULTS

Q1: Is the satisfaction level of participants in the training program vary within designation?

Table 4: Distribution of Participants by Designation and Level of Satisfaction

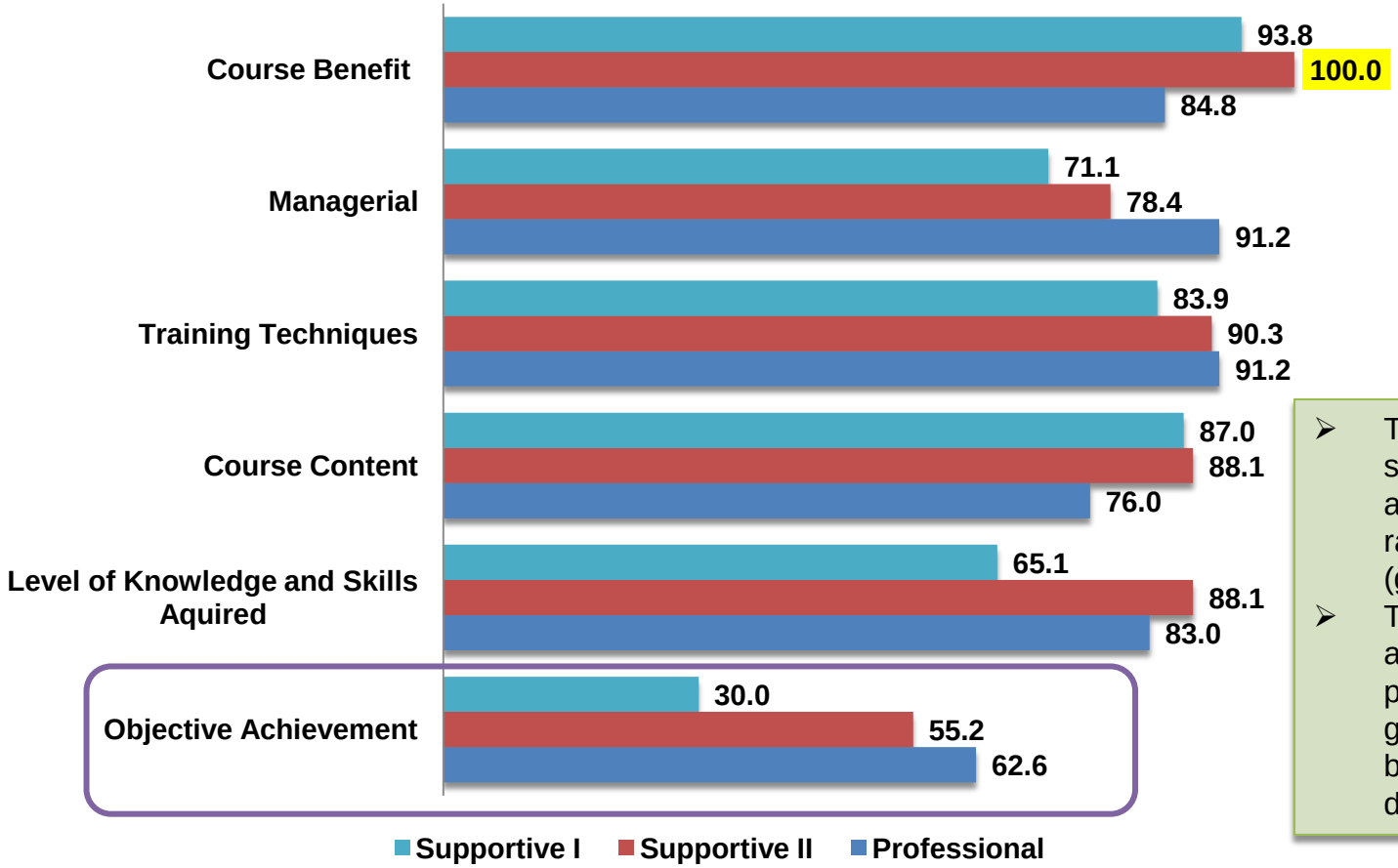
			Level of Satisfaction		
			Satisfy	Good	Total
Designation	**Professional**	Count	15	156	**171**
		% within Designation	8.8%	**91.2%**	**100.0%**
		% of Total	1.9%	19.8%	**21.7%**
	Supportive II	Count	29	105	**134**
		% within Designation	21.6%	78.4%	**100.0%**
		% of Total	3.7%	13.3%	**17.0%**
	Supportive I	Count	110	374	**484**
		% within Designation	22.7%	77.3%	**100.0%**
		% of Total	13.9%	47.4%	**61.3%**
Total		Count	**154**	**635**	**789**
		% within Designation	**19.5%**	**80.5%**	**100.0%**
		% of Total	**19.5%**	**80.5%**	**100.0%**

- Majority of the professional staff (**91.2%**) rated the training program as good as compared to both supportive staff are at **78%**
- This indicate that the satisfaction level of the participants vary within the designation group

RESULTS

Q2: What aspects are the most satisfy the participant?

Chart 3: Distribution of Participants by Component of Training



- The supportive II staff stated that all of the course are benefit to them as they rated the higher score (good).
- This objective achievement aspects indicate lower percentage rated in the group, as this result should be further investigate in depth analysis

RESULTS

Q3: Does the satisfaction level of participants is differ for the group?

Table 5: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.129[a]	2	**.000**
Likelihood Ratio	18.536	2	.000
Linear-by-Linear Association	13.770	1	.000
N of Valid Cases	789		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 26.15.

There is insufficient evidence to indicate that the satisfaction level of participants distribution is different for the three groups

RESULTS

Q4: Does the training program affect the work outcome, self quality, knowledge and skills?

Table 6: Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Work Outcome Before	7.000	575	1.0763	.0449
	Work Outcome After	8.278	575	.7195	.0300
Pair 2	Self Quality Before	7.292	575	.9321	.0389
	Self Quality After	8.368	575	.6590	.0275
Pair 3	Knowledge and Skills Before	7.034	575	1.0983	.0458
	Knowledge and Skills After	8.312	575	.6943	.0290

Table 8: Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Work Outcome Before - Work Outcome After	-1.2781	.7919	.0330	-1.3430	-1.2133	-38.702	574	**.000**
Pair 2	Self Quality Before - Self Quality After	-1.0757	.6642	.0277	-1.1301	-1.0213	-38.834	574	**.000**
Pair 3	Knowledge and Skills Before - Knowledge and Skills After	-1.2780	.8066	.0336	-1.3440	-1.2119	-37.990	574	**.000**

The results of the pair t-test indicated a significant p value $p > 0.05$ (0.000), therefore it can be concluded that there is a change in the three aspects has significant influence on training effectiveness perceived by the participant's supervisor

CONCLUSION & RECOMMENDATION

- The score on the satisfaction level of participants indicate that the training program were effective.
- Although the satisfaction level were high as perceived by the participants, there is still a lot of evaluating task to be done in order to identify the program's strengths and weaknesses.
- The challenging in this study was to gather a profiling of the participants, it is highly recommended that the profile of the participants should be kept in a database.
- This study revealed that our evaluation just fulfill level one of the Kirkpatrick Four-Level Framework of Evaluation Criteria.

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"Absence of understanding does not warrant absence of existence "
- Ibn Sina

THANK YOU