

**ASSESSING THE EFFECTIVENESS OF TRAINING PROGRAMS ON CAPACITY
BUILDING OF OFFICIALS IN GOVERNMENT ORGANIZATIONS IN INDIA.**

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Abstract

Capacity building through training is a critical mechanism for improving employee competencies and enhancing organizational effectiveness, particularly in government organizations where skill gaps significantly influence service delivery. This study examines the impact of competency-based and non-competency-based training programs on the capacity development of government officials. Primary data were collected from 413 officials through a structured questionnaire using a five-point Likert scale. Factor analysis was employed to extract the competency and non-competency training factors, then reliability testing was performed through Cronbach's alpha. Then regression was applied to evaluate the relationship between training approaches and capacity building. The findings reveal that competency-based training programs significantly enhance employee capacity development, while non-competency-based training does not have a substantial effect.

Key words: Capacity building, competency, performance evaluation, skill development, organization goals

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1. Introduction

In the quest of enhancing people's performance and effectiveness, capacity development refers to the process of enhancing people's talents, knowledge, and skills. Capacity building is referred as the development of knowledge, attitude, and skills of the workforce for enhancing the abilities to achieve the short-term and long-term organizational goals and also the excel the personal performance.(Groot & van der Molen, 2000; Millar & Doherty, 2016). The capacity building broadly focuses on improvements of the employees and facilitate development of desirable skills and attitude, that help them to accomplish the assigned tasks and goals more effectively and efficiently (Yamoah & Maiyo, 2013). According to a study on external factors and capacity building by (Ahmad, Farrukh, & Nazir, 2015), the capacity building has a positive impact on the employees' performance. In general, capacity building improves effectiveness at the organizational level. The capacity development training programmes are essential for closing skill gaps in a number of industries, including business, healthcare, and education

(Annan-Prah & Andoh, 2023). These gaps develop when there is a discrepancy between the skills and abilities that people or organisations now possess and those that are necessary to satisfy the changing needs of a given field. Further, it is all the more important to evaluate the efficacy of capacity building training programmes to assess whether the programs have expected impacts on employees' performance.

A study by Elnaga and Imran (2013) is of the view that managers play an integral role to build up employees' capacities and thereby developing and creating an conducive work environment. The role of managers is to closely involve in designing and developing appropriate contents for different types of capacity building training programs for enhancing employees' learning, aptitudes, and capacities enabling them to contribute significantly and thus helping an organization for the accomplishment of organizational goals. These efforts not only enhance the employees' performance but also develops a better organizational image (Fang et al., 2010). The manager support is in terms of making required provisions for favourable and reasonable working conditions of employment, while capacity building focuses on providing sustainable opportunities to employees, keeping in view their natural talents (Ryklief et al., 2022). Therefore, the capacity building can be more instrumental in enhancing the socioeconomic benefits for the employees as well as for the industry (Hu, Rao, & Sun, 2006).

Programmes for building capacity are essential for filling skill gaps and ensuring that people and organisations across the range of segments perform efficiently. The very objective purpose of capacity building programs is to improve participants' talents, knowledge, and skills so they can contribute effectively for the growth of the organization through bringing attitudinal and professional talents in the desired domains. There is also a need to evaluate these training programs in order to determine how well they meet out the competency gaps and maximise their impact. This introduction offers an overview of the need and demand for evaluation of capacity building training programmes in closing competency gaps.

2. Literature Review

Training and educational opportunities range from one-time workshops to regularly scheduled webinars to year-long institutional courses (Connolly, 2007). Workshops and trainings are popular capacity building activities. Online trainings can increase accessibility by allowing people to participate from anywhere. The acquisition of skills by training can contribute to learning culture. Best practices in implementing training include having a set of goals, also using exercises, case studies etc. create interactive format (Connolly, 2007; United Nations Environment Programme (UNEP), 2006). Training activities like workshops are more effective when they are embedded in long-term programs rather than one-off events, when they use other capacity building approaches in parallel (UNEP, 2006). Capacity building takes time because people and systems evolve gradually (Robertson, 2005; Connolly, 2007). It is rarely a one-time event, rather it is continuous and iterative to allow for time to absorb, implement and learn from capacity building experiences (GEO, 2013; GEO, 2015a; Jacobs, 2001; Connolly, 2007; Chandler and Scott Kennedy, 2015; Whittle et. al., 2012). Long-term capacity building has better impact including increased trust, stronger networks (GEO, 2015a; Connolly, 2007).

Bloom, N. and Van Reenen, J. (2007): Good leadership is essential for accomplishing an organization's goals, fostering a positive workplace culture and employee engagement, and avoiding harm to the organization's reputation. Good leadership behaviors (*e.g.*, communicating key performance indicators, setting goals, monitoring performance, soliciting ideas from direct reports, and listening to needs and concerns of direct reports) are associated with positive results such as increased productivity, profitability, job satisfaction, motivation, and reduced employee turnover. Goldstein, I.L. (1980): Training can be defined as the "acquisition of skills, concepts, or attitudes that result in improved performance in an on-the-job environment". Shanmugathasan, & Thirunavukkarasu (2024) revealed significant relationship between training and development and self-development of employees.

Neoe (2010) examined the effectiveness of training and development activities, and concluded that effectiveness can be assessed on the basis of (1) reaction outcomes (2) affective outcomes (3) learning or cognitive outcomes (4) behavior and skill-based outcomes (5) results (6) return on investment. According to U.S. Office of Personnel Management, *Senior Executive Service Survey 2011*, Many career senior executives (65 percent) attended a short-term training program and many (63 percent) characterize the training as either very or mostly effective for their continued development. Collins and Holton (2004) conducted research on leadership development programs indicates a very broad range of effectiveness from programs that failed to those that are highly effective. In this regard Kharub et al. (2025) found that "smart working", "factual and theoretical knowledge", "empathy at work", "understanding of specific knowledge", and "engagement ideas and activities" are the main dimensions driving employees' competency".

The objective of this study is to analyse the impact of competency and non-competency based training on capacity building of government officials. Also to examine the difference in the competency and non-competency based training on capacity building of government officials.

3. Data and Methodology

The primary data is gathered by means of a questionnaire that is self-administered and is delivered to officials of government organizations. 450 replies in their whole were gathered from the employees. The investigation is based on a total of 413 responses (this number is after data cleaning). The practise of deleting responses in which there was no variation in the answers provided by the respondents is known as "data cleansing".

The questionnaire consisted of different assertions on training, capacity building and competencies of employees, each of which could be ranked on a Likert scale from 1 to 5.

Data from Other Sources

The secondary data and information would be collected from various scholars' and researchers' published books, various research work done on similar or related field is extensively analysed for the study.

Table 3.1 “Technical details of research”

Location	India
Sample size	450
Sample size after data cleaning	413
Level of confidence	95%
Year of collection Period	2021

Method of Data analysis**Table 3.2 “Objective wise research tools summary”**

Objective/s	Tools
To assess the components of training programs in government organizations.	Factor Analysis
To assess the components of capacity development program in government organizations	Factor Analysis
To analyse the impact of competency and non-competency based training on capacity building of government officials.	Multivariate Regression Analysis

Factor Analysis

There are two approaches to conducting factor analysis, which is usually referred to as a dimension reduction technique: exploratory factor analysis (EFA) and confirmatory factor analysis (Bajpai, 2011). In this EFA is performed because latent factors are extracted from responses.

Multivariate Regression

The term "regression analysis" refers to a group of statistical methods that aim to estimate the nature of the relationships that exist between a dependent variable and one or more independent variables. It is possible to utilise it to "assess the strength of a link between variables and to forecast how they will interact with one another in the future."

The analysis is essentially the same as it would be for a straightforward linear model, with the difference that a large number of independent variables are being used in the model. The mathematical representation of multiple linear regression is as follows:

$$\text{“}Y = a + bX_1 + cX_2 + dX_3 + \dots + X_n + \epsilon\text{”} \dots \dots \dots (1)$$

Here $X_1, X_2, \dots, X_n$ are independent variables

Y- dependent variable

ϵ - Residual

4. Data Analysis

KMO Bartlett Test

You can find out how much of the variation in your variables can be attributed to "underlying factors" by calculating a statistic called the "Kaiser-Meyer-Olkin Measure of Sampling Adequacy." If the value is larger than .5, factor analysis can be performed on the data. Table 4.1 KMO test value of .819 indicates that factor analysis can be performed because it is more than .5 (Bajpai, 2011.).

The Bartlett test of sphericity determines whether or not the variables are unrelated by testing whether or not the "correlation matrix is an identity matrix." This indicates that the variables are "unsuitable for structure detection." Even with a modest degree of significance, factor analysis can be a helpful tool for analysing the data (less than 0.05). The p value is smaller than .05 hence the data can be used in a factor analysis. (Bajpai, 2011.).

Any factors with an eigen value greater than 1 will be taken into account in the solution's final form (Bajpai, 2011). Three of the components had eigen values greater than one, and these components explain around 52.93% percent of the variation in the original variables, as shown in Table 4.2.

KMO and Bartlett's Test

Table 4.1

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.818
Bartlett's Test of Approx. Chi-Square	1197.442
Sphericity	Df
	66
	Sig.
	.000

Total Variance Explained

Table 4.2

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.571	29.759	29.759	3.571	29.759	29.759
2	1.672	13.933	43.691	1.672	13.933	43.691
3	1.109	9.239	52.930	1.109	9.239	52.930

4	.990	8.252	61.182			
5	.846	7.053	68.235			
6	.806	6.718	74.954			
7	.729	6.076	81.030			
8	.590	4.917	85.947			
9	.548	4.566	90.512			
10	.495	4.128	94.641			
11	.369	3.076	97.717			
12	.274	2.283	100.000			

Table 4.3 Exploratory factor analysis of Training Scale-

	Factor1	Factor2	Factor3
T12	.829		
T11	.819		
T13	.809		
T10	.716		
T8	.616		
T9	.564		
T7		.680	
T6		.524	
T4		.520	
T3		.348	
T2			.785
T1			.749

Validity analysis

Validity analysis tells us about at what degree the results measure what they are supposed to measure. It can be assessed by checking (Middleton, 2019) (Taherdoost, 2018b). Exploratory factor analysis (EFA) is a statistical method used to measure the relationship between measured variables (Kline, 2013). EFA is exploratory in nature (Kline, 2013) we don't know the latent variables, so the steps are repeated until we arrive at a lower number of factors.

According to factor loading matrix <0.39 poor, 0.4-0.49 Fair, 0.5-0.59 good, 0.6-0.69 very good, 0.7+ excellent. Above table (table 4.4) shows that T9, T8 T11, T12, T13, T10 are loaded in factor 1, T7, T6,T4, T3 poor loaded in factor 2. T2 and T1 are loaded in factor 3 .

Table 4.4

Training Factor/s Name	Source
Knowledge Factors (Competency based training)	Park & Kim (2018)
Behavioral Factors (Non – Competency based training)	Lee, Song & Hong . (2019)
Emotional factors (Non – Competency based training)	Lee, Song & Hong . (2019)

Objective 2

To assess the components of capacity development program in government organizations

Capacity Development

KMO Bartlett Test

You can find out how much of the variation in your variables can be attributed to "underlying factors" by calculating a statistic called the "Kaiser-Meyer-Olkin Measure of Sampling Adequacy." If the value is larger than .5, factor analysis can be performed on the data. Table 4.5 KMO test value of .915 indicates that factor analysis can be performed because it is more than .5 (Bajpai, 2011).

The Bartlett test of sphericity determines whether or not the variables are unrelated by testing whether or not the "correlation matrix is an identity matrix." This indicates that the variables are "unsuitable for structure detection." Even with a modest degree of significance, factor analysis can be a helpful tool for analysing the data (less than 0.05). The p value is smaller than .05 hence the data can be used in a factor analysis. (Bajpai, 2011).

The first answer's variation is shown in the far left column of the table. Any factors with an eigen value greater than 1 will be taken into account in the solution's final form (Bajpai, 2011). Three of the components had eigen values greater than one, and these components explain around 66.25% percent of the variation in the original variables, as shown in Table 4.6.

KMO and Bartlett's Test

Table 4.5

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.915
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Bartlett's Test of Approx. Chi-Square	1820.166
Sphericity	
Df	21
Sig.	.000

Total Variance Explained

Table 4.6

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.638	66.257	66.257	4.638	66.257	66.257
2	.645	9.221	75.478			
3	.545	7.785	83.263			
4	.336	4.797	88.060			
5	.310	4.434	92.494			
6	.285	4.065	96.559			
7	.241	3.441	100.000			

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Exploratory factor analysis of Capacity Development Scale

Table 4.7

	Factor
CD5	.871
CD1	.859
CD3	.850
CD7	.815
CD6	.811
CD2	.786
CD4	.692

Above table shows that CD5, CD1, CD3, CD7, CD6, CD2 and CD4 all items are excellent loaded. From the results all items of capacity development are valid

Reliability Analysis**Table 4.8**

Factors	Cron Bach alpha	No. of items
Training		
Knowledge Factors (Competency based training)	.865	6
Behavioral Factors (Non – Competency based training)	.727	4
Emotional factors (Non – Competency based training)	.835	2
Capacity Building		
Factor	.809	1

Cronbach's alpha is the statistic that is utilised in this determination. In order to ascertain whether or not "multiple-question tests" may be relied upon, Cronbach's alpha tests are carried out. The results of surveys based on a Likert scale can be trusted. These questions address "latent factors," or hidden or unobservable characteristics. The reliability of the scale is determined by whether or not the value is greater than .6 (Bajpai, 2011).

There is no indication that there is a problem with the reliability of the scale based on the fact that every value in table 4.7 is more than .6. When applied to the construct, the scale provides reliable results.

Objectives 3

To analyse the impact of competency and non-competency based training on capacity building of government officials.

Research hypothesis

Null hypothesis- Non-competency based training does not help in capacity building of officers

Null hypothesis- Competency based training does not help in capacity building of the officers

4.3 Multivariate Regression**Descriptive Statistic****Table 4.9**

	Mean	Std. Deviation	N
Competency based training	69.73	14.526	413
Non competency based training	22.77	4.176	413
Capacity Development	24.88	6.206	413

Note- The researcher has taken mean of the non competency based factors (Emotional and Behavioral factors)

Correlations

Table 4.10

		Competency Training	Capacity Development
Pearson Correlation	Competency based training	1.000	.767
	Non competency based training	.244	.530
	Capacity Development	.767	1.000
Sig. (1-tailed)	Competency based training	.	.000
	Non competency based training	.123	.000
	Capacity Development	.000	.
N	Competency based training	413	413
	Non competency based training	413	413
	Capacity Development	413	413

Table 4.11

Model	R	R Square	Adjusted R Square
1	.817 ^a	.667	.666

ANOVA^a

Table 4.12

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	58010.997	2	29005.498	411.232	.000 ^b
	Residual	28918.630	410	70.533		
	Total	86929.627	412			

The regression model is fit for estimation as the p value is less than .05.

a. Dependent Variable: Capacity Building

b. Predictors: (Constant), Competency based training , non- competence based training

Table 4.13

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	61.422	4.074		15.077	.000***
	Non-Competency based training	1.150	.117	.331	9.839	.503
	Competency based training	1.386	.079	.592	17.623	.000***

A multiple regression was calculated to predict employee competencies from Training and capacity development. Above table shows the impact of training and capacity development on

competencies. The R^2 value of .67 revealed that the predictors explained 67% variance in the outcome variable with $F(2, 410) = 411.232, p < .001$. The findings revealed that the competency based training have significant positive effect on the capacity development of the government officials whereas there is no effect of non competence based training on the capacity development of government officials (see table 4.11 and 4.13).

Table 4.14**Decision on Hypothesis-**

Null Hypothesis	Decision	Sign of relationship
Non-competency based training does not help in capacity building of officers	Accept null hypothesis	Non-competency based training does not help in capacity building of officers
Competency based training does not help in capacity building of the officers	Reject null hypothesis	Positive effect of Competency based training in capacity building of the officers

Interpretation

While doing an analysis of the information obtained through the use of self-administered surveys, frequency tables are the tools of choice. The information is laid out in tables using percentages as the descriptor. After conducting the factor analysis, the next step is to investigate the factors that may have an effect on competency of employees. The study started off with a sample size of 450 participants, however it was later reduced to 413 participants. (After cleaning up the data) The outcomes of the KMO and Bartlett tests suggest that there is sufficient data in the sample for a factor analysis to be conducted. Following a check for communality, seven assertions were eliminated because the values associated with them were lower than 0.5. During the process of determining the dependability of the data, Crohn-bach alpha was used, and the results showed that the items of each component were precisely associated with that factor.

The competencies are regressed on training and capacity building program factors. Quality training is an investment in the human resources of a business that yields dividends both immediately and over the long term. Nevertheless, investment alone is not enough; in order for businesses to maximise the returns on their capital expenditures, they need to improve the efficiency with which they administer their training programmes. According to the findings of the survey, businesses should make it a routine practise to provide opportunities for staff education and advancement. Training must encompass more than just the acquisition of fundamental abilities. In other words, in order for enterprises to use training as a means of gaining a competitive edge, they need regard training in a wide sense as a tool to develop intellectual capital. The development of capabilities includes training, but it is not the only component. Typically, its primary goal is to provide people with the abilities necessary to solve

particular challenges. The term "capacity development" refers to a wide variety of endeavours with the goal of enhancing people's and organizations' capabilities.

Conclusion

According to the findings of the study, non-competency based training doesn't have any significant effect on the capacity development of the government officials whereas the competency based training programs have significant positive effect on the capacity building of the employees. Newman, Thanacoody and Hui (2011) also discovered that non competency based training has no effect on the capacity development of the employees. This may be due to the "involuntary nature of employee training; the limited career development opportunities" to the employees.

On the contrary Hanaysha (2016) concluded that competency based training has a considerable positive effect on capacity development and organizational commitment. The study was based on middle level managers. The study further stated that the management in the higher education sector to strengthen organizational "commitment among their employees by focusing on employee empowerment, training, and teamwork". In this regard Dulnuan (2025) also highlighted that training and resource-related factors are key determinants of employees' competency in government organizations.

Further, Wassem et al.(2019) studied the effects of capacity development programmes on the senior employees' competences and they came to the conclusion that such programmes had a good impact on the employees' commitment levels as well as their levels of competency.

Therefore, the government organizations should place a greater emphasis on the competency based training programme for the officials and this will in turn raise the productivity, working efficiency and quality or work performance of the government organizations.

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