

Behavior Modification Interventions and Training Effectiveness in Higher Education's Training Institutes

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Article History:	ABSTRACT
Received: 24 Nov, 2022	Purpose: The purpose of this study is look into the role of behavior modification interventions (training needs assessment, employee's commitment, employee learning, employee's motivation—as independent variables—and training framing as moderator, on training effectiveness) in the public sector training institutes of higher education of Khyber Pakhtunkhwa, Pakistan.
Revised: 05 Dec, 2022	Design and Methodology: A total of 323 respondents of higher education departments working in BPS-17 and above who have completed training programs in these public sector organizations has been taken as sample. For data analysis, SPSS (for descriptive statistics) and structural equation modeling (for confirmatory factor analyses for both the measurement model as well as structural models) have been employed.
Accepted: 14 Dec, 2022	Findings: Results showed that TNA, employee learning, and commitment are positively associated with training effectiveness, while the empirical did not support the theoretical association of employees' motivation with training effectiveness. Similarly, training framing was found a good moderator between the association of TNA, employee learning, and employee commitment. However, training framing did not find to play the moderating role between employee motivation and training effectiveness.
	Implications: The results are expected to be helpful for practitioners, policymakers, administrators, and decision-makers by taking steps to enhance training transfer and effectiveness. A longitudinal study with qualitative data collection may unfold some aspects of the association.
	Keywords: Behavior modification, intervention, training, education

1. Introduction

Significant changes in formal education and professional training are occurring due to environmental and organizational changes. The speed of technical development, the growing amount of content, knowledge needed for operation, the lengthening of the product life cycle, and the constantly evolving production methods are some reasons that seem to usher in a new reality

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for companies. One of the many implications of these market-driven demands is that workers must continue learning (Ferreira & Abbad, 2013). Education plays a vital role in the development and prosperity of a country (Kujur, Vinayagam, Awasthi, & Murthy, 2020). A skilled workforce is the backbone of developed and developing economies, and higher education provides the required skilled workforce to almost every sector of the economy. A skilled workforce refers to a trained, educated, and/or practically experienced sufficient to perform complex mental or physical tasks on the job (Liang & Lu, 2019). For the fulfilment of demand, a qualified workforce potential must be cultivated. Training is the leading source for matching market requirements to acquire new work-related knowledge, skills, and attitude (Arshad, Yusof, Mahmood, Ahmed, & Akhtar, 2015). Training helps organizations and employees simultaneously, and it systematically diagnoses the differences in the available and required competencies; similarly, it helps the employee acquire knowledge, skill, and attitude for current and future requirements (Rasool, Bashir, Rauf-i-Azam, & Nasir, 2015).

A skilled workforce can only be developed after having professionally trained teachers. The higher education department of Khyber Pakhtunkhwa has a professional training academy for the training and development of its teaching staff. The government spends a handsome amount of money on these training and development programs. Generally, these type of training programs positively affects students' enrolment (Pérez-Jorge, Ariño-Mateo, González-Contreras, & Rodríguez-Jiménez, 2021). These training and development programs comprise a variety of mandatory and refresher courses. The question is whether they follow what they are supposed to pursue professionally. Either they are skipping some practical steps in the training and development program, and at what cost?

Service sector organizations' survival mainly depends on training and development programs, as upgraded skills are of primary importance in the current competitive environment (Chowdhury, Alam, & Khan, 2021). Skills enhancement can only be possible after designing an effective training and development program. An effective training and development program will include but is not limited to the following steps, i.e., conducting needs assessments, employees' readiness, learning environment, ensuring training transfer, developing an evaluation plan, selecting training methods, and monitoring and evaluating the program (Noe, 2020). Needs assessment is the cornerstone of the whole process and plays an integral role in training effectiveness (Gil, Mataveli, Garcia-Alcaraz, 2022; Mamun, 2021a). Training needs assessment (TNA) generally identifies gaps in employees' current knowledge, skills, and attitudes that can adversely affect their performance at work (Noe, 2020). Training program without proper training needs assessment will be second to the wastage of valuable resources of the organization.

Marketable knowledge, skills, and attitudes were more rapidly changing than an organization's plan to develop its human resource and failed to match these market demands. The competition is also changing its shape and features, and organizational survival is shifting from technology to knowledge capital (Bulińska-Stangrecka, 2021). Now it is this knowledge capital

that gave shape to the nature and ways of market competition. In addition to adopting new technology, organizations need to focus more on their human resources to maintain a competitive advantage.

It is important to reveal the dynamic role of training needs assessment in the effectiveness of training programs and the efficient utilization of organizational resources. The underpinning research will also cover commitment, learning, motivation, training framing/awareness, and training effectiveness to have a complete picture of the phenomena of behavior modification. The model of the study is presented in Figure 1.

The current study is expected to contribute to the exiting literature. Foremost, the study employs the sample from public sector organizations where government has been investing on a larger scale, thereby getting an insight of on-the-job-training and development program is extremely critical. Besides, the findings are expected to help administrator and practitioner of the government sector organizations in the effective utilization the available resources and how training evaluation contribute in the betterment of the training and development program.

2. Literature Review

Training is pivotal in modifying employees' behavior and in enhancing employees' marketable knowledge, skill and attitude. Marketable KSA is the one that provides a strong base for competitive advantage over its competitors (Azmawani, Siew, Murali, & Florence, 2013). This marketable knowledge, skill, and attitude help employees in improving not only their performance but the organization as well. Does a worthy question arise whether every training produces good results? The answer is, unfortunately, every training results are not always produced positive results. Multiple factors play a role in training and development programs. Sometimes training programs fail to produce the required results as practitioners sometimes recommend training for non-training issues or design training content on their imaginary gaps. However, no one can oversight the role of training needs assessment and training design. Training needs assessment not only chalks out gaps in employees' marketable knowledge, skill and attitude but may also help to identify training and non-training solutions.

2.1 Training Needs Assessment (TNA)

Knowledge gaps, outdated skills, low self-efficacy, and negative attitudes and behavior are some hurdles in employees' performance, and an organization needs to identify reasons for poor performance to bridge the gaps in existing KSA (Mamun, 2021b; Weegar & Romano, 2019). As a result, assessment at the organizational, personal, and task levels leads to training and non-training solutions for bridging the existing gaps (Mamun, 2021a). Other benefits of TNA include but are not limited to 1) setting a direction for training, 2) identifying and prioritizing needs, 3) finalization the way to bridge the identified gaps/needs, 4) showcasing the importance of

individual growth and success, 5) justifying the training program with cost-benefit analysis (Lenartz, 2003).

Ferreira and Abbad (2013) According to work, organizations lack consensus over the TNA method(s), fail to address contextual aspects proactively and lack theoretical definitions. The training program's overall direction is based on TNA's results (Bresnahan & Johnson, 2013). TNA's products are training objectives, content identification and development, trainer and trainees identification & selection, and evaluation method (Khan & Masrek, 2017; Mayombe, 2021).

The available literature identifies the following methods for TNA in a process-oriented approach where gaps arise from the functional area of different departments, while a business-oriented approach relies on the business plan for gaps; similarly, in the traditional approach, trainer intuition is based (Vishwakarma & Tyagi, 2017).

TNA is closely associated with training effectiveness (Aleem, Ali, Naz, & Baig, 2021; Khan & Masrek, 2017) as it provides the base point for setting training objectives, contents to be taught, trainees, and trainer selection, and it also provides very useful information for evaluating existing and improving future training programs (Aleem et al., 2021). The concept is supported by the training engagement theory and incompetency training theory (Kodwani, 2017; Sitzmann & Weinhardt, 2015).

H1: TNA and training effectiveness are positively associated.

H1a: The association between TNA and training effectiveness is moderated by training framing.

2.2 Employee Commitment

An employee's intellectual, emotional, and loyal attachment to their employer and connecting their goals and achievements to the purpose of business is called commitment (Al-Sada, Al-Esmael, & Faisal, 2017; Renier (RC) Els, Helen (HW) Meyer, & Suria (S) Ellis, 2021). The association between employees and the organization strengthens through commitment (Hoppe, 2017). Due to the positive contribution of employee commitment to the growth and prosperity of individuals and organizations, it is at the top of the priority list of academics and researchers. Commitment refers to a situation where organizational and individual success and failure are directly linked; similarly, it is the connection of employees to organizational goals and objectives (Al-Sada et al., 2017; Rao, 2017). Normative, continuance, and effective are the three components of commitment (Meyer & Allen, 1997). Normative refers to the feeling of being thankful to be part of the organization. In continuance, commitment feels its own loss in case of separation from the organization. Similarly, employees link emotional attachment to organizational goals and objectives in affective commitment.

Commitment also affects employee performance in training; committed employees will produce more positive results than low-committed employees (Hoppe, 2017). Commitment also impacts the behavior of the employees. A general perception is that commitment produces better results in achieving training and organizational objectives (Sahinidis & Bouris, 2008). Training program and trainees' commitment has a reciprocal effect on each other (Denby, 2010); as training increase employees' perception of advancement, they become more committed (Latif, 2012). Training enhances employee knowledge, skills & attitude, and these essential KSAs play a very important role in achieving organizational goals and objectives; as a result, the employee feels committed (Sahinidis & Bouris, 2008). Quick learner, low absenteeism, work hard & for longer hours, less turnover, and work with more focus are the quality of highly committed employees. Employee positive perception of the organization and their level of commitment is closely related to each other (Bashir & Long, 2015). In such a situation, training framing enlarges a training program's impact, as it clarifies training objectives, offers factual data, and links training with organizational and personal development (Sahoo & Mishra, 2019). Resource-based view theory explains the undeniable role of commitment in individual as well as organizational objectives (Theriou, Aggelidis, & Theriou, 2009). Evidence from the existing literature, the underpinning study will test the following hypothesis:

- H2: Association between employee commitment and training effectiveness is positive.
 H2a: The association between employee commitment and training effectiveness is moderated by training framing.

2.3 Trainees' Motivation

Motivation is a psychological process that activates energies and directs behavior through instinctive or reflective mechanisms (Gloster et al., 2018; Kodwani & Kodwani, 2021). Similarly, it instructs people to continue or stop engaging in particular behaviors (Al-Sada et al., 2017). Motivation influences a trainee's attitude toward enhancing new abilities and applying them in the workplace; furthermore, it increases the employee's readiness to engage in the training program actively (Aziz & Ahmad, 2011; Davids, Gonzalez, Garrido, & Soto, 2014; Janos Salamon, Brian D. Blume, István Tóth-Király, Tamás Nagy, & Orosz, 2022). It is the motivation that plays its role in the transfer of the newly learned KSAs to the work setting (Sahoo & Mishra, 2019). Multiple internal and external factors, like workplace environment, performance, recognition, reward, life balance, professional challenges, and organizational system, are involved in employees' motivation (Chung-An Chen, Hsieh, & Chen, 2021; Glen, 2006; Tai, 2006). A set of behavior for acquiring new KSAs refers to the motivation to learn, which play a pivotal role in training effectiveness (Bashir & Long, 2015; Sahoo & Mishra, 2019). Trainees' abilities and capabilities are influenced by motivation, creating high self-efficacy that leads to training effectiveness

(Mielniczuk & Laguna, 2017; Park, Kang, & Kim, 2018). Training framing undeniably enhances awareness about the training objectives and outcomes for the individual and the organization. The fundamental information about the training program carries a positive perception and leads to training transfer which is one of the primary objectives of the training program. The reinforcement theory of motivation and training engagement theory help simplify the complex process of training effectiveness and motivation. The literature, as mentioned earlier, provides the basis for the following hypothesis:

- H3: The association between trainees' motivation and training effectiveness is positive.
 H3a: The association between trainees' motivation and training effectiveness is moderated by training framing.

2.4 Employee Learning

Learning refers to the cognitive mechanism of acquiring knowledge, generating meaning, and applying current experience and knowledge for answers (Beqiri & Mazreku, 2020; Boukamcha, 2015). Learning refers to a multifarious sustainable development and societal development process, not limited to attaining a level of emotions, culture, traits, motivation, creativity, attitudes, and behavior (Debora Jeske & Olson, 2022; Griffin, 2010).

In the composite business environment, individual and organizational survival rightly depends on identifying and learning market-driven knowledge skills and behavior through formal or informal means (Kyndt, Vermeire, & Cabus, 2016). Employees' encouragement for developing new skills comes from the organizational learning environment consisting of systems and subsystems which guide every employee to develop collective norms, values, and beliefs for individual and organizational growth (Palos & Stancovici, 2016; Polo, Cervai, & Kantola, 2018).

Applying the newly acquired KSAs and modified behavior to the work setting refers to training transfer (Muduli & Raval, 2018; Park et al., 2018). Linkage of work setting and content, effective learning style, and design of training transfer enhance the smooth transfer of training and increase training effectiveness (Alvelos, Ferreira, & Bates, 2015). Training framing magnifies the impact of training effectiveness by positively modifying employees' perceptions (Loomba & Karsten, 2019; Sitzmann & Weinhardt, 2015). On the bases of the literature cited above, the following hypothesis will be tested:

- H4: The association between trainees' learning and training effectiveness is positive.
 H4a: The association between trainees' learning and training effectiveness is moderated by training framing.

2.5 Training Framing

Trainees' self-efficacy and framing are directly linked; as employees become aware of the training program, training objectives, and its role in individual and organizational development, they increase employees' self-efficacy (Chen, Sok, & Sok, 2007; Loomba & Karsten, 2019). Training framing awareness is very important for the training program's success as trainees know exactly what to do in the training program (Floyd, Cullen-Lester, Lester, & Grosser, 2022); therefore, it should be the central point in public sector organizations (Latif, 2012). Supervisors play an astonishing role in creating and utilizing trainees' positive behavior to get the maximum out of the training program (Park et al., 2018). Simply put, it is an informative session with the trainees; the session is not limited to the training calendar, training objectives, and benefits for the individual and the organization (Muduli & Raval, 2018).

In the absence of training, employees' self-efficacy will decrease and, anxiety will increase, negative perceptions will get space in the minds of the trainees (Kodwani, 2017). Training framing enables trainees to develop a sense of usefulness for the organization's development (Simpson, Schraeder, & Borowski, 2015). Coworkers and supervisors play an essential role in developing trainees' perception, enhancing self-efficacy and motivation, acquiring new knowledge, transferring to the working environment, and training effectiveness (Nikandrou, Brinia, & Bereri, 2009). Training engagement theory takes training comprehensively, while human capital theory helps explain the contribution of training in multiplying investment. Trainees associate a positive reward with the best performance in the training program, which creates positive energies in the trainee's mind (Velada & Caetano, 2007). In light of the above literature, it is clear that training framing plays its role as a moderator.

2.6 Training Effectiveness

The output of a well-planned activity in the form of behavior modification and the transfer of newly acquired KSAs to the work setting is known as training effectiveness (Aziz & Ahmad, 2011; Mahar, Akram, Rashid, & Shafique, 2021). Enhanced individual and organizational performance as a result of training activity are also known as training effectiveness (Azmawani et al., 2013; Rama Krishna Gupta Potnuru, Chandan Kumar Sahoo, & Parle, 2021). Transferring training material to the job environment is vital for improving individual and organizational performance (Kodwani, 2017). Organizational culture, work setting, support of supervisor and colleagues, training framing, learning, motivation, trainees' commitment, training objectives, and TNA are some factors that affect training effectiveness (Alvelos et al., 2015; Ijaola, Idoro, & Oladokun, 2021). Few professionals consider trainees should be held responsible for training transfer and training effectiveness (Cheremie & Simmering, 2008). Ford, (2009) and Marcus and Shoham (2014) believe that only 10 to 20 percent of the learned material can be utilized in the working setting.

The number of trainees trained, positive feedback from the trainees, and 100 percent utilization of the training budget are some of the indicators of the training program (Tai, 2006). Reaction, learning the required knowledge & skills, working behavior, and better performance refer to training transfer (Kirkpatrick, 1967). Organizational environment, trainees' characteristics, and training design are essential factors for training effectiveness (Brown & McCracken, 2009)

Training program design, trainee characteristics, and organizational environment affect training effectiveness (Brown & McCracken, 2009). Training effectiveness includes but is not limited to low operational cost and absenteeism, customer satisfaction, and the resultant growth in the market share (Chalachew Tarekegne, Renate Wesselink, Harm J. A. Biemans, & Martin Mulder, 2022; Daniels, 2003). That is why the area is vital for extensive research (Park et al., 2018; Sahoo & Mishra, 2019). Training effectiveness research will enable the organization to improve its competitive position and best utilize the available resources.

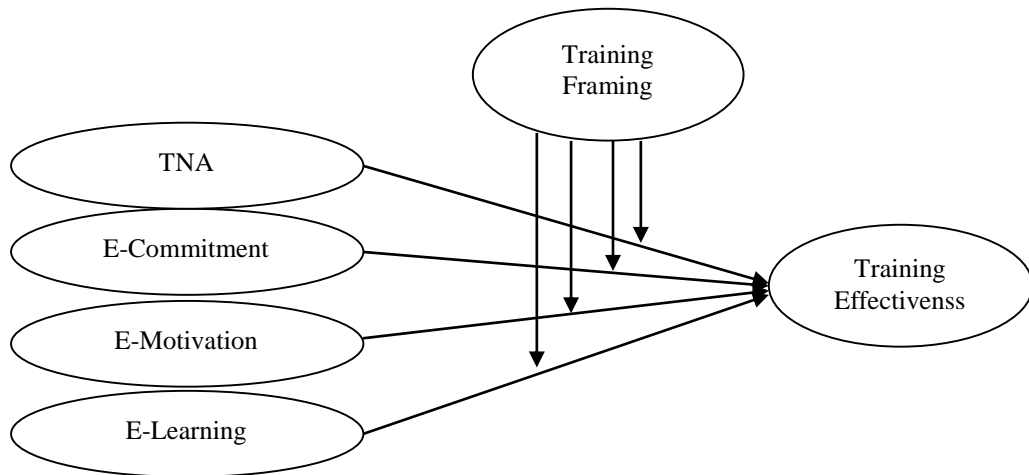


Figure 1. Conceptual Model of the Study

3. Methodology

This research employed cross-sectional data for analysis. For the purpose of have more generalized results the study employed simple random sampling technique. The study's participants were higher education trainees who worked in BPS-17 and above and had finished a training program in the last two years. Some contextual alterations were added to the adopted scale of earlier researchers after expert assessment. The scales for employees' commitment were adopted from the work of (Wills, 2013), for training framing (Alexander, Thanacoody, & Hui, 2011), for training effectiveness (Freeman, 2009), for TNA (Algabbani, 1989), for employees' learning (Ayres, 2005), and employees' motivation the scales were adopted from the research work

of (Hansen, 2001). Data was collected using a five-point Likert scale in a personally administered survey, with five (5) indicating strongly agree and (1) indicating strongly disagree. In total, 350 personally administered questionnaires were distributed, while the received number of questionnaires was 323 for analysis. The sample size is strongly supported by the Krejcie and Morgan (1970) table. Amos-18 and statistical package for social sciences (SPSS-19) were used for data analysis.

This study employed survey research approach wherein the researchers have collected the data through a questionnaire that has been personally administered. Survey through a questionnaire is suggested in such research due to many advantages. First, has the potential to cover large populations. Second, they are a non-intrusive means for gathering feedback. Third, carry less biasness. Finally, it does not demand too much time and too much expertise to fill in a questionnaire (McClelland, 1994). Data has been collected from those employees (BPS 17 and above) who have successfully completed in-service training and are currently employed.

4 Data Analysis and Results

Reliability demonstrates the internal consistency of the instrument (Mark, Saunders, Lewis, & Thornhill, 2012; Sekaran, 2003). Cronbach's alpha value in a range of 0.7 and 8 is acceptable and evidence that the instrument is error-free (Mohajan, 2017). Table 1 shows that Cronbach's alpha values are in the range of 0.78 and 0.89, which are acceptable.

Table 1 Descriptive Statistics and Reliability Values of Latent Variables

Variables	Mean	SD	Cronbach's Alpha
Training needs assessment	3.31	0.37	0.86
Employee commitment	3.18	0.34	0.78
Employee motivation	3.34	0.35	0.85
Employee learning	3.19	0.58	0.83
Training framing	3.68	0.39	0.89
Training Effectiveness	3.64	0.35	0.78

Table 2 demonstrates the Experience of the respondents, where more than 50 % of respondents have 10 years or more Experience. More than 32 % have professional Experience ranging from 6 to 10 years. Similarly, table 3 shows the educational qualification level of the respondents, where more than 71% of respondents' qualifications are master's while 20% have either MS/MPhil or Ph.D.

Table 2 Statistics about the Experience of the Respondents (N=323)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 5 years	53	16.4	16.4	16.4
	6 years to 10 years	104	32.2	32.2	48.6
	Above 10 years	166	51.4	51.4	100.0
	Total	323	100.0	100.0	

Table 3 Statistics about the Education Qualification Level of the Respondent (N=323).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bachelor	27	8.4	8.4	8.4
	Master	230	71.2	71.2	79.6
	Others	66	20.4	20.4	100.0
	Total	323	100.0	100.0	

The structural equation modeling technique was utilized to examine and validate how the indicators fit in the model or otherwise. The confirmatory factor analysis (CFA) was run in the first phase to establish how latent variables relate to their relevant indicators. Structural model and overall model fitness were employed after individual model fit confirmation.

Table 4 Fit Statistics for the Latent Variable Employee Commitment

#	Goodness of Fit Measures	Level of Acceptable Fit	Calculation of measures	Acceptability
I.	Absolute Fit Indices			
1	Chi-square	Provides Statistical test of significance	Chi-square = 17.433 (14 df), p = 0.0	Good Fit
2	(GFI)	≥ 0.9	0.984	Good Fit
3	RMSEA	$0.08 \leq$	0.028	Good Fit
4	(RMR)	Poor fit 0 to 1 Perfect fit	0.019	Good Fit
II.	Incremental Fit Indices			
1	NFI	Poor fit 0 to 1 Perfect fit	0.90	Good Fit
2	TLI		.964	Good Fit
3	CFI	≥ 0.9	.976	Good Fit
III.	Parsimony Fit Indices			
1	PNFI	Relatively high values represent a relatively better fit	0.596	Acceptable
2	PCFI	Relatively high values represent a relatively better fit	0.651	Acceptable
3	AGFI	≥ 0.9	0.969	Good Fit

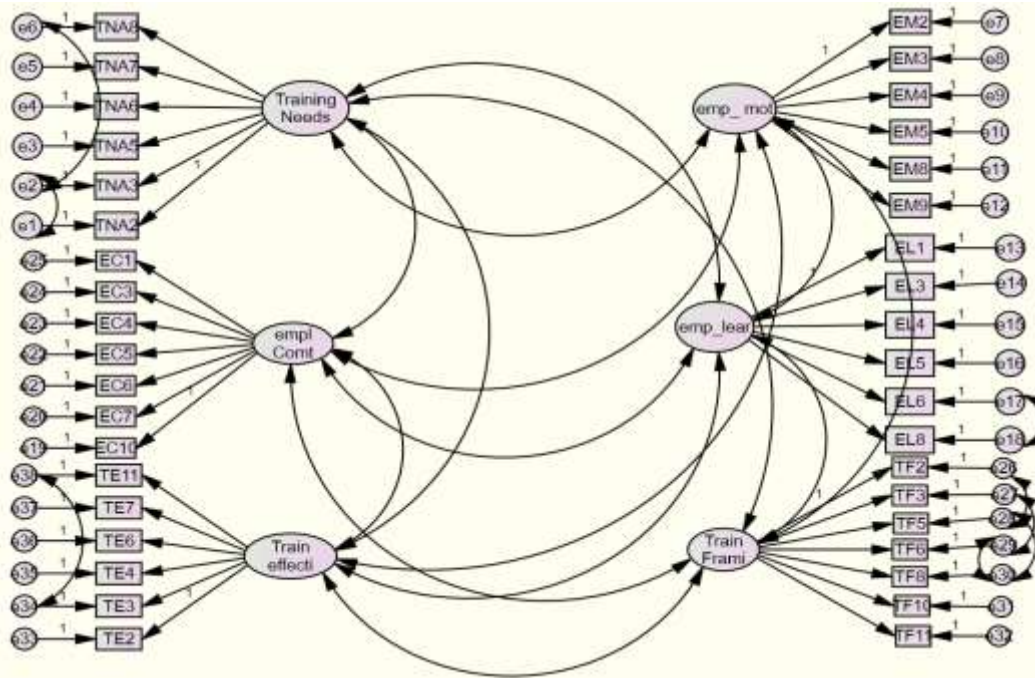


Figure 2 Measure Model of the Study

All indices are confirmed to be on the acceptable side of fit statistics by the findings of fit statistics shown in Figure 2 and Table Number 5, respectively. Similarly, figure 3 and table 6 also reflect that all the indices are in the acceptable range now that the researcher is in the position to run tests for moderating variables.

Table 5 Results of Fit Statistics of the Structural Model

#	Goodness of Fit Measures	Level of Acceptable Fit	Calculation of measures	Acceptability
I. Absolute Fit Indices				
1	Chi-square	Provides Statistical test of significance	Chi-square =974.8 (637 df), p = 0.0	Good Fit
2	(GFI)	≥0.9	0.86	Good Fit
3	RMSEA	0.08≤	0.040	Good Fit
4	(RMR)	Perfect fit 0 to Poor fit 1	0.027	Good Fit
II. Incremental Fit Indices				
1	NFI	Poor fit 0 to 1 Perfect fit	0.90	Good Fit
2	TLI		.96	Good Fit
3	CFI	≥0.9	.96	Good Fit

III. Parsimony Fit Indices				
1	PNFI	Relatively high values represent a relatively better fit	0.824	Acceptable
2	PCFI	Relatively high values represent a relatively better fit	0.880	Acceptable
3	AGFI	≥ 0.9	0.843	Good Fit

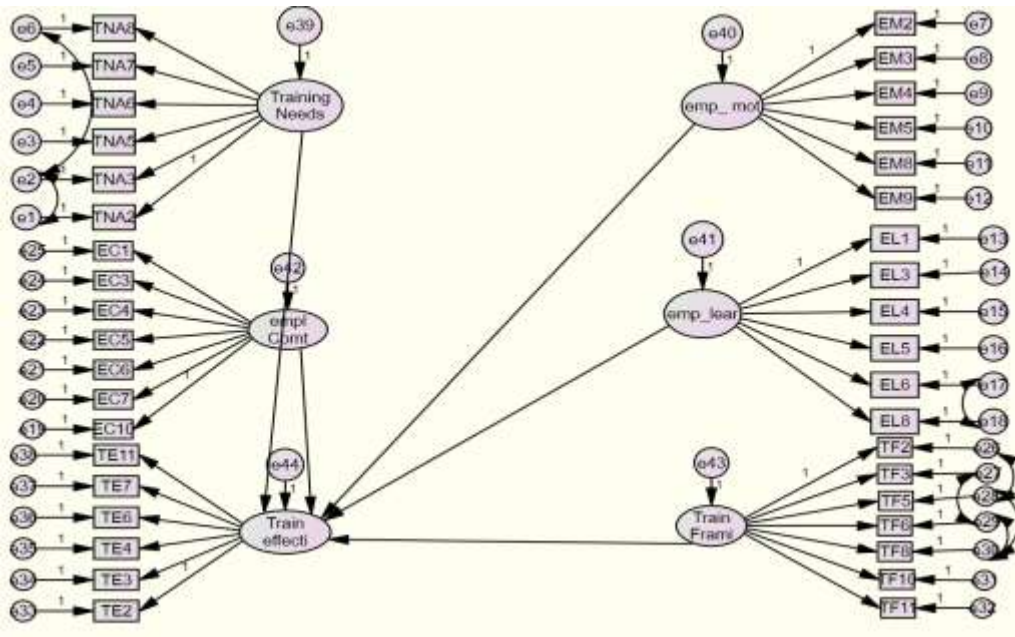


Figure 3: Overall Model Fit

Table 6: Results of the Overall Model Fit Statistics

#	Goodness of Fit Measures	Level of Acceptable Fit	Calculation of measures	Acceptability
I. Absolute Fit Indices				
1	Chi-square	Provides Statistical test of significance	Chi-square =1176.3 (653 df), p = 0.0	Good Fit
2	(GFI)	≥ 0.9	0.84	Good Fit
3	RMSEA	$0.08 \leq$	0.050	Good Fit
4	(RMR)	Perfect fit 0 to Poor fit 1	0.047	Good Fit
II. Incremental Fit Indices				
1	NFI	Poor fit 0 to 1 Perfect fit	0.88	Good Fit

	2	TLI		.94		Good Fit
	3	CFI	≥0.9	.94		Good Fit
III.	Parsimony Fit Indices					
	1	PNFI	Relatively high values represent a relatively better fit	0.82		Acceptable
	2	PCFI	Relatively high values represent a relatively better fit	0.88		Acceptable
	3	AGFI	≥0.9	0.81		Good Fit

Table 7 Research Hypotheses of the Study and their Status

Hypothesis	Relationship	Results	Analysis
H1	TNA and training effectiveness are positively associated	t=13.42 (p=0.0)	Supported
H2	Employee commitment and training effectiveness are positively associated.	t=5.47 (p=0.0)	Supported
H3	The association between trainees' motivation and training effectiveness is positive.	t=-0.23 (p=0.82)	Not supported
H4	The association between trainees' learning and training effectiveness is positive.	t=5.06 (p=0.0)	Supported
H1a, H2a, H3a, H4a	Training Framing moderates the relationship between TNA, EC, EM, EL, and training effectiveness	TF between TNA and TE t=4.34 (p=0.0) TF between EC and TE t=3.42 (p=0.0) TF between EM and TE t=0.60 (p=0.55) TF between EL and TE t=4.66 (p=0.0)	Supported Supported Not Supported Supported

Moderating relation is analyzed through Amos, and the results of the moderating analysis showed that training framing moderating the relationship of independent and dependent variables except for employee motivation. The result of moderating analysis can be observed in table 7.

4. Discussion

Higher education training institutes use blended approaches to identify performance gaps in these public sector organizations. The training institutes call for nominees from the subordinate offices for a given training and the subordinate office shares names for the subject training. The incompetency training theory supports the incredible selection of nominees, which may lead to training failure. While, in reality, TNA provides the foundation which recommends that training

should be viewed as a system, training engagement theory support this holistic phenomenon of training. The work (Sahoo & Mishra, 2019) supports that TNA help in placing the cornerstone in the foundation of the training program. Similarly, the finding (Iqbal & Khan, 2011; Iqbal, Malik, & Khan, 2012) are also in line with the underpinning study.

The results also revealed a positive association between learning and training effectiveness, which means learning KSA will enhance individual and organizational performance at the same time. The research findings of (Dachner, Ellingson, Noe, & Saxton, 2021; Davids et al., 2014; Rowland, Hall, & Altarawneh, 2016) support that learning of the required KSA and its transfer to the work setting will positively increase training effectiveness.

The data analysis failed to establish any association between employees' motivation and training effectiveness, one of the reasons for the lack of motivation may be the absence of TNA and the improper selection process of the trainees; the research finding (Lee, 2019) support the occurrences.

The results of data analysis also witness the positive association of employee commitment with training effectiveness. The work of (Rowland et al., 2016) not only supports but further explains that high commitment will bring positive results and enhance the effectiveness of the training program. The data also support that training framing moderates the association of all the independent variables and training effectiveness except employees' motivation.

5.1 Implications of the Study

The underpinning study opens a new stream of knowledge for practitioners, policymakers, and trainees to know the process training program. The independent variables (TNA, employee commitment, employee learning, employee motivation) and training framing as moderating variables are a unique combination for the current study. The results will be helpful for practitioners, policymakers, administrators, and decision-makers to enhance training transfer and effectiveness.

5.2 Limitations and Recommendations

The study's results strongly recommend that public sector organizations incorporate the TNA system regularly to restructure the training program's inputs. On the limitation side of the study! Cross-sectional data were used, respondents were public sector employees, and the questionnaire was used for data collection. Longitudinal studies, public and private organizations comparisons, and qualitative studies may provide further details.

6. Conclusion

Data were analyzed through descriptive and inferential statistics. The result revealed that training effectiveness in public sector organizations is positively linked with training effectiveness, employees' commitment, training needs assessment, and employee learning, while data did not support the association of employees' motivation with training effectiveness. The data also confirmed that training framing moderates the association between independent variables, i.e. (TNA, Employee commitment, and employee learning), while the data also ensured that training framing failed to moderate the relationship between employees' motivation and training effectiveness.

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