

Investigating the Relationship between Psychological Factors and Job Performance in the Context of E-Training and Development

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Abstract

Technology has altered practically every aspect of human life, including education. Technology-based education is becoming more popular as a supplement to or potential replacement for more traditional educational methods. The purpose of the study was to see if there was any connection between e-training and increased job efficiency. A training needs analysis is the first step in determining how skilled a company is. In this approach, the company may train its staff to increase output, quality, and customer satisfaction. This study demonstrates how important e-training is to all facets of e-training and growth. The effectiveness of an organization's training system as a whole, its online training methods, and its underlying infrastructure all play a role in how well its E-training and development initiatives turn out.

Keywords: Technology, E-training, Job performance

Introduction

The meanings of words like "training," "education," "development," and "learning" can vary widely from one context to the next. In order for workers to do their jobs effectively, it is necessary to create and outline the organization's goals. Training, for example, is associated with the development of job-specific abilities through on-the-job instruction, but education is typically associated with completion of a formal educational program. Both are said to be necessary in today's dynamic workplace if workers are to reach their full potential.

Hughey and Mussnug (1997) argue that practical experience should be an integral part of any training program. According to Overman, however, individuals do pay attention to what they remember and to the things that actually happen to them (1994).

Even though education and training are central to the concept of professional development, the term "development" is used to represent a broader variety of activities than are often associated with "learning" or "training."

According to the Chartered Institute of Personnel and Development (CIPD), "development" has essentially replaced "training" since its inception in the 1950s. Kitson (2003) argues that it is counterproductive to see training and development as interchangeable concepts. Instead of "education," he meant "training," which he defines as "learning activity oriented for immediate impact on the work or position that one performs in the present." Development, on the other hand, entails "learning activities that are targeted for future effect, a job or career that one will do in the future." Research like this suggests that the term "learning" should be broadly defined to include "training" and "growth."

Effective training and development programs can have a significant impact on a company's bottom line. As an added bonus, it has been proven to keep humans and machines from making potentially deadly mistakes when working together in dangerous environments. According to Senders and Moray (1991), human error accounts for between 30 and 80 percent of all major accidents. In order to increase public and workplace safety, it is recommended that workers and the general public receive training to increase their level of awareness, knowledge, and competence.

Related studies

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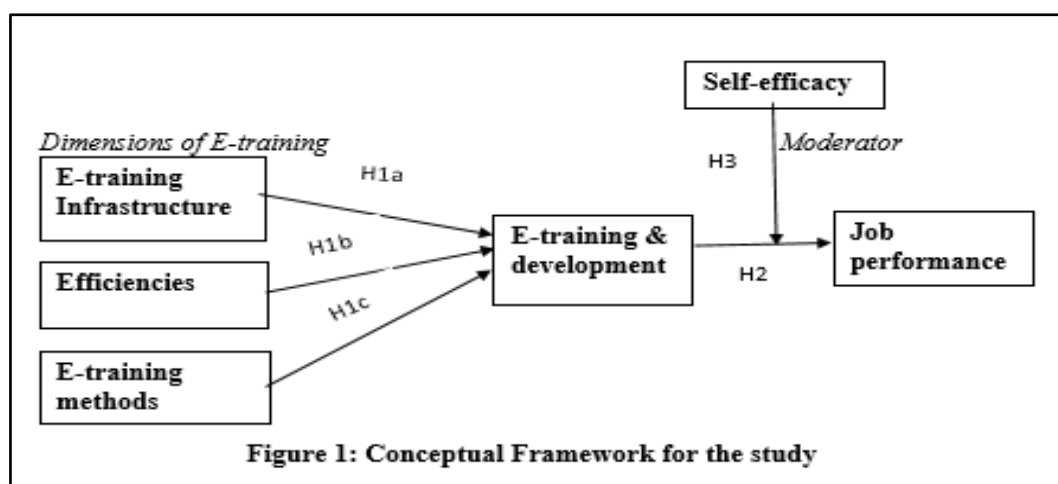
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Research objectives:

1. To study how E-training infrastructure influence E-training and development
2. To determine how Efficiencies of training influence E-training and development
3. To study the impact of E-Training & development on job performance



HYPOTHESES:

H1a; E-training infrastructure significantly influence E-training and development.

H1b: Efficiencies of training significantly influence E-training and development.

H1c: E-training methods significantly influence E-training and development.

H2: E-Training & development has significant and positive impact on job performance.

3. RESEARCH METHODOLOGY

It was determined to research the effects of e-learning on the performance of education workers in the Hyderabad area. This study employed a quantitative research technique and a standardized questionnaire to collect responses from the intended participants.

Sample size

The purpose of our research was to determine the efficacy of online training for UG faculty members. For this study, researchers used a quantitative research method that entailed a questionnaire given to participants.

3.1 The measuring instruments

The six features of the proposed model are depicted in Figure 1; these features all relate to online training in some way and are crucial to both professional and personal efficacy. Sixteen varieties of structures were surveyed using a total of 19 questions. The study's observable variables are meant to measure all of the latent dimensions, as the study also accounts for the unseen aspects of training and performance. Each survey question has two parts because that's how it was designed.

Independent, moderator, and dependent variable measures were chosen after an exhaustive review of the relevant literature for the current investigation. Scales for the many aspects or dimensions influencing online instruction were provided by Kamal et al. (2016).

To assess self-efficacy (the moderator), we employed a battery of five instruments (Riggs et al., 1994; Jyoti & Sharma, 2017). The study's dependent variable, participants' performance on the job, was measured using three items adapted from Thomson (2008).

3.3 Technique of data analysis

In this research, we used both descriptive and inferential statistics. Descriptive statistics were calculated using measures including mean, standard deviation, percentage, and frequency.

Statistical Analysis Using Multiple Scales (AMOS) version 26 and the Statistical Package for the Social Sciences (SPSS) were used extensively in this work. Before attempting to understand the structure of a dataset, exploratory factor analysis was used. Structural Equation Modelling (SEM), a multivariate technique for estimating relationships between all research variables by the simultaneous analysis of multiple regression equations, was then carried out. Experiments were conducted on the model, and the outcomes, including the moderation analysis, are reported below.

4. Data analysis and Results:

4.1 Demographic Information:

Table 1: Demographic information (N=269)

Measures	Items	Frequency	Percentage
Gender	Male	173	64.4
	Female	96	35.6
Age	Below 24	35	13
	25-35	188	70

	35-45	46	17
Marital Status	Married	158	58.9
	Unmarried	111	41.4
Years of experience	0-2	43	16.2
	3-5	104	38.7
	4-7	85	31.6
	≥10	37	13.7

4.2 Data Screening

Missing values: From 300 questionnaire, the researcher got 269 returned responses, but four values were missing for construct Self-efficacy and training infrastructure. These missing values were replaced using mean of the series.

Normality: The collected data having any outliers or detection of normality was conducted using kurtosis and skewness from SEM. The study used Hair et al., 2010 study as reference for interpreting normality values. From the Table 2, it can be inferred that the skewness (-.047 and -1.000) and kurtosis (-.047 and -1.000) values range are between the cutoff criteria of +2 to -2. Further, the standard deviations for all the items were above 0.5 also confirmed that the data is normally distributed.

4.3 Exploratory Factor Analysis

Factors related to small and medium-sized enterprises (SMEs) going worldwide were identified using exploratory factor analysis (EFA). Before conducting the analysis, we ran Kaiser-Meyer-Olkin (KMO) tests to make sure we had a sizable enough sample; the KMO statistic is 0.780, which is far higher than the minimum allowed value of 0.60. This value demonstrated that the sample size was adequate for the factor analysis to be performed. Bartlett's sphericity test significance at the 1% level further supports the necessity of the adequacy. The EFA in the present study was performed using principal component analysis with varimax rotation. The Eigen value of the five extracted components was greater than 1, indicating that they adequately accounted for the full variation in the data (71.53 percent). The reliability of the suggested scale items was calculated using Cronbach's alpha. Information about the various units of the course is included in Table 2. Each and every one of the alpha values in the table is more than 0.70. Other authors have confirmed this (Hair et al., 2010).

Table 2: Scale Items and Factor Loadings

	Scale Items	Factor Loadings	Cronbach's alpha
E-training Infrastructure			
Q1	My business offers a variety of communication infrastructure support services, including IT support.	.822	0.833
Q2	Based on the learners' specific training needs, course content is developed for each course.	.756	
Q3	There is a team dedicated to developing the course's electronic material that is responsible for designing the training activities to ensure that the requisite interactivity is achieved.	.769	
Q4	The company's training courses are organized and delivered in accordance with the highest international standards.	.771	
E-training Efficiency			

Q5	Trainers have a good understanding of the e-learning material.	.854	0.840
Q6	It appears to me that the trainers have a good deal of expertise in the management of online learning and the content of online courses.	.801	
Q7	It's clear that the training content and delivery are organised to the highest standards.	.864	
E-Training methods			
Q8	Trainers work with students on an interactive platform.	.809	0.782
Q9	Trainers use visual electronic applications, electronic games and virtual brainstorming.	.823	
Q10	Trainers use electronic coordinated approach	.776	
Online/E-training and development			
Q11	Management in my training and development department consists of highly qualified individuals.	.812	0.851
Q12	Supervisors facilitate the implementation of strategies taught in training that employees bring back to their workplace.	.803	
Q13	Employees learn new skills through training and receive preferential treatment when applying for new positions.	.816	
Job performance			
Q14	I believe that my work meets or surpasses the standards set by my supervisors.	.845	0.856
Q15	I've learnt a lot from this training, and it's helped me better my job performance and my company's overall performance.	.915	
Q16	After attending this training, my personal abilities have improved, and I am able to carry out my responsibilities without the need for additional time.	.879	
Self-efficacy			
Q17	Everything I need to do my job successfully already resides within me.	.943	0.879
Q18	I am confident in my ability to perform the duties of my position.	.939	
Q19	If I am in trouble, I can usually think of a solution	.801	

Source: Primary survey

Table 3: Path coefficients of the Structural model

Outcome variables		Causal Variables	S.E.	C.R.	P	Path coefficient	Determination coefficient (R ²)
TD	<---	TI	.088	4.687	***	.356	0.24
TD	<---	TE	.069	3.404	***	.247	
TD	<---	TM	.109	2.630	.009	.217	
JP	<---	TD	.067	6.751	***	.489	

Note: P refers to the differential probability.

4.5 Hypotheses testing using SEM model

Results from the path analysis and hypothesis testing are summarised in Table 5. Standardized path coefficients and their statistical significance, together with p-values, are displayed for each relationship. By referring to Table 4 and Figure 4, it is concluded that the standardized path coefficient (β) of all the factors influencing training and development is positive and significant. The β value of E-training infrastructure on online training and development is 0.36 with $p=0.000$, as the p value <0.05 , hence hypothesis H1a was accepted.

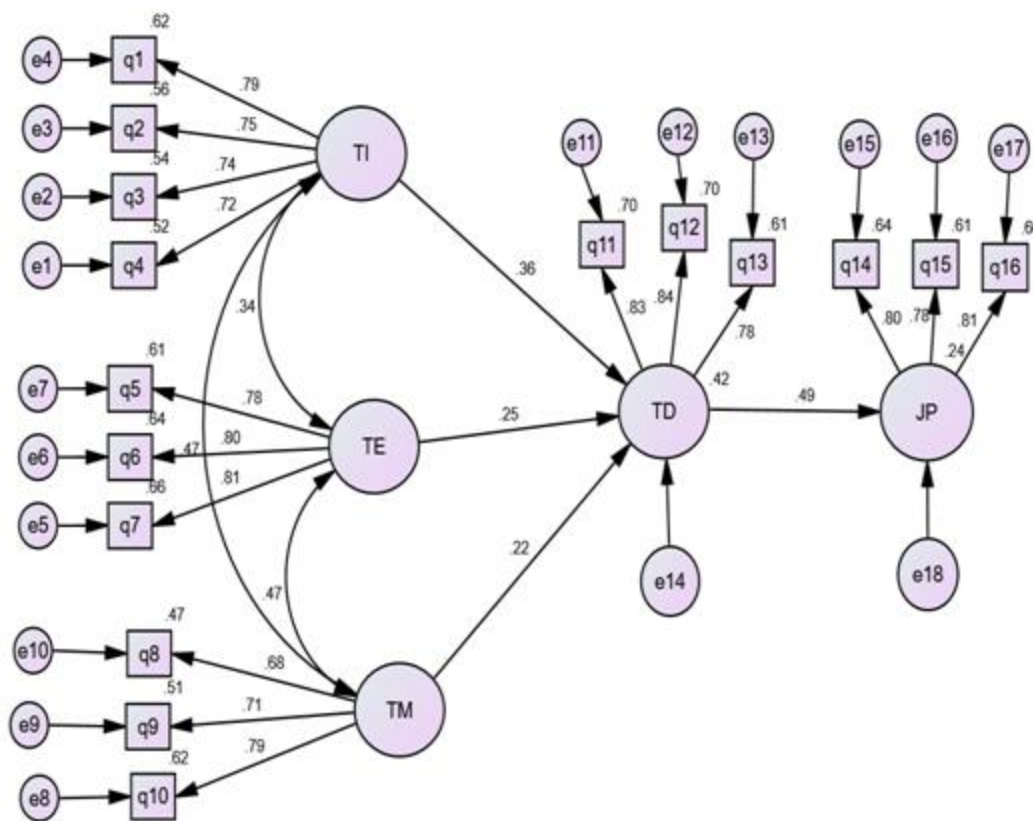
Further, the impact of Efficiency on TD is positive with β value 0.25 and $p<0.05$, thus hypothesis H1b is approved. The E-training methods also significantly influencing online training and development with β value 0.22, $p=0.009$, confirming hypothesis H1c ($p<0.05$).

Finally, the online training and development (TD) has significant positive impact on job performance of the employees. The standardized coefficient of this path is 0.49 with $p=0.000$, therefore, hypothesis H2 was accepted.

Results from a statistical analysis of the correlation between online training and performance indicate a coefficient of determination (R^2) of 0.24, indicating that 24% of the variation in performance can be attributed to such training.

Table 5 displays the results of a comprehensive fit analysis of the customer perception structural model, which show that the hypothesised four-factor model provides a very good fit to the sample data. Indicators of quality (GFI, CFI, NFI, AGFI) have values close to 1 or above the threshold for acceptance. The RMSEA score is <0.08 , indicating that the SEM model is fairly consistent with the data.

Figure: 4 Model 1



Source: Primary Survey

Note: Here: TI: E-training infrastructure, TE-Efficiency, TM; E-training methods, TD-Online/E-training & development and JP-Job performance

Table 4: Goodness of Fit Statistics in the structure model

Indices	Abbreviation	Observed values	Recommended criteria	References
Chi square	χ^2	121.19	pval>0.05	Hair et al. (2010)
Normed chi square	χ^2/DF	1.249	$1 < \chi^2/df < 3$	
Goodness-of-fit	GFI	0.950	>0.90	
Adjusted GFI	AGFI	0.930	>0.80	
Normed fit	NFI	0.939	>0.90	Byrne (2010)
Comparative fit	CFI	0.987	>0.95	
Root means square error	RMESA	0.035	<0.05 good fit <0.08 acceptable fit	
Tucker-Lewis index	TLI		$0 < TLI < 1$	

Source: The Author.

Table 5: Hypotheses summary table

Hypotheses	Evidence	Supported?
H1a: TD <--- TI	0.356***	Yes
H1b: TD <--- TE	0.247***	Yes
H1c: TD <--- TM	0.217**	Yes
H2: JP <--- TD	0.489***	Yes

(Source: Primary survey)

Discussion:

After the Covid-19 pandemic online/E-training and development becomes the necessity of the company to trained their employees using virtual platforms. The findings of the study also proved the importance of training and development in any organization. The study explores three issues:

- I. The various dimensions of E-training and development in IT company of Saudi Hyderabad.
- II. The impact of E-training and development on job performance of the employees.
- III. The moderating role played by self-efficacy in between training and development and job performance along with the effect of interaction.

The results of the present study revealed that each dimension of E-training & development significantly influences E-training. These findings indicate that the success of E-training & development in a company driven by good infrastructure, online training methods and efficiencies of all the training system.

The findings of this study show that e-learning and development can have a positive impact on a person's job performance if they are competent. Employees and trainees who are efficient are able to do their jobs more effectively, which results in increased productivity.

Managerial Implications:

Based on the findings of this study, top management should implement an e-training strategy to improve staff output. Online education and growth were found to benefit from all studied training infrastructure, methodology, and efficiency aspects. Management should place a premium on designing an intuitive and interesting user interface for every training program they implement. New evidence shows that IT workers' confidence in their own abilities mitigates the impact of e-learning on their productivity on the job.

Leaders have an obligation to their subordinates to provide honest feedback on how they're doing in their online training and development programs. The success of the training program relies on the buy-in and dedication of management and leadership.

Managers should create a culture and set of rules that encourage employees with low efficacy to reflect on their mistakes and improve their performance in the future.

Conclusion and Future research:

Today's businesses, more than ever, recognize the value of investing in their employees' professional development and growth, making effective training more crucial than ever. Companies and countries need to invest in the continual education and training of their workforces if they want to be competitive in the global economy. When companies support their employees' individual development, they see increased productivity and creativity. The importance of training as a tool for professional development and advancement is now generally accepted. In order to gain a deeper understanding of the issues at hand, it is helpful to refine the terms used to describe the activities that contribute to an organization's training, education, development, and/or learning of its employees. Research in one industrialized nation can be used as a proxy for research in others, and vice versa.

References;

1. Camci, A., & Kotnour, T. (2006, July). Technology complexity in projects: does classical project management work? In *2006 Technology Management for the Global Future-PICMET 2006 Conference* (Vol. 5, pp. 2181-2186). IEEE.
2. Daroch, B. (2017). Consumer's perception towards social media advertising. *International Journal of Research in Business Studies*, ISSN: 2455-2992, 2(2).
3. Riggs, M., Warka, J., Babasa, B., Betancourt, R., & Hooker, S. (1994). Development and validation of self-efficacy and outcome expectancy scales for job-related applications. *Educational and Psychological Measurement*, 54, 793–802.
4. Gaskin, J., & Lim, J. (2016). Master validity tool. *AMOS Plugin In: Gaskination's StatWiki*.
5. Jyoti, J., & Sharma, P. (2017). Empirical investigation of a moderating and mediating variable in between mentoring and job performance: A structural model. *Revista de Psicología del Trabajo y de las Organizaciones*, 33(1), 55-67.
6. Kamal, K. B., Aghbari, M., & Atteia, M. (2016). E-training & employees' performance a practical study on the ministry of education in the Kingdom of Bahrain. *Journal of Resources Development and Management*, 18.
7. Masadeh, M. (2012). Training, education, development and learning: what is the difference?. *European scientific journal*, 8(10).
8. Mittal, S., Gupta, V., & Mottiani, M. (2022). Examining the linkages between employee brand love, affective commitment, positive word-of-mouth, and turnover intentions: A social identity theory perspective. *IIMB Management Review*.

9. Power, D., & Singh, P. (2007). The e-integration dilemma: The linkages between Internet technology application, trading partner relationships and structural change. *Journal of Operations Management*, 25(6), 1292-1310.
10. Singh, V., & Sharma, S. K. (2016). Analyzing the moderating effects of respondent type and experience on the fuel efficiency improvement in air transport using structural equation modeling. *European Transport Research Review*, 8(2), 1-20.
11. Singh, S., & Aggarwal, Y. (2018). Happiness at work scale: Construction and psychometric validation of a measure using mixed method approach. *Journal of Happiness Studies*, 19(5), 1439-1463.
12. Su, Y. S., Chiang, W. L., Lee, C. T. J., & Chang, H. C. (2016). The effect of flow experience on player loyalty in mobile game application. *Computers in Human Behavior*, 63, 240-248.