



Enhancement of Technical Employees' Resilience through E-Training during the Pandemic: A Case Study of Selected Hydroelectric Power Plants in India

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Abstract

Due to pandemic organizations have faced disruptive situation in the competitive business world. Disruptive situations, in general, can be difficult to handle and may necessitate fast thinking, adaptation, and resilience to overcome. During disruptive situations workforces need to be ready with enhanced resilience to thrive any sort of situation. Employees those who have been trained demonstrate proactive, adaptive, and positive attitudes, as well as comfort with change, new ideas, and new technologies. Hydroelectric Plants normally located in hilly and far-flung areas. Hence, to keep workforces ready with enhanced resilience levels, organizations need to impart e-training to their workforces. Travelling long distances from their locations for the purpose of class room training is extremely difficult due to road blockades, lockdowns and pandemic like situations. Employees must have to learn continuously for organisations to maintain a balance of growth and success. Organisations must use e-Training to train their employees in order to survive in any challenging situations. Power plants employees requires to work in shifts; thus, their presence is needed. This is possible with Electronic Training(e-Training) method. The e-Training is a new approach to impart training to employees using the technology. The e-Training methods are very much advantageous when trainees are dispersedly located. E-Training is digitalized method to impart technical skills and soft skills, which results in employees' existing knowledge enhancement to cope with crisis.

Purpose: To study effectiveness of e-Training in enhancing employees' resilience for balanced performance during crisis situations and continuous knowledge on technical know-how. The present study is to know effectiveness of e-Training in building Resilience in employees in the selected power units and to know after attending e-Training programs how the employees have enhanced with resilience levels in them and are contributing for survival of organizations especially during disruptive situations.

This study was undertaken in selected private power plants located in two districts of Himachal Pradesh. Cross-sectional data was collected from employees of selected power plants. PLS-SEM was used for analysing the data. The results shows that resilience of

employees was increased through imparting e-Training during disruptive situation. Employees have shown their positive attitudes and willingness in adapting technological changes significantly.

Keywords: Disruptive situations, e-Training, Employee Resilience, Technological changes.

1. Introduction

Disruptive situations are ones that interrupt or disrupt typical operations, procedures, or activities. They can be induced by a variety of circumstances such as natural disasters, social upheaval, economic downturns, or even unexpected personal happenings. Organisational change can be difficult for employees, and resilience skills may help to reduce workplace stress, resulting in positive societal change (Campbell, 2014). Organisations in the competitive business sector are experiencing VUCA scenarios as a result of pandemics and technological advancements. Organisations must adapt to technological advances in order to survive in this context. This is feasible through providing e-Training to their personnel in order to improve their adaptability to technological developments.

In many organisations, digital technologies are vital for training, adult education, and human resource development (Gegenfurtner et al., 2018; Thalhammer, 2014). The communication route between Trainer and Trainees in the e-Training method is possible via Audio-Video Conferencing (over the internet) (Granda et al., 2015). When trainees are spread and in remote locations away from major cities, e-Training programmes are helpful. The primary benefits of e-Training activities are (i) that they may be carried out at a low cost; (ii) that they can save time; and (iii) that they can help to establish green organisations and societies (pollution-free environments).

Employees' knowledge on hydropower plant machinery, electronic gadgets, and technology will be improved through electronic training. It gives people with opportunities to learn through e-training. There are various platforms available via internet - e-conferences/seminars, webinars through Zoom, Google-Meet, Teams, Webex meetings, and Gotowebinar. E-learning modules, interactive video lessons, and virtual reality simulations are all instances of electronic training. Employees can use these platforms to gain technical knowledge and skills. Electronic training has gained popularity in recent years due to the flexibility and convenience it gives learners. With electronic training, learners can access learning materials and resources from anywhere and at any time, as long as they have an internet connection and a device such as a laptop, tablet, or smartphone. This personalised learning experience has the potential to improve knowledge retention and learning results overall.

Through which employees can adapt to socio-economic and technical changes in hydroelectric machinery, new advancements and give their best for organization's growth and its survival. The main advantages of e-Training activities are (i) it can be carried out with minimum costs; (ii) it can save time and (iii) to create green organizations and society (pollution-free environment). Also, this method contributes in environmental safeguarding and greening organization.

Many industries, including healthcare, education, industry, and business, as well as hydroelectric power units, adopted electronic training. It is especially useful for firms with

geographically dispersed units' employees because it eliminates the need for costly and time-consuming in-person training sessions. E-training is a powerful tool that may increase learning for both individuals and businesses. Learners can also progress at their own pace with e-Training since they can pause, rewind, and replay learning materials until they fully understand the subject. This tailored learning experience has the potential to improve knowledge retention.

The e-Training method is playing an important role to train the employees continuously even during pandemic like disruptive situations to build resilience in workforces. Authors have conducted research in few Hydroelectric Plants located in Himachal Pradesh State in India. Most of the Hydroelectric Power Plants in India are located in hilly areas and difficult terrains. To travel from these areas to different parts of the country to acquire training by workforce, it is very difficult especially during pandemic like situations and in adverse weather conditions. Also, most of the technical staff need to present most of the times in the power plants to rectify technical faults to run machinery continuously to avoid losses.

Employee resilience can be defined as the ability of an individual to adapt, recover and bounce back from stressful or adverse situations in the workplace. The American Psychological Association (2017) defines resilience as "the process of adapting suitably in the face of adversity, shock, disaster, pressures or significant sources of stress-such as family problems, serious health problems or workplace and financial stressors. Masten (2001) defines it as an "ordinary magic", revealed that resilience is a "common phenomenon arising from ordinary human adaptive processes". Resilience is the process of positive adaptation in turbulent situations of everyday stressors and common life transitions (Gillham et al., 2013). Southwick et al. (2014) proposed that "resilience is not only bouncing back from adverse situations, but also moving forward with dedicated team work by keeping in mind learning aspect from experiences of adverse situations faced". Na'swall et al., (2013); Kuntz et al., (2016) defined resilience in employees as "employee capability, facilitated and supported by the organization, to utilize resources to continually adapt and flourish at work, even when faced with challenging circumstances". During turbulence situations due to rapid technological changes, employees having resiliency shows positive thinking (Cooper et al., 2013) and positive attitude (Youssef & Luthans, 2007). The workforce who imbibes resiliency, quickly bounce-back from failures than non-resilient workforce. Resilient workforce shows positive attitude, adaptive and responsive nature to organizational changes and for organizational survival (Shin et al., 2012), will surely contribute in achieving the success to any firm (Sharma & Sharma, 2020).

1.2 Brief in respect of selected hydroelectric power plants:

Greenko Budhil Power Plant, Chamba District, Himachal Pradesh: The Budhil Hydro Electric Project (BHEP) is a run-of-the river hydro project on the Budhil stream, a major tributary of the Ravi River, in the Chamba district of the state of Himachal Pradesh in India. The project having an installed capacity of 70MW has been in operation since May 2012.



Fig. 1

Source: www.budhilhydro.com

Bajoli Holi Hydro Power Plant: 180 MW run-of-the-river power facility being constructed on the River Ravi in the Chamba District of Himachal Pradesh.

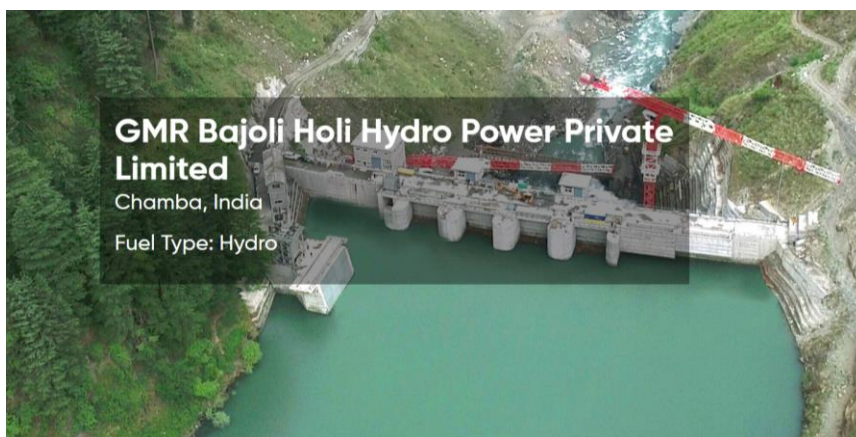


Fig. 2

Source: www.gmrgroup.in/bajoli-project/

There are several dimensions that contribute to employee resilience:

Table: 1

Employee Resilience Dimensions	Definition	References
e-Training on Emotional resilience	This refers to an individual's ability to manage their emotions in a healthy and productive way, especially during challenging times.	Janna et al., 2021
e-Training Cognitive resilience	This dimension focuses on an individual's ability to maintain a positive outlook and develop effective problem-solving skills when faced with obstacles.	Altan et al., 2022.
e-Training Social resilience	This dimension refers to an individual's ability to seek and receive support from others, as well as to maintain positive relationships with colleagues and supervisors.	Samantaray et al., 2023.

Employee Resilience Dimensions	Definition	References
e-Training on Physical resilience	This dimension refers to an individual's ability to maintain good physical health and well-being, which can help them to better manage stress and cope with adversity.	Kumar et al., 2021
e-Training on Spiritual resilience	This dimension refers to an individual's sense of purpose and meaning, and their ability to find strength and comfort in their values and beliefs.	Peres, 2007.
e-Training on technical skills resilience	This dimension refers to an individual's technical skills enhancement	Agha,2022.

Employees can better manage stress, adapt to change, and perform well at work by mastering these resilience-related skills. During times of crisis, like as natural disasters, economic downturns, or worldwide pandemics, employee resilience is especially crucial. Employees may experience elevated levels of stress, anxiety, and dread during these times of uncertainty and upheaval, which may have an adverse influence on their mental health and capacity to work efficiently. The following are some tactics that businesses might use to encourage resilience among workers during a crisis:

Frequent and clear communication : Employee worry and uncertainty can be reduced by giving them accurate and timely information about the issue and the organization's reaction.

Adaptability and assistance: Offering flexible work options, such as remote work or flexible schedules, can assist staff members in juggling work and family obligations in times of need. Employers can also help employees get access to resources for mental health, like therapy or employee support programs.

Empowerment and participation: Building resilience and a sense of purpose can be facilitated by giving employees a voice and a role in the organization's crisis response. This can be accomplished by including staff members in decision-making procedures or by giving them opportunities. This can be done through involving employees in decision-making processes or providing opportunities for them to contribute to relief efforts.

Recognize and validate emotions: Employers should be aware that workers may be feeling a variety of emotions during a crisis and should offer a secure environment where workers may talk about and process their feelings. In order to help employees deal with the stress and ambiguity of the circumstance, employers can also provide emotional support and recognition.

Employers can boost their employees' crisis resilience by putting these strategies into practice, which will improve workers' mental health, job happiness, and productivity.

Employees of hydroelectric power plants may have difficulties and stress when a crisis, such as a natural disaster, epidemic, or VUCA periods, arises. Here are some tactics that aid in fostering their resiliency in such circumstances:

Ensuring employee safety: The safety of the workforce should come first during a crisis. Employers should take all necessary steps to maintain employee security and safety, such as supplying the required personal protective equipment and monitoring the observance of all safety procedures.

Sharing information and communicating effectively is crucial during times of crisis. Employers must promptly and accurately inform staff members of the circumstances, the organization's response, and any adjustments to rules or procedures.

By offering access to mental health resources like counseling or employee assistance programs, employers can help hydroelectric power personnel become more resilient. Employers can also offer financial support, such as emergency funds or loans, to help employees cope with any financial challenges they may be facing.

Promoting cooperation and teamwork: During a crisis, staff may need to cooperate more closely than ever. By giving staff members the chance to collaborate, sharing resources, and rewarding the team for success, employers can promote teamwork and collaboration.

Promoting a positive workplace culture: A positive workplace culture can assist employees in overcoming stress and adversity. By expressing gratitude for their workers' efforts, offering chances for professional growth, and encouraging work-life balance, employers can create a happy work environment.

Employers can support their hydroelectric power employees' crisis resilience by putting these methods into practice, which will improve employees' mental health, job happiness, and productivity.

1.3 Research: Questions??

How Power Station can plan to impart training to its employees in its own site without sending them to very long distances especially during disruptive situations?

During pandemic situations, how Power Stations can manage workforces' health and performance?

Whether power stations can manage technical changes during era of digitalization through e-Training during disruptive situations?

Whether e-Training will contribute in minimizing vehicular pollution and safeguard the environment? Whether Power Stations are contributing for greening organizations through e-Training?

By adopting to e-Training method organizations are achieving training goals and effective performance especially during disruption situations?

By e-Training method organizations are achieving employees' resilience to optimum levels for adapting to technological changes especially during disruption situations?

1.4 Rationale & Objectives of Study:

Aim of this study is to analyse e-Training in developing resilience to successfully overcome negative impact of disruptive situation. We intended this study to improve understanding whether workforce resilience and health and yoga awareness programmes can be developed by using e-Training methods as a tool. The learning intervention is the independent variable, and the employee's resilience scores are the dependent variables.

This study would assist organizations to understand by enhancing human resource resilience through e-training, leads to technology adaptability and to compete in the business market. The present study is to understand and to know: workforce attitudes and beliefs about change before and after e-training learning programs; whether it leads to more positive behaviours in response to disruption situations or not. The primary research question is whether a significant difference exists between individual resilience and health levels before and after a learning intervention in the target population.

Objectives:

- To analyse the conceptual relationship between e-training and employees' resilience.
- To study the role of selected power plants' employees' resilience enhancement through e-Training during pandemic period.

1.5 Research Methodology used: Quantitative Analysis, Cross Sectional Survey

To conduct the study, data was collected from 260 personnels with technical background out of 400 personnel from selected two Units, who have undergone e-Training programs. The information is collected on the e-Training programs for personnel conducted during the year 2020-21. The selected power plants in Chamba region, Himachal Pradesh India are in hilly and remote areas and far-flung places from main cities. The personnels working in Power Plants both in technical and non-technical trades have attended various e-Training programs on Technical and Non-Technical subjects. Technical topics are on Hydro Power/Solar Power/Wind Power/ Renewable Energy/IT and Non-technical subjects are Functional/ Yoga, Health & Lifestyle. Due to pandemic, in person/traditional training methods were not possible, which were also expensive. The selected power plants adapted e-Training methods. These programs have surely enhanced knowledge and resilience levels of all the technical and non-technical personnels across power plants. Senior Management, Management, Executives/Non-Executives both in technical and non-technical trades and women personnel benefited and families of personnel working in these plants were also attended programs on Yoga, Lifestyle Management and got benefits.

In all it is observed that enhancement of determination, vision, interaction, relationships, organizing, self-confidence, pro-activeness and soft skills like social inter-personal skills, flexibility, empathy, positive attitudes, responsibility, initiative taking, teamwork have tremendously improved in personnels. It is also observed that the resilience levels enhanced are based on personnel's educational backgrounds, experience levels. With enhanced resilience levels in personnels results that they are willing and ready to face any challenges. They have shown positive approach treating the problem as opportunity instead of threat. With this attitude personnels have easily thrived in pandemic and adapted latest technology.

1.6 Measurement of Constructs

The PLS3-SEM method is used in this study. The application of this approach necessitates determining whether the latent variable is formative or reflective (Samantaray et al 2023). The latent variables are not inherently formative or reflective; this is dependent on the method of analysis. The constructs are being measured. The main difference between measuring reflective and formative constructs is that the reflective construct causes variations

in its indicators, whereas the formative construct causes variations in its indicators; thus, the direction of causality in formative constructs is completely reversed in reflective constructs. The reflective variable is a latent variable that exists independently of its indicators' effects and is the source of its observed measures. When an indicator is removed, the correlation between the remaining indicators and the latent variable remains unchanged (indicator interchangeability effects) (Simonetto 2012). However, the formative variable is a latent variable that is determined by its indicators and is a function of its observed measures (Edwards and Bagozzi 2000). Each observed indicator in formative models describes a different aspect of the latent construct. Thus, removing one or more Bollen, 2007 observed measures from the formative construct results in the removal of a specific part of the construct (Wilcox et al. 2008).

1.7 Conceptual Framework

Personnel with Engineering cadres having technical backgrounds, when enter any organization initially they don't have capabilities to face any crisis and competencies due to various reasons in the business markets. They cannot be able to adapt instantly technological changes and perform in a balanced manner. When they are provided e-training on resiliency, technical updates and skills by their team leaders, they can easily thrive crisis successfully with enhanced confidence. Developed personnel resiliency levels through e-Training depend on their qualifications and experience. Personnels upon training capable to thrive various situations with imbibed resiliency through e-training programs and achieve success for the organizations.

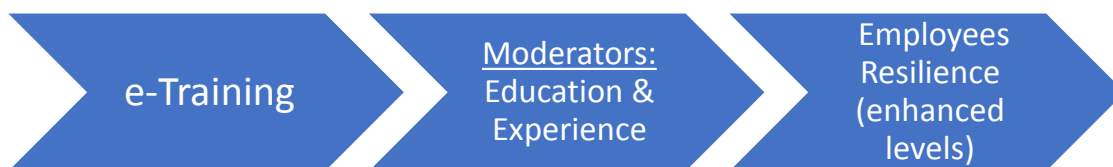


Figure: -3 Conceptual framework

Above conceptual framework indicates organizations using e-Training makes impact on employee resilience on technical and non-technical cadres. Significant development of employee resilience after attending e-Trainings noticed. The model we selected contained 23 latent variables and every variable was measured through structured questionnaires, just like the first latent variable was e-Training, Employees' Resilience.

Hypothesis of the study are:

H1: e-Training on emotional resilience has significant and positive impact on Employee Resilience on Technical employees.

H2: e-Training on cognitive resilience has significant and positive impact on Employee Resilience on Technical employees.

H3: e-Training social resilience has significant and positive impact on Employee Resilience on Technical employees.

H4: e-Training on technical skills resilience has significant and positive impact on Employee Resilience on Technical employees.

H5: e-Training on physical resilience has significant and positive impact Employee Resilience on Technical employees.

H6: e-Training on spiritual resilience has significant and positive impact on Employee Resilience on Technical employees.

1.8 Measurement model result assessment

The purpose of reliability testing is to evaluate the material's internal consistency. Cronbach's Alpha is a well-known dependability metric. Taber (2016) defines a good reliability test value as greater than 0.7. Meanwhile, Hair et al. 2019; Crandall et al., 2011 defined reliability as a composite dependability score in excess of 0.6. According to Table 4, all of the things were reliable and met the scholar's value. Hair et al. (2019) proposed setting the factor loading criterion between 0.5 and 0.7. All of the loading factors were more than 0.5. Furthermore, the average variance extracted (AVE) is defined as the aggregate weighted mean of such construct-related components' squared loadings, and it is a standard metric for testing convergent validity. When the AVE is 0.5 or greater it suggests the construct explains more than half of its component variation (Hair et al.2019).

Table: 2 Variables, Indicators & Factor Loadings

Variables	Indicators	Factor Loading
e-Training on Emotional Resilience (eTER)	eTER1 - E-training programs that focus on building resilience	0.784
	eTER2- E-training programs that focus on mindfulness	0.829
	eTER3 - E-training programs that promote work-life balance	0.951
e-Training on Cognitive Resilience (eTCR)	eTCR1 - E-training programs that focus on the ability to analyse complex problems and develop creative solutions.	0.772
	eTCR2 - E-training programs that provide employees with problem-solving skills.	0.829
	eTCR3 - E-training programs that promote positive psychology	0.901
	eTCR4 - E-training programs that provide instant troubleshooting skills.	0.972
e-Training on Social Resilience (eTSR)	eTSR1 - E-training programs that focus on team building.	0.876
	eTSR2 - E-training programs that promote positive work. environment.	0.956
	eTSR3 - E-training programs that offer cross-functional training	0.772
	eTSR4 - E-training programs that provide training in conflict resolution.	0.799

e-Training on Technical Skills Resilience (eTTSR)	eTTSR1– E-training on Encouraging employees to engage in continuous learning and providing opportunities for ongoing programmes.	0.783
	eTTSR2- E-training programs that provide technical training in the latest engineering technologies and practices.	0.844
	eTTSR3- E-training programs that provide training in technical writing.	0.952
	eTTSR4 - E-training programs that provide industry-specific training.	0.779
	eTTSR5 - E-training programs that focus on professional development.	0.884
	eTTSR6 - E-training programs that focus on safety training.	0.972
e-Training on Physical Resilience (eTPR)	eTPR1 - E-training programs that focus on self-reflection	0.966
	eTPR2 - E-Training programs that focus on health and lifestyle	0.762
	eTPR3 - E-Training programs that focus on Yoga	0.769
e-Training on Spiritual Resilience (eTSPR)	eTSPR1 - E-training programs on self-confidence and motivation.	0.792
	eTSPR2 - E-training on individual emotional balancing in all situations.	0.846
	eTSPR3 - E-training programs on individual spiritually enhancement.	0.969
Employee Resilience	PA1 – Enhanced communication skills	0.890
	PA2 – Flexibility in technical Knowledge	0.891
	PA3 – Emotional well-being and balancing	0.916
	PA4 – Adaptability	0.927
	PA5 – Tactically trained personnel	0.946
	PA6 – Resilient human resources	0.949

Table 3: e-Training and Employee Resilience constructs/indicator

Construct	Indicators	References
e-Training on Emotional Resilience (eTER)	eTER1 - E-training programs that focus on building resilience eTER2- E-training programs that focus on mindfulness eTER3 - E-training programs that promote work-life balance	De Santo & De Meo (2016) Wijakkanalan et al (2013). Wiradendi et al (2020)

e-Training on Cognitive Resilience (eTCR)	<p>eTCR1 - E-training programs that focus on the ability to analyse complex problems and develop creative solutions.</p> <p>eTCR2 - E-training programs that provide employees with problem-solving skills.</p> <p>eTCR3 - E-training programs that promote positive psychology</p> <p>eTCR4 - E-training programs that provide instant troubleshooting skills.</p>	<p>Liao & Ho (2008).</p> <p>Gabelaia & Bucovetchi (2020).</p> <p>Wiradendi et al (2020).</p> <p>Kasprisin et al (2003)</p>
e-Training on Social Resilience (eTSR)	<p>eTSR1 - E-training programs that focus on team building.</p> <p>eTSR2 - E-training programs that promote positive work environment.</p> <p>eTSR3 - E-training programs that offer cross-functional training</p> <p>eTSR4 - E-training programs that provide training in conflict resolution.</p>	<p>De Santo & De Meo (2016)</p> <p>Wiradendi et al (2020)</p> <p>Abreu & Alcântara (2015)</p> <p>Echard & Berge (2008)</p>
e-Training on Technical Skills Resilience (eTTSR)	<p>eTTSR1 - E-training on Encouraging employees to engage in continuous learning and providing opportunities for ongoing programmes.</p> <p>eTTSR2 - E-training programs that provide technical training in the latest engineering technologies and practices.</p> <p>eTTSR3 - E-training programs that provide training in technical writing.</p> <p>eTTSR4 - E-training programs that provide industry-specific training.</p> <p>eTTSR5 - E-training programs that focus on professional development.</p> <p>eTTSR6 - E-training programs that focus on safety training.</p>	<p>Park et al (2019)</p> <p>Christian et al (2007).</p> <p>Driscoll and Reid (1999)</p> <p>Percival and Percival (2008)</p> <p>Mohsin and Sulaiman (2013)</p> <p>van Wyk & de Villiers (2016)</p>
e-Training on Physical Resilience (eTPR)	<p>eTPR1 - E-training programs that focus on self-reflection</p> <p>eTPR2 - E-Training programs that focus on health and lifestyle</p> <p>eTPR3 - E-Training programs that focus on Yoga</p>	<p>Andrade (2015).</p> <p>Liao, S. H., & Ho, Y. P. (2008).</p> <p>De Santo & De Meo (2016). Kumar and Kumar, 2022</p>
e-Training on Spiritual Resilience (eTSPR)	<p>eTSPR1 - E-training programs on self-confidence</p> <p>eTSPR2 - E-training on individual emotional balancing in all situations.</p>	<p>Nilsson and Engström, 2015</p> <p>Khosla et al (2009).</p>

	eTSPR3 - E-training programs on individual spiritually enhancement.	Miyamoto (2021)
Employee Resilience (ER)	ER1 – Enhanced communication skills ER 2 – Flexibility in technical Knowledge ER 3 – Emotional well-being and balancing ER 4 – Adaptability ER 5 – Tactically trained personnel ER 6 – Resilient human resources	Hussain (2019). Knot et al (2001). Wolff et al (2013). Paraskevas et al (2015). Crichton & Rattray (2000). Wang et al (2014).

Table 4. Confirmatory factor analysis with Cronbach Alpha, Composite Reliability (CR) and Average Variance Extracted (AVE)

Main construct	Cronbach alpha	CR	AVE
e-Training on Emotional Resilience (eTER)	0.946	0.961	0.623
e-Training on Cognitive Resilience (eTCR)	0.897	0.921	0.643
e-Training on Social Resilience (eTSR)	0.866	0.896	0.659
e-Training on Technical Skills Resilience (eTTSR)	0.929	0.945	0.579
e-Training on Physical Resilience (eTPR)	0.921	0.952	0.664
e-Training on Spiritual Resilience (eTSPR)	0.879	0.904	0.588
Employee Resilience (ER)	0.789	0.856	0.636

1.9 Discriminant Reliability

The Fornell-Larcker criterion was used to verify and confirm discriminant validity by assessing the extent to which each latent variable was distinct from other constructs (Chin 2010; Hair et al. 2017). Table 3 displays the results of this criterion.

Table 5-Fornell-Larcker Criterion

	eTER	eTCR	eTSR	eTTSR	eTPR	eTSPR	ER
eTER	0.859						
eTCR	0.432	0.836					
eTSR	0.325	0.269	0.786				
eTTSR	0.421	0.254	0.257	0.698			
eTPR	0.258	0.456	0.310	0.329	0.801		
eTSPR	0.236	0.290	0.296	0.299	0.323	0.712	
ER	0.249	0.325	0.315	0.319	0.259	0.406	0.765

1.10 The Heterotrait-Monotrait Ratio (HTMT)

Table: 6

	eTER	eTCR	eTSR	eTTSR	eTPR	eTSPR	ER
eTER	1.000						
eTCR	0.679	1.000					
eTSR	0.352	0.756	1.000				
eTTSR	0.128	0.279	0.579	1.000			
eTPR	0.232	0.227	0.316	0.600	1.000		
eTSPR	0.317	0.164	0.122	0.371	0.538	1.000	
ER	0.158	0.376	0.351	0.414	0.169	0.256	1.000

PLS-SEM Analysis-e-Training – Employee Resilience

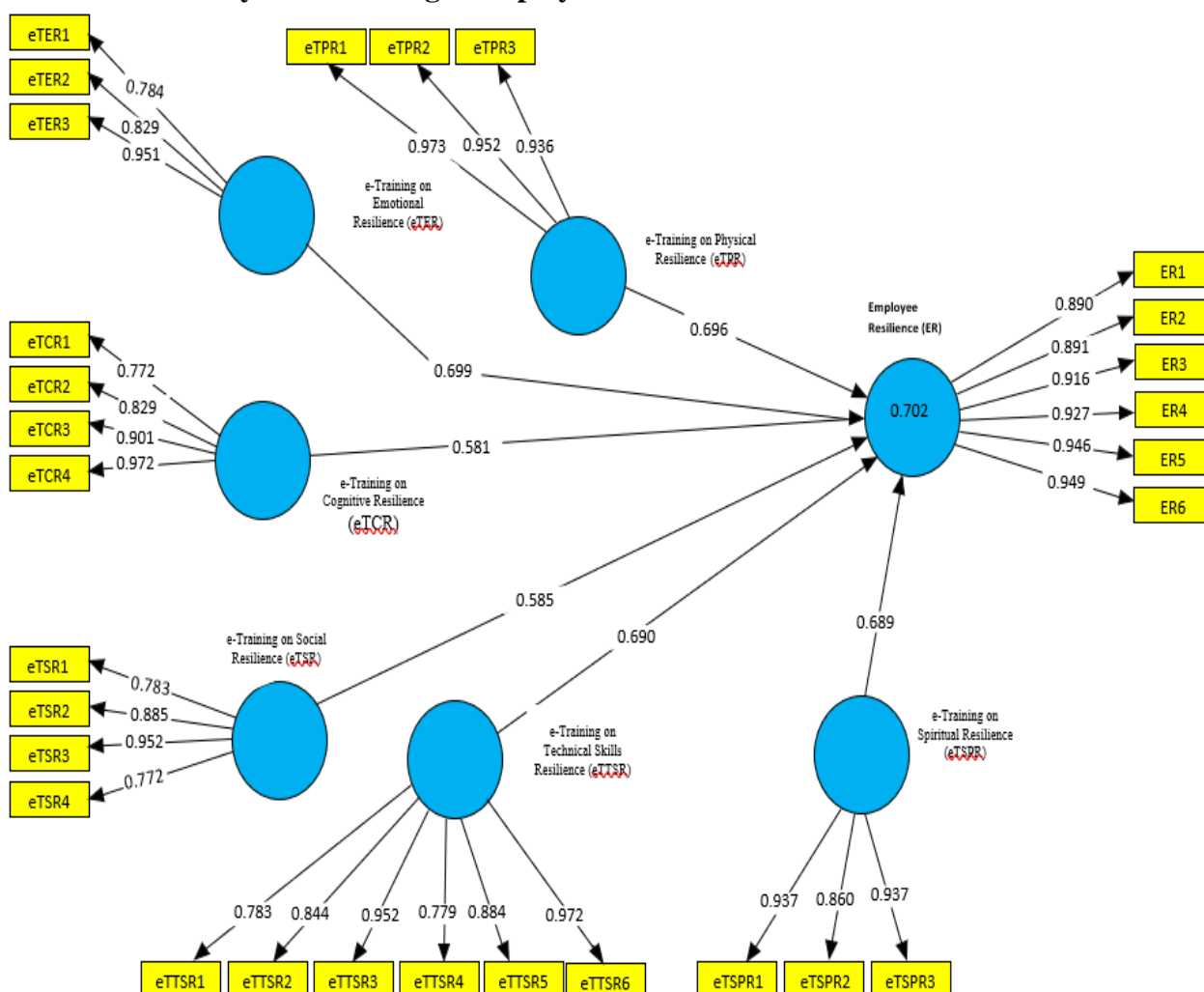


Fig.4

1.11. Testing of hypothesis

Hair et al. (2017) proposed evaluating the structural model by looking at the R^2 , beta (β), and corresponding t-values using a bootstrapping procedure with a resample of 5,000. They also suggested that, in addition to these basic measures, researchers report predictive relevance (Q^2) and effect sizes (f^2).

Table:7 Path-coefficient

Hypothesis Relationship	Path-coefficients
H1 = eTER \geq ER	0.699
H2 = eTCR \geq ER	0.581
H3 = eTSR \geq ER	0.585
H4 = eTTSR \geq ER	0.690
H5 = eTPR \geq ER	0.696
H6= eTSPR \geq ER	0.689

Table:8 Results of the hypothesis testing

Hypothesis Relationship	Std. β	Std. Error	t-value	Decision	P-value	R^2	Q^2	F^2
H1 = eTER \geq ER	0.632	0.025	9.756	Supported	0.000	0.702	0.579	0.239
H2 = eTCR \geq ER	0.576	0.048	7.149	Supported	0.000			0.476
H3 = eTSR \geq ER	0.378	0.018	12.169	Supported	0.000			0.435
H4 = eTTSR \geq ER	0.594	0.042	9.114	Supported	0.000			0.322
H5 = eTPR \geq ER	0.574	0.067	10.626	Supported	0.000			0.383
H6= eTSPR \geq ER	0.486	0.201	14.734	Supported	0.000			0.529

2. Results and Discussion:

The study's conclusions show that e-Training technology fosters technical staff members' resilience. As a result, technology advancements are regularly adapted to. The study's results also show that technical cadre personnel's training and experience are significant determinants of how well employees perform in the hydropower industry after completing e-Training courses. The e-Training can be given in a variety of ways, including virtual training, webinars, e-workshops, and online classes. These training courses can cover a variety of subjects, such as the advantages and drawbacks of contemporary technology, how to operate and maintain hydroelectric machinery in power plants, and how to employ precision technologies.

The HR Division successfully ran e-Training courses on technical and soft skills, yoga and health, and health under the direction of the IT Division. All of the senior and middle-level executives from the technical departments of the chosen hydroelectric power plants expressed their gratitude for the opportunity to participate in the webinars, which improved their abilities and prepared them for a pandemic in the years 2020–21. Situations that cause disruption in the corporate sector won't go away. There is nowhere to hide as technology

advances more quickly and the globe increasingly becomes a global economy. The environment in which we operate is undergoing continual change. When viewed from this angle, disruption situations are no longer risks that need to be managed but rather opportunities for growth and more collaboration. People who are highly skilled, technically knowledgeable, and intrinsically motivated show adaptability, problem-solving skills, innovative attitudes, and flexible team spirit for the organization. They can also handle disruptive situations on an individual and team level.

3. Limitation & Implication of Study

There is no research on building technical staff's resilience levels in Himachal Pradesh's hydroelectric power industries. Through the delivery of e-Training on technical skills and soft skills, employee resilience to adapt to the latest technologies has increased, resulting in the ability to handle disruptive situations with confidence. The current investigation will increase understanding of the topic. The results of the current study show that providing employees with e-Trainings on technical topics results in improved technical knowledge, balanced and effective performance, and the flexibility to adjust to technical changes in disruptive situations. The results of the current study will undoubtedly contribute to a better understanding of how creating effective e-Training topics and fostering teamwork among team members and an organization may lead to effectively thriving disruptive situations and long-term organizational growth.

4. Findings

Technical staff members have asked for their understandings, thoughts, experiences, and comments on the effectiveness of the e-Training programs. The majority of their responses revealed that they had acquired the technical know-how, soft skills, and most recent information on machinery and technology necessary to successfully operate a power plant through e-Training programs.

The employees working for Power Plant both in technical and non-technical trades have attended various e-Training programs, viz., Functional, Technical, Hydro Power/Solar Power/Wind Power/Renewable Energy, HR, HRD, Yoga, Health & Lifestyle, IT, knowledge, etc. Due to disruption situation because of pandemic, traditional training method was not adopted. Power plant adopted e-Training methods. The virtual training programs were attended by technical and non-technical employees across Power Plant in different cadres through Desktop Computers/Laptops, Mobiles through Zoom, etc. The programs on Hydro Power, Solar, Cyber Security, Leadership, Motivation, Yoga, Health & COVID-19 pandemic, Work Life Balance, Happiness through Yoga, Stress Management, etc., The study revealed that Senior Management, Management, Executives/Non-Executives both in technical and non-technical trades and women employees benefited by attending virtual training programs. Positively e-Trainings enhanced Knowledge levels of all the employees.

Organizations can successfully thrive in COVID-19 pandemic and other disruption scenarios by establishing e-Training programs on a variety of topics, including technical and soft skills, organizational behavior, etc. The study adds to our understanding of how workforces might improve their knowledge by adopting positive attitudes. The study was done in Himachal Pradesh, India may contribute in the field for furtherance.

5. Conclusion

This study will advance our understanding of technical personnel's capacity to adopt new technologies when obtaining skills through e-Training programs in Himachal Pradesh's hydroelectric power sector. to learn how they overcame difficulties and survived times of crisis. A study found that people who had received e-Training in resilience had made a significant contribution to the organization's sustained growth. The organizations' policies on ongoing e-Training and development initiatives are quite clear. The online platform gave educators and learners the chance to communicate and exchange expertise. The firm uses web-based learning, training platforms, and e-Training methodologies to ready its employees for situations that are always changing. The electronic-Training is becoming a genuine replacement for traditional training techniques.

6. Contributions of Study

The use of e-Training techniques can help businesses build up the resilience of their staff members so that they are always prepared, especially in the event of pandemic-like events. Internet-based technology was adapted by the technical workforces, which also indicated greater resilience. Also improved was the ability of the team to confidently handle crisis situations. They viewed dangers and crises as chances to minimize rather than dangers to be dealt with. This study shows that technical staff at all Power Plants with e-Training have higher levels of resilience and are more able to respond to market and technical changes and thrive in disruptions in a confident way.

Conflicts of Interest

“The author(s) declare(s) that there is no conflict of interest regarding the publication of this paper.”

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