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**The Mediating Role of Digital Learning Engagement in the Relationship between Training, Development, and Organizational Performance: Evidence from the Banking Sector of Pakistan**



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**Abstract:** *In the realm of the technology industry, where new systems and procedures are the backbone of organizational success, employee training, development play a crucial role in helping organizations achieve and maintain their success. The purpose of this study is to examine the relationship between training and development and organizational performance with the Mediating role of employee digital learning engagement. The study employed cross sectional design and a sample of 268 employees was taken from five commercial banks of Rawalpindi and Islamabad, Pakistan. Results indicate that both training and development have a significant and positive effect on organisational performance, with development activities having a greater effect. The pathways between these two constructs are partially mediated by employee digital learning engagement, thus substantiating the role of engagement as a psychological mechanism linking to both training resources and performance outcomes. This study will contribute to the existing literature on human resource development by combining the engagement theory with digital learning contexts in a developing economy. Results offer bank managers practical guidance on how to optimize their return on digital training investments.*

**Keywords:** Training and Development, Employee Performance, Digital Technology Platforms, Employee Training and Development.

## 1. Introduction

In today's business landscape, technological innovation, softer competition and changing employee expectations define the modern day. However, in this dynamic environment human capital has become one of the most important sources of sustainable competitive advantage (Garavan et al., 2021). As a result of this, training and development activities are no longer considered discretionary costs and become strategic investments for companies to ensure their effectiveness, employee retention,

and sustainability over time (Anwar & Abdullah, 2021).

It is remarkable to see how far Pakistan's banking industry has come in a decade in terms of digitalization. The State Bank of Pakistan (SBP) has done extensive efforts to encourage digital banking and commercial banks have invested a huge amount of money in digital infrastructure such as learning management systems and online training platforms (Gilani et al., 2024). But banks are still not able to produce tangible results on their staff's productivity and

organizational performance, even with these investments. There is a lingering disconnect between the adoption of digital training technologies and the benefits that are anticipated (Khan et al., 2023).

Training involves planned and organized activities designed to improve specific knowledge and skills that are related to the job, and are usually short term in nature. Development, on the other hand, involves long-term-type activities like mentoring, career planning, leadership preparation, etc., that helps develop adaptive ability to future careers (Armstrong, 2020; Noe, 2013). Although some studies have found that these human resource practices are positively associated with the performance of organizations (Elnaga & Imran, 2013; Said et al., 2022; Yimam, 2022), the exact mechanisms by which digital training results in the performance of an organization are not fully understood, especially in Pakistan.

Given this, the research aims to fill the gap by introducing the concept of employee digital learning engagement as a mediating variable. Engagement, which is the psychological and behavioral connection between training resources and performance outcomes, is classified as active, motivated, and persistent engagement with the technology-based training that is required for technology-mediated learning content (TMLC) (Fredricks et al., 2019; O'Brien et al., 2022). Motivated students are likely to use new knowledge in the workplace, work through challenging content and look for further developmental opportunities. Even good training designs can fall flat if things are not engaged in or applied to the work.

**The specific research questions guiding this study are:**

1. How employee training effects on the performance of the banking organization in Pakistan?
2. How does the employee development affect the performance at work in the Pakistan banks?
3. Do employees' digital learning involvement (DLI) play a role in bridging the gap between training and organizational performance?

4. Is there an interaction between development and organisational performance via employee digital learning engagement?

This study contributes to the field in three ways by answering the above questions. First, an empirical test of a mediation model including the digital learning engagement in the context of developing country banking was introduced to extend previous studies. To extend previous studies, first, an empirical test of the mediation model on digital learning engagement in developing country banking was introduced. Secondly, it offers Pakistani banking managers data that will help them develop digital training programs. Third, it helps to further the theory of workplace learning through the use of engagement theory.

## **2. Literature Review**

### **2.1 Theoretical Framework**

The following are two complementary theories that have been drawn upon in this study. Bandura (1986) formulated Social Cognitive Theory (SCT), which suggests that learning takes place when Personal Factors, Behavioural Factors and Environmental Factors interact. In a digital learning environment, attitudes towards competence affect the interaction with materials and ultimately the acquisition of competencies as well as the future actions of employees. This triadic reciprocal determinism offers a powerful framework for explanation of the relationship between the training and development activities and the resulting behavioral and/or organizational effects.

An alternative perspective is provided by the Job Demands - Resources (JD - R) model (Bakker & Demerouti, 2017). According to this model, job resources such as training opportunities, developmental support, and technological infrastructure act as a protective factor to mitigate the negative impact of job demands and at the same time help to develop positive job engagement. People respond positively to seeing their organization invest in them; they work harder, perform better, and are more willing to do their best. Based on this, job resources (job training and development) serve as a condition in the present study, digital learning engagement serves as a proximal phenomenon, and organizational performance as the ultimate dependent variable.

These theories, combined, suggest that training and development generate the resources to enable engagement, which in turn is the

mediator between resources and performance gains. Specific hypotheses are developed in the following subsections using this integrated framework.

## **2.2 Training and Organizational Performance**

Training is a formal procedure in order to acquire knowledge, skills and abilities that are relevant to a job (Armstrong, 2020). Training programs can help develop technical skills, decision making, and adapt to new requirements for the job (Hughes et al., 2021). Companies which invest systematically in training report better outcomes in terms of productivity, quality indicators and customer satisfaction.

A review of the previous research (in this case, meta-analytical evidence) indicates a positive correlation between training and organizational performance. Garavan et al. (2021) metaanalyzed a number of studies and found that training interventions exhibit moderate to large effects on performance, depending on the nature of the training type, delivery and organizational support. For banking specifically, training has been correlated to the quality of the customer service, efficiency in operations, and risk management capability (Yimam, 2022; Said et al., 2022). Training programs in developing countries have also proven to have a major impact on individual and organizational performance (Afroz, 2018; Motlokoa et al., 2018; Hinaï & Al Harrasi, 2022).

According to Gilani et al. (2024) in a banking environment, continuous training and development are essential to cope with the changes in the environment, but the implementation of the continuous training and development in Pakistani banks is not free from hurdles, which affect the effectiveness of the continuous training and development. In a similar fashion, the Pakistan Social Sciences Review (2021) claimed that effective training, development and performance efforts lead to enhanced job performance, but the frequency of training in many institutions is still quite low. Even with these disadvantages, the evidence from the plethora of research indicates a positive relationship. Accordingly:

**H1: Employee training has a positive and significant impact on organizational performance.**

## **2.3 Development and Organizational Performance**

Training is directed towards immediate job needs, whereas development is involved with long-term growth activities that enable the employees to take on new roles (Noe et al. 2013). Examples of development initiatives are mentoring, job rotation, leadership development track, tuition reimbursement, and support for professional certification. These activities indicate organizational interest in employees' development, which increases their sense of loyalty and motivation, and their discretionary effort.

For both theory and practical reasons, it is important to distinguish between training and development. Development investment usually takes a long time to maturity, resulting in adaptive capacity which allows organizations to cope with the environmental changes (Anwar & Abdullah, 2021). The study by Motlokoa et al. (2018) in the Lesotho banking sector found that the development programs were significant predictors of employee retention and advancement in the careers. Comprehensive development frameworks helped organizations' agility and change readiness, according to Ismael et al. (2021). Furthermore, development activities build human capital which is a key asset for an organisation as it helps the employee develop transferable skills that are relevant to the job beyond the specific job post they hold.

Hussain et al., (2023) in the banking industry of Pakistan found empirical evidence in favor of positive correlation between development activities and organizational performance with organizational learning capability in between. The results showed that the impacts of learning performance could be higher if the development investments were paired with supporting learning culture. In response to this evidence and the JD-R theory prediction that Job resources will help to drive performance through engagement, researchers make the following hypothesis:

**H2: Employee development has a positive and significant impact on organizational performance.**

## **2.4 The Mediating Role of Employee Digital Learning Engagement**

Digital learning engagement is the extent to which an employee is involved in the activities of digital learning (O'Brien et al., 2022). Engagement has several dimensions, including behavioral, emotional, and cognitive dimensions (Fredricks et al., 2019). The three components of behavioral engagement are participation, effort,

and persistence; emotional engagement are feelings of interest, enjoyment, and attitudes that are positive; cognitive engagement consists of strategic learning approaches, self-regulation, and deep processing of information. Engaged learners are not the recipients of training, but they actively participate in training; they generate mental effort, ask questions and apply training to real work situations.

There are several pathways that could be theorized consistent with SCT and JD-R that explain the mediating role of engagement. First, training and development provide resources that enable engagement with learning content: employees who are provided with high quality training and developmental resources are more likely to be able to engage with content. Second, engaged learners actively apply knowledge to workplaces, thereby connecting with performance improvement. Third, engagement creates positive feedback loops: those workers who feel engaged will be more likely to pursue further development opportunities, further improving their skills and ability.

These mediators are supported by empirical evidence. Khan et al. (2023) pointed out that the role of e-learning played a significant mediating role between training and employee satisfaction and motivation in the banking sector of Pakistan. Likewise, Hussain et al., 2023, have shown that a related construct - organizational learning capability had a mediating role between training and performance in service sector organizations in Pakistan. Recently, Bibi et al. (2026) found that compensation played a partial mediating role in the link between training and performance in Pakistani banks. Drawing on this line of thinking, the present study suggests digital learning engagement acts as a mediator:

**H3: Employee digital learning engagement mediates the relationship between training and organizational performance.**

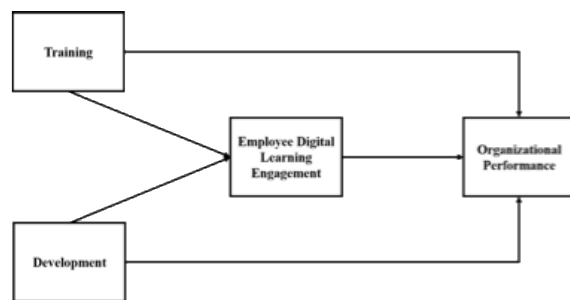
**H4: Employee digital learning engagement mediates the relationship between development and organizational performance.**

## 2.5 Conceptual Model

Figure 1 shows the conceptual model developed on the basis of the proposed theoretical model and the proposed hypothesis. Employee digital learning engagement acts as the mediator variable whereas training and development are the independent variables and organizational performance is the dependent variable. Two

direct effects (H1 and H2) and two indirect effects (H3 and H4) are predicted via the mediator.

**Figure 1: Conceptual Model**



## 3. Methodology

### 3.1 Research Design

The study used the quantitative, cross-sectional survey approach. The investigation was conducted through the positivist research paradigm, which focuses on the objective measurement, hypothesis testing and generalizable results. The deductive method was used and it was taken down from theory to facts.

### 3.2 Population and Sample

The target population included employees in 4 different job categories including operation, training, HR, and managerial positions in commercial banks of Rawalpindi and Islamabad city, Pakistan. Five banks three private and two public sector were randomly selected. Based on item response theory guidelines (DeVellis, 2017) 28 items were multiplied by 10 to reach a target sample size of 280, which is recommended by the guidelines for item response theory. A stratified random sampling was used, where strata were defined by bank, department and organizational level.

There were a total of 380 questionnaires, distributed both physically and online (Google Forms). Of the 268 questionnaires, there were 70.5% that were used in the analysis after filtering out incomplete and invalid responses. This size is larger than the minimum and is comparable with other studies on banking sector in Pakistan (Hussain et al., 2023; Bibi et al., 2026).

### 3.3 Instruments

A structured questionnaire consisting of 4 parts with 5-point Likert scale ranging from strongly disagree to strongly agree was used for data collection.

The items used for training were selected and adapted from Elnaga and Imran (2013) and

Yimam (2022) to measure training needs assessment, training design quality, training delivery effectiveness, and practices of training evaluation. Facet item: "My bank offers training regularly that is required for my job. Cronbach's  $\alpha = 0.904$ .

Seven items from Noe et al. (2013) and Ismael et al. (2021) were adapted to assess career development, career mentoring, leadership preparation, and career development support for professional growth. Sample item: "My bank contributes to my long-term career growth via mentoring and career planning." Cronbach's  $\alpha = 0.891$ .

The Employee Digital Learning Engagement was composed of seven items derived from Wang et al. (2015) and Fredricks et al. (2004) that captured behavioral, emotional, and cognitive aspects of engaging with digital learning platforms. Rubric: "Yes, I engage with digital training beyond required levels." Cronbach's  $\alpha = 0.912$ .

Organizational Performance: Six items adapted from Garavan et al., (2021) and Said et al., (2022) were used to measure perceived productivity, efficiency, quality, innovation, customer satisfaction, overall effectiveness. An example of a comparable item is: "Within the last year, our bank feels that its productivity has improved." Cronbach's  $\alpha = 0.879$ .

Internal consistency of all scales ranged from good ( $\alpha > 0.85$ ). The questionnaire was pretested with 30 banking industry professionals and some minor changes in the wording were made.

### 3.4 Data Collection Procedure

Data was collected during November 2024 to February 2025. After approval of institutions and permission from the banks, the questionnaires were sent out via two methods (paper and online - Google Forms). Participants were anonymity and confidentiality assured. Questionnaires that were completed were examined for completeness and consistency of responses.

### 3.5 Data Analysis

SPSS version 26 was used in analyzing the data. Analysis was done in four stages:

1. Descriptive statistics and reliability (Cronbach's  $\alpha$ ) were used.
2. Finding the mode of the data
3. System cross classification to analyze the overall pattern (H3)

4. The Baron and Kenny four step approach to mediation analysis and Sobel test (H3, H4) was subsequently used.

All the assumptions of parametric testing (normality, linearity and homoscedasticity) were checked and met. There was no evidence of any multicollinearity issues (variance inflation factor  $< 2.5$ ).

## 4. Results

### 4.1 Demographic Characteristics

The demographic profile of the 268 respondents is given in Table 1. The sample included 166 males (61.9%) and 102 females (38.1%). The largest age group was 35-44 years (41.0%), followed by 25-34 years (35.8%). Most of them (67.5%) earned graduate degrees. The majority of respondents (46.3%) had 6 to 10 years of experience in banking, with operational, supervisory, and managerial level occupations accounting for 40.3%, 34.0%, and 25.7%, respectively. The distribution is fairly representative of the banking population in Rawalpindi and Islamabad.

**Table 1: Demographic Characteristics of Respondents (N = 268)**

| Variable  | Category     | Freq. | %    | Variable   | Category    | Freq. | %    |
|-----------|--------------|-------|------|------------|-------------|-------|------|
| Gender    | Male         | 166   | 61.9 | Experience | 1-5 years   | 84    | 31.3 |
|           | Female       | 102   | 38.1 |            | 6-10 years  | 124   | 46.3 |
| Age       | 25-34 years  | 96    | 35.8 | Level      | 10 Plus     | 60    | 22.4 |
|           | 35-44 years  | 110   | 41.0 |            | Operational | 108   | 40.3 |
|           | 45 or older  | 62    | 23.1 |            | Supervisory | 91    | 34.0 |
| Education | Graduate     | 181   | 67.5 |            | Managerial  | 69    | 25.7 |
|           | Postgraduate | 87    | 32.5 |            |             |       |      |

### 4.2 Descriptive Statistics and Reliability

The means, standard deviations and Cronbach's alpha values for all the study variables are shown in Table 2. The mean scores ranged between "development" (with mean scores of 3.58) and "digital learning engagement" (with the mean scores of 3.85), which means that there was a moderate to strong agreement with the items of the scales. The standard deviations ranged from 0.68 to 0.80, indicating adequate variability of responses. This indicates acceptable internal consistency as Cronbach's alpha coefficient for all scales was above the 0.70 standard.

**Table 2: Descriptive Statistics and Reliability**

| Variable                    | Items | Mean | Standard Deviation | Cronbach's Alpha |
|-----------------------------|-------|------|--------------------|------------------|
| Training                    | 8     | 3.71 | 0.76               | 0.904            |
| Development                 | 7     | 3.58 | 0.80               | 0.891            |
| Digital Learning Engagement | 7     | 3.85 | 0.72               | 0.912            |
| Organizational Performance  | 6     | 3.69 | 0.68               | 0.879            |

### 4.3 Correlation Analysis

Table 3 shows the Pearson correlation coefficients between the variables of the study. All bivariate correlations were positive and significant at the  $p < 0.01$  level. The correlation between training and organizational performance was positive and its level was known as moderate,  $r = 0.392$ . The performance of the organization was correlated with the development ( $r = 0.447$ ). The relationships between digital learning engagement and training, development, and organizational performance are positive. The relationships between digital learning engagement and training, development, and organizational performance are positive, with respectively  $r = 0.341$ ,  $r = 0.398$  and  $r = 0.513$ . The directions of the correlations are also in the expected direction and moderate in size, providing support for further hypothesis test.

**Table 3: Pearson Correlation Matrix**

| Variables                   | 1       | 2       | 3       | 4     |
|-----------------------------|---------|---------|---------|-------|
| Training                    | 1.000   |         |         |       |
| Development                 | 0.358** | 1.000   |         |       |
| Digital Learning Engagement | 0.341** | 0.398** | 1.000   |       |
| Organizational Performance  | 0.392** | 0.447** | 0.513** | 1.000 |

#### 4.4 Hypothesis Testing - Direct Effects (H1 and H2)

This means that H1 and H2 are the hypotheses being tested. So, the hypotheses being tested are H1 and H2, in this case.

To test the H1 and H2, multiple regression analysis was used. The independent variables in terms of training and development were given as independent variables and organizational performance was the dependent variable. The model was statistically significant ( $F(2, 265) = 61.84$ ,  $p < 0.001$ ) and explained 31.8% of the variance in organizational performance ( $R^2 = 0.318$ , Adjusted  $R^2 = 0.312$ ).

The regression coefficients for the regression models are shown in Table 4. The findings of the training supported H1 as there was a positive and significant relationship between training and organizational performance with a coefficient of  $\beta = 0.307$  ( $p < 0.001$ ). Development also had a positive and significant effect ( $\beta = 0.421$ ,  $p < 0.001$ ) in favour of H2.

Importantly the standardized coefficient for development was significantly greater than for training, suggesting that development activities have a greater effect on organizational performance than task-oriented training. The pattern is similar to the theory on the distinction

between short term skill acquisition (training) and long-term capacity building (development).

**Table 4: Multiple Regression Results (Direct Effects)**

| Predictor   | B     | SE B  | $\beta$ | t    | p      | VIF  |
|-------------|-------|-------|---------|------|--------|------|
| Constant    | 1.246 | 0.213 |         | 5.85 | < .001 |      |
| Training    | 0.298 | 0.054 | 0.307   | 5.52 | < .001 | 1.15 |
| Development | 0.367 | 0.052 | 0.421   | 7.06 | < .001 | 1.15 |

Note.  $R^2 = .318$ , Adjusted  $R^2 = .312$ ,  $F(2, 265) = 61.84$ ,  $p < .001$ .

#### 4.5 Mediation Analysis (H3 and H4)

The four-step Baron and Kenny (1986) mediation testing procedures, along with Sobel tests of significance for both possible indirect effects, were followed for mediation models (H3 and H4). There are four prerequisites to mediation:

1. Relationship between the independent and dependent variable should be sufficiently strong.
2. The independent variable should have a strong predictive power of the mediator.
3. The mediator should be a significant predictor of the dependent variable in the model, while controlling for the independent variable.
4. The influence of the independent variable on the dependent variable should be diminished after controlling for the mediator.

All conditions met. Training and development were each significant predictors of organizational performance (Condition 1) as reported in Section 4.4. Training and development also predicted the mediator (digital learning engagement) (Condition 2) as can be seen in Table 5. When all other factors were held constant, including training and development, the mediator was the significant predictor of organizational performance ( $\beta = 0.387$ ,  $p < 0.001$ ) (Condition 3). The addition of the mediator to the regression model also led to some reduction in the coefficient of training and development but it remained significant, which suggests partial mediation (Condition 4). Training and development both had a proportion of total effect mediated of 39.1% and 33.3% respectively.

**Table 5: Mediation Analysis Results**

| Path                                     | Effect Type                      | $\beta$  | Sobel z | Mediation % |
|------------------------------------------|----------------------------------|----------|---------|-------------|
| Training → Organizational Performance    | Direct effect (without mediator) | 0.307*** |         |             |
|                                          | Training → DLE                   | 0.341*** |         |             |
|                                          | DLE → Performance                | 0.387*** |         |             |
|                                          | Direct effect (with mediator)    | 0.187**  | 4.52*** | 39.1        |
| Development → Organizational Performance | Direct effect (without mediator) | 0.421*** |         |             |
|                                          | Development → DLE                | 0.398*** |         |             |
|                                          | DLE → Performance                | 0.387*** |         |             |
|                                          | Direct effect (with mediator)    | 0.281*** | 5.28*** | 33.3        |

*Note.* DLE – Digital Learning Engagement;  $\beta$  – standardized coefficients. \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ , N = 268.

Both indirect effects were found to be significant by Sobel tests, for training ( $z = 4.52$   $p < 0.001$ ) and development ( $z = 5.28$   $p < 0.001$ ). These findings justify hypotheses of H3 and H4 as employee digital learning engagement partly-serves as the mediator in the relationships between training and development, and between employee digital learning, and organizational performance.

#### 4.6 Summary of Hypothesis Testing

Table 6 presents a summary of the results of the hypothesis testing. The four hypotheses have all been supported. The direct effects were beneficial and significant, and the influence of development was greater than that of training. Positive and significant mediation effects were also observed, and meaningful proportions were accounted for by digital learning engagement.

**Table 6: Summary of Hypothesis Testing Results**

| Hypothesis | Path                            | Result                | Standardized (Direct/Total Effect) $\beta$ | Standardized (Indirect Effect) $\beta$ | Support   |
|------------|---------------------------------|-----------------------|--------------------------------------------|----------------------------------------|-----------|
| H1         | Training Performance →          | Positive, significant | 0.307***                                   | —                                      | Supported |
| H2         | Development Performance →       | Positive, significant | 0.421***                                   | —                                      | Supported |
| H3         | Training → DLE → Performance    | Partial mediation     | 0.307*** (Total)                           | 0.120***                               | Supported |
| H4         | Development → DLE → Performance | Partial mediation     | 0.421*** (Total)                           | 0.140***                               | Supported |

## 5. Discussion

### 5.1 Interpretation of Findings

This study sought to understand the relevance of training and development to organizational performance in the Pakistani banking industry with digital learning engagement of employees as a mediator. The results validate all four hypotheses and extend the current body of literature in a few key respects.

Training and organizational performance (H1). The results revealed that training has a significant positive effect on organizational performance ( $p < 0.001$ ;  $\beta = 0.307$ ) which is

consistent with previous studies conducted in developed and developing countries (Elnaga & Imran 2013; Yimam, 2022; Said et al., 2022). Training enhances task related performance, operational efficiency and service quality, directly impacting their performance. The effect size was moderate, however, indicating that training is not enough to achieve significant performance improvement. Content relevance, delivery quality, and transfer climate are some of the potential obstacles in a Pakistani banking context where digital transformation is still in progress (Gilani et al., 2024). The partial mediation finding suggests that part of the effects of training is mediated not by acquisition of skills but by engagement with training.

Development and Organisational performance (H2). It is noteworthy that the relationship coefficient ( $\beta$ ) for development is greater than that of training, 0.421 to 0.307. It means that mentoring, career planning, leadership development and certification programs yield higher organizational returns when measured over the long term as opposed to short-term training on skills. This trend corresponds to a general human capital theory (Becker, 1964) that suggests general human capital investment yields wider and longer-term benefits in a variety of job settings. Development activities that enhance adaptive capacity could be especially beneficial in Pakistan's dynamic banking environment, characterized by frequent regulatory shifts, technological advancements, and competitive pressures. Individuals with developmental support are better positioned to adapt to new problems, participate in the innovation process and be dedicated to the business objectives.

The mediating-role of Digital learning engagement (H3 and H4). This study's major theoretical contribution is the evidence that digital learning engagement is a partial mediator in both associations. Mediation proportions (39.1% for training; 33.3% for development) suggest that engagement is a significant channel for the linkage of training resources to performance outcomes. But mediation is just one way is important to be aware of. Training and development also has an impact on performance through skill development, as well as knowledge transfer and motivational processes besides engagement.

The partial mediation pattern implies that organizations can't assume that they should only use engagement driven interventions; it is important to have the right content and engage

the learner. Students who are engaged tend to persevere in the challenging material, transfer their learning to real world situations in the context of work, and engage in further learning experiences (Fredricks et al., 2019; O'Brien et al., 2022). But some skills can be learned even by a "passive acceptance" of the learning material. From an operational perspective, firms should strive to select training that is of high quality in design and to implement practices that are designed to get employees involved.

## **5.2 Contributions and Implications of the Study**

The following are three major theoretical contributions of this study. In the first place, it makes a fundamental contribution to the extension of Social Cognitive Theory (Bandura, 1986) to the context of digital workplace learning, because it explains that the engagement of employees is a self-regulatory mechanism that acts as the link between training and developmental activities and effectiveness. Employees who use digital learning platforms are more likely to have more positive beliefs about self-efficacy which will, in turn, contribute to better performance. The results also align with Bandura's notion of reciprocal determinism whereby training leads to participation and participation results in better performance, which in turn can lead to further participation and better performance, etc., warranting future longitudinal research to examine such a potential positive cycle.

Second, training and development were shown to be important job resources which have positive impact on employee engagement, supporting the Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2017). We hypothesized that digital learning engagement - defined as a specific type of work engagement - would buffer the impact of these resources on organizational performance. The extension of the JD-R framework to context-specific learning engagement compared to general engagement suggests that the framework is applicable to a variety of types of job resources and outcomes for engagement. Finally, it is consistent that development has a stronger effect than training in terms of the JD-R, since more extensive resources lead to more extensive engagement and performance.

Third, the study is significant because of its contribution to the scanty but rapidly expanding body of literature pertaining to digital learning environments in developing country

environments, specifically in the banking sector in Pakistan. The overall mechanisms are similar to those observed in more developed contexts, but the partial mediation effects suggest that there were contextual differences. The penetration of digital learning platforms may be affected by a number of factors in Pakistan including inequities in digital infrastructure and varying levels of digital literacy amongst employees. This indicates that the engagement processes can vary from context to context and future studies could focus on other factors that could moderate engagement processes, like digital literacy, technological access, or organizational culture.

Practical implications are pertinent. Digital learning engagement not only should be measured and managed as a key performance indicator but it should be done systematically. Emotional engagement (satisfaction, interest, etc.) and cognitive engagement (use of learning, strategic thinking, etc.) should be evaluated, with learning management systems and assessments every so often providing a more comprehensive picture of employee engagement.

Also, banks should strike a balance between the resources allocated to training and development: while training has a positive impact on performance, development has a greater impact. Longer-term development opportunities like mentoring, career planning, leadership pipelines and professional certification should be emphasized along with shorter term training opportunities. Moreover, digital learning platform should include interactive content and gamification, simulations, and customizable learning paths to actively improve engagement. Such features should supplement, not supplant, quality content.

In the Pakistani context where the level of digital literacy among employees varies, organizations should also render digital literacy support to help employees to take full advantage of the learning platforms. This can encompass simple technical training, continuous technical support, and intuitiveness of the system design. Last but not least is the need for developing a robust learning culture. Support from leaders, celebrating learning successes, allowing for protected time to learn and embedding learning into employee performance management can have a positive impact on employee engagement. Employees are more inclined to be involved in digital training initiatives when they believe that it is valued and rewarded (Hussain et al., 2023).

## 6. Conclusion and Recommendations

### 6.1 Conclusion

The purpose of this study was to explore how training and development are affecting organizational performance among banking sector in Pakistan using the mediating variable digital learning engagement of the employees. This study was based on the data collected from 268 employees of five commercial banks in Rawalpindi and Islamabad and three major conclusions were formed.

First, both training and development have a positive and significant impact on organizational performance. A higher ratio of development activities have an impact on performance returns, indicating that long term capacity building offers higher performance returns than task focused training. Training banks will likely be more successful than those that mentor employees, lead the way, plan for careers, and invest in employee professional development.

Second, the relationship between employee digital learning engagement fully mediates both relationships. Research has explained about one-third to two-fifths of the total effects with the models of engagement, suggesting that the training and development resources have effects on the performance outcomes through psychological and behavioral mechanisms of engagement. But mediation being partial does indicate that this isn't the only approach, as there is also direct skill acquisition and other approaches.

Third, it advances theory to the context of digital learning in the workplace in a developing economy. The results found that SCT and Job Demands-Resources model is a very good foundation for understanding the effect of training resources, which support the applicability of SCT and Job Demands-Resources model in the banking sector of Pakistan.

Finally, organisations cannot achieve improved performance solely by training the content and how it is delivered. Building engagement of learning employees on a digital learning application is a key step in ensuring that training efforts pay off in terms of performance. Banks using high-quality training and high-engagement features will likely observe a greater level of performance when delivering a combined effort than banks concentrating on one or the other.

### 6.2 Recommendations

Following your results, four specific suggestions are made:

1. Systematically collect digital learning engagement data. In addition to completion rates, banks should monitor behavioral, emotional, and cognitive metrics, including logins, module completion, time spent, survey results, feedback, and self-reported application and strategic learning. Therefore, these metrics should help design training and allocate resources.
2. Increase development activities in comparison to training. Both provide positive effects of development, but more pronounced with the latter. At the very minimum, banks must invest as much as they do in short-term skill training into long-term development (mentoring, career planning, building leadership pipelines, professional certifications). Leadership needs to be explicit that developing the business is a strategic priority.
3. Create interactive and engaging online materials. Passive viewing of videos and reading of documents will not likely lead to sustained engagement. Banks must develop games, scenario-based simulations, discussion forums and peer feedback, and offer customized learning pathways. Relevance of the content and its practical application are essential for captivating audiences.
4. Provide digital literacy support. Digital literacy may hinder engagement in the Pakistani banking context due to differences in levels of digital literacy. There can be varying degrees of digital literacy which limits engagement in the Pakistani banking context. Basic technology skills should be provided as an available course at the bank, have accessible technical support and have simple interface designs for the platforms. This type of assistance can be especially useful for staff who are less likely to have significant experience with digital media.

### 6.3 Limitations and Future Research Directions

The results of this study provide future research opportunities to overcome the limitations of the present study. To support causal inferences and a study of the temporal evolution of engagement and performance, it is necessary to use a longitudinal design. Common method bias concerns would be mitigated by objective performance data and several sources of respondents. More replications across other

Pakistani cities, provinces and sectors will increase generalisability. The variables that are candidates for analyzing moderators (e.g., digital literacy, organizational culture, leadership support) and mediators (e.g., self-efficacy, knowledge transfer, goal commitment) should also be included in future studies to have a more comprehensive understanding of the dissemination of training and development to performance outcomes.

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