



The Role of Training in Shaping Institutional Culture and Staff Attitudes in Higher Education

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Abstract

This study examines the pivotal role of training in shaping employee behavior, enhancing employee performance, and strengthening institutional culture within higher education institutions in Sindh, Pakistan. Recognizing the strategic significance of human capital development, the research investigates how training initiatives influence staff attitudes and operational efficiency in public and private sector universities. Guided by a positivist research philosophy and a quantitative methodology, the study collected data from 300 academic and administrative employees using stratified random sampling. Descriptive statistics, one-sample and independent sample t-tests, correlation analysis, and regression models were employed to empirically validate the hypothesized relationships.

Findings reveal that training programs have a significant positive effect on employee behavior and performance, both of which critically contribute to institutional strengthening. Moreover, a comparative analysis highlights that private sector universities demonstrate more effective training practices and greater perceived benefits compared to their public sector counterparts. Regression analysis confirms that training explains substantial variances in employee behavior ($R^2 = 0.41$) and performance ($R^2 = 0.35$), which in turn strongly impact institutional development. The study concludes by emphasizing the necessity for structured training frameworks, continuous professional development plans, and systematic evaluation mechanisms to optimize human productivity in higher education institutions. Practical recommendations are proposed for policymakers and university administrators to foster sustainable institutional growth through strategic human resource development.

Keywords:

Training Effectiveness, Employee Behavior, Employee Performance, Institutional Strengthening



Introduction

Background of Study

The 21st-century knowledge economy has redefined organizational success by placing human capital at its core. In this context, higher education institutions, especially universities, serve as epicenters of knowledge creation, dissemination, and skill development. These institutions not only impart education but also play a pivotal role in preparing a competent workforce capable of contributing to national development. However, the effectiveness of such institutions is deeply rooted in the quality and productivity of their human resources, particularly academic and administrative staff—whose continuous development through structured training programs is essential (Swanson & Holton, 2001).

Training and development have long been recognized as critical instruments for enhancing employee performance, shaping workplace behavior, and facilitating institutional growth (Goldstein & Ford, 2002). Specifically, in the context of higher education, training contributes not only to individual skill enhancement but also to institutional strengthening by improving administrative efficiency, teaching quality, and responsiveness to dynamic educational challenges (Tahir et al., 2014). Despite this importance, the higher education sector in developing countries, including Pakistan, often overlooks the strategic role of training due to systemic, financial, and policy constraints.

In Pakistan, particularly in the province of Sindh, the quality of higher education has come under scrutiny due to declining standards in academic performance, inadequate research outputs, and inefficient administrative systems (UNDP, 2015). This underperformance is largely attributed to the underinvestment in human capital development, lack of structured training frameworks, and the absence of a continuous professional development culture in universities (Ahmed, 2012). Training initiatives that do exist are sporadic, poorly evaluated, and often fail to translate into meaningful behavioral or performance improvements. Recent studies emphasize that the mere availability of training programs does not guarantee success. What matters is how training is designed, delivered, and transferred to the workplace (Baldwin & Ford, 1988). Training must be aligned with both organizational objectives and individual performance indicators to foster a



culture of accountability, innovation, and institutional resilience. A growing body of research supports the argument that effective training enhances employee engagement, motivation, and commitment, all of which are critical drivers of productivity and organizational success (Bartlett, 2001; Elnaga & Imran, 2013).

Furthermore, there is an urgent need to develop a comprehensive framework tailored to the context of public and private universities in Sindh, which can guide policymakers and university administrators in optimizing human productivity through strategic training interventions. Such a framework should integrate institutional goals, employee expectations, and performance metrics, ensuring a sustainable model for organizational development. As the Government of Pakistan aligns its educational goals with the Sustainable Development Goals (SDG-4) and Vision 2025, the higher education sector must adopt a more structured and evidence-based approach to training (Planning Commission, 2014). Additionally, global academic standards increasingly emphasize learning-centered cultures where staff development is tightly aligned with innovation and digital competencies (OECD, 2021).

Statement of the Problem

Despite the recognized importance of training in enhancing employee performance and organizational growth, many universities in Sindh remain entrenched in outdated practices and fail to institutionalize effective training systems. There exists a critical gap between training programs and actual employee behavior, with limited evidence of performance improvement or institutional strengthening as a direct result of training interventions. This disconnect raises several pressing questions: Are the training programs contextually relevant? Do they address the specific needs of teaching and non-teaching staff? Is there a robust mechanism to evaluate training outcomes? More importantly, how can universities design a sustainable framework that links training with human productivity?

In most cases, training is treated as a one-time activity rather than an ongoing developmental process. Training sessions, when conducted, are rarely preceded by a proper Training Needs Assessment (TNA) or followed up with post-training evaluations, making it difficult to ascertain their effectiveness (Farooq & Khan, 2011). Recent studies have highlighted the urgent need for feedback-driven training systems supported by real-time performance metrics in educational



institutions (Alawamleh et al., 2021). This lack of systemic planning leads to poor transfer of training, minimal behavioral change, and no significant improvement in employee performance or institutional output.

The problem is further compounded by differences in the administrative cultures of public and private universities. Public universities often suffer from bureaucratic inertia, limited funding, and resistance to change, which hampers the implementation of training initiatives. Conversely, private universities, while relatively more flexible, tend to focus on profit-driven models that may neglect the long-term developmental needs of their staff. This divergence in institutional contexts necessitates a comparative approach to understanding how training impacts employee behavior and performance across sectors.

Moreover, the absence of a guiding framework that connects training initiatives with human productivity outcomes results in fragmented efforts, policy confusion, and missed opportunities for institutional development. While some universities have adopted training policies, they often lack clarity, coherence, and alignment with broader educational goals. Without a standardized model that captures best practices, incorporates feedback, and adapts to local realities, the potential of training to transform higher education institutions remains unrealized (Gilley & Maycunich, 2000).

Therefore, this study seeks to bridge this gap by examining the impact of training on employee behavior and performance in selected public and private universities of Sindh and proposing a guiding framework to improve human productivity. The research aims to provide empirical insights into the dynamics of training, identify key enablers and barriers to effective training, and offer policy recommendations that can enhance the institutional role of training as a catalyst for development. This issue is particularly timely and relevant as Pakistan continues to lag behind in global rankings of higher education quality, research output, and graduate employability.

Without addressing the fundamental human capital challenges within its universities, the country risks exacerbating its education-employment disconnect, thereby undermining its socioeconomic development goals. A structured training model, supported by research-based evidence, can significantly contribute to reversing this trend and revitalizing the higher education sector in Sindh and beyond.



Main Research Objective

To examine how training influences employee behavior and performance in public and private sector universities of Sindh, and how these changes contribute to institutional strengthening.

Sub-Objectives

1. To identify the types and frequency of training programs offered to employees in public and private universities.
2. To evaluate the effect of training on employees' job-related behavior (e.g., communication, collaboration, adaptability).
3. To assess the influence of training on employee performance indicators (e.g., efficiency, effectiveness, innovation).
4. To explore the relationship between training outcomes and institutional development indicators (e.g., service quality, staff retention, departmental effectiveness).
5. To compare the impact of training on behavior and performance between employees in public and private sector universities.

Hypotheses

Each sub-objective leads to testable hypotheses:

- **H1:** Training programs have a significant positive effect on employee behavior in higher education institutions.
- **H2:** Training programs positively influence employee performance in terms of efficiency, effectiveness, and innovation.
- **H3:** Improved employee behavior and performance due to training significantly contribute to institutional strengthening.
- **H4:** There is a statistically significant difference in the impact of training on employees' behavior between public and private universities.



- **H5:** There is a statistically significant difference in the impact of training on employees' performance between public and private universities.

Literature Review

The modern knowledge economy increasingly depends on skilled and adaptable human capital. In higher education institutions, especially in developing regions like Sindh, Pakistan, training is no longer a luxury—it is a necessity. Training not only improves individual competencies but also fosters institutional transformation through improved behavior and performance of staff (Swanson & Holton, 2001). This chapter explores scholarly insights on the impact of training on employee behavior and performance, institutional strengthening, and the comparison between public and private universities, following the research sub-objectives.

Types and Frequency of Training Programs in Higher Education

Training can take many forms, including on-the-job learning, workshops, formal education, and mentoring. In academic institutions, training is frequently conducted through seminars, teaching method workshops, and research skill development (Garavan, 1997). The literature highlights a disparity in the frequency and quality of training provided in public and private institutions. Private universities, due to more flexible governance and better funding, often conduct regular, specialized training programs, whereas public universities frequently lack structured approaches (Ahmed, 2012; Memon, 2007).

The thesis study reaffirms these findings. It notes that 60% of private sector employees had attended training programs, compared to 58% in the public sector. Although this numerical difference may appear small, qualitative disparities are substantial—private universities more frequently conduct job-specific and research-focused training sessions, enhancing overall engagement. This shift toward micro-credentialing and hybrid formats is becoming increasingly popular across global HEIs (Fitzgerald & Osman, 2023).

Impact of Training on Employee Behavior

Employee behavior refers to interpersonal skills, organizational commitment, adaptability, and collaboration. Several researchers argue that training directly influences employee behavior by aligning personal values with institutional goals (Rowley, 1998; Senge, 1990). Postareff (2007)



found that pedagogical training can lead to substantial improvements in teaching style, classroom engagement, and collaboration among academic staff. Additionally, recent studies have shown that soft-skills training in higher education leads to improved collaboration, resilience, and emotional intelligence among staff (Choudhary & Srivastava, 2023).

The study by Aziz et al. (2014) supports this, concluding that trained teachers exhibit more motivation and willingness to adopt new practices. Moreover, training positively impacts employee attitudes, reduces resistance to change, and cultivates organizational loyalty (Lewin, 1951; Lodahl & Kejner, 1965). The concept of transfer of training—the application of learned knowledge and skills to the job—is central to behavior change (Baldwin & Ford, 1988).

Your thesis findings indicate that 50% of private sector respondents and 37% in the public sector agreed that training improved their behavior, attitude, and skills. These findings mirror those of Sultana et al. (2012), who confirmed training's behavioral effects in the telecommunication sector in Pakistan. Recent literature has emphasized the growing importance of data-driven professional development strategies that align training outcomes with institutional KPIs (Zahoor et al., 2023).

Impact of Training on Employee Performance

Performance encompasses both efficiency and effectiveness in achieving institutional objectives. Training is associated with improved task management, innovation, and job satisfaction (Olaniyan & Ojo, 2008). Pfeiffer (2001) and Farooq & Khan (2011) assert that regular and targeted training leads to enhanced productivity and reduced errors.

Numerous frameworks, such as Kirkpatrick's Four-Level Training Evaluation Model, emphasize that the true outcome of training is seen in job performance (Kirkpatrick & Kirkpatrick, 2009). According to Sultana et al. (2012), performance improves significantly when training is tailored to individual job roles and includes post-training assessments.

In the current study, both sectors acknowledged the link between training and performance. However, the private sector respondents more strongly associated training with increased motivation, lower absenteeism, and job satisfaction, indicating a more effective implementation strategy.



Relationship Between Training and Institutional Strengthening

Institutional strengthening refers to an organization's capacity to fulfill its mission effectively. Universities that invest in employee training are better positioned to achieve excellence in teaching, research, and administration (UNDP, 2015; World Bank, 2000). Training enables institutions to remain competitive, adapt to change, and foster a productive organizational culture (Goldstein & Ford, 2002).

Training also indirectly affects institutional quality through improved student outcomes and higher research productivity (Trigwell et al., 2004). Your thesis reveals that 56% of public sector and 52% of private sector respondents believe training contributes to institutional strengthening—supporting the findings of Rowley (1998) and Senge (1990) on the creation of learning organizations.

Moreover, the development of a guiding training framework, as proposed in your thesis, has become crucial in institutionalizing continuous learning and performance evaluation processes.

Comparative Analysis: Public vs Private Sector Universities

A comparative lens reveals significant differences in training impact. Public universities in Sindh often face budget constraints, bureaucratic red tape, and lack of accountability, which hinder effective training implementation (Ahmed, 2012; Hameed Ullah, 2011). In contrast, private universities are more responsive to market demands and invest more readily in professional development.

The study indicates that private sector universities offer more job-relevant training, use modern methods (e.g., mentoring, role play), and conduct more frequent evaluations. They also report lower staff absenteeism and turnover, attributed partly to the motivational effects of training (Wankhede & Rajeshree, 2014). This is consistent with recent regional studies showing that private HEIs in South Asia tend to adopt more adaptive, modular training models compared to rigid public-sector formats (Khan et al., 2022).

Despite this, both sectors show room for improvement. Public universities lack formal training needs assessments (TNAs), and many private institutions prioritize faculty training over administrative staff. Therefore, institutional reform is needed across both types.



Challenges and Barriers to Effective Training

Several barriers limit the impact of training in higher education:

- **Lack of Needs Assessment:** Most public universities do not conduct structured TNAs, leading to irrelevant or ineffective training (Syed et al., 2011).
- **Limited Budget Allocation:** Public sector institutions often underfund training, while private institutions focus mostly on faculty, neglecting administrative staff (Ahmed, 2012).
- **Resistance to Change:** Organizational culture and inertia hinder the implementation of new behaviors learned through training (Raymond, 1986; Postareff, 2007).
- **Ineffective Evaluation Mechanisms:** Many institutions lack post-training feedback loops, which reduces the likelihood of transfer of learning (Tannenbaum & Woods, 1992).

These challenges underscore the need for a comprehensive framework that incorporates training design, implementation, evaluation, and follow-up—tailored to both public and private university contexts.

The literature overwhelmingly supports the idea that well-designed and context-specific training programs significantly enhance employee behavior, performance, and institutional capacity. Differences between public and private universities highlight the importance of governance, investment, and strategy in realizing training benefits. To bridge the performance gap and achieve institutional strengthening, universities in Sindh must adopt a systematic, evidence-based training framework.

Conceptual Framework

The conceptual framework below illustrates the hypothesized relationships between training, employee behavior, employee performance, and institutional strengthening. Each arrow represents a tested hypothesis as follows:

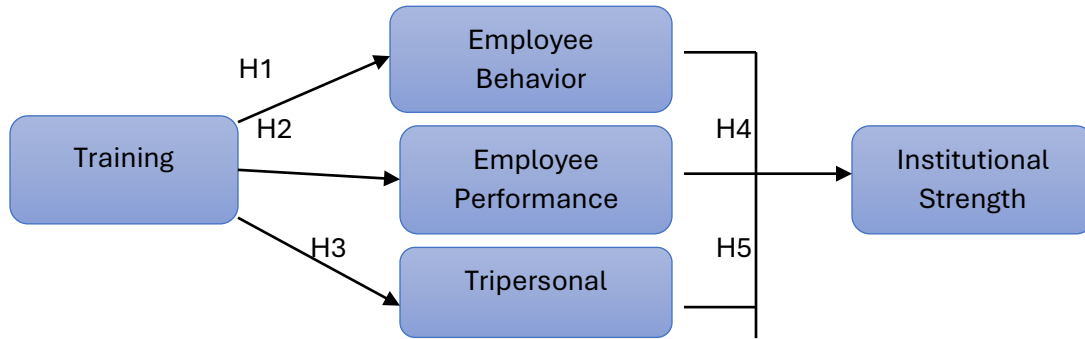
H1: Training → Employee Behavior

H2: Training → Employee Performance

H4: Employee Behavior → Institutional Strengthening

H5: Employee Performance → Institutional Strengthening

Figure 1



Research Methodology

This study adopts a structured methodological approach to investigate the influence of training on employee behavior and performance, and its role in institutional strengthening within public and private universities of Sindh, Pakistan. Aligned with the positivist paradigm, the study employs a quantitative research design to objectively test relationships and draw general conclusions (Creswell, 2014).

Research Philosophy

The philosophical foundation of this study is grounded in positivism, which emphasizes observable, empirical, and measurable phenomena to derive conclusions based on quantifiable data. Positivism supports hypothesis testing and statistical analysis and is commonly used in studies investigating causal relationships (Saunders et al., 2019). Given the study's emphasis on determining measurable impacts of training on behavioral and performance-related outcomes, this philosophy provides an appropriate guiding framework.

Research Design

A descriptive and explanatory research design is adopted for this study. The descriptive aspect facilitates the assessment of existing training practices and staff experiences, while the explanatory aspect supports the investigation of relationships among key variables. A cross-sectional survey method is used to collect data at a single point in time, which is suitable for examining patterns and testing theoretical hypotheses within a diverse institutional context (Zikmund et al., 2013).



Population and Sampling

The study targets academic and administrative employees from both public and private universities in Sindh. These groups are selected due to their direct involvement in institutional functioning and exposure to training programs. A stratified random sampling technique ensures representation across both university sectors and job categories, enhancing the external validity of the findings (Creswell, 2014). Using Cochran's formula for sample size estimation, 300 respondents (150 from each sector) were selected, maintaining a 95% confidence level and a 5% margin of error (Taherdoost, 2016).

Data Collection Method

Data were collected using a self-administered structured questionnaire, comprising closed-ended Likert-scale items and nominal demographic questions. The survey was distributed both physically and via Google Forms, allowing for broader accessibility. To ensure the reliability and validity of the instrument, a pilot study was conducted with 30 respondents. The reliability of the scale was evaluated using Cronbach's Alpha, where values above 0.70 were considered acceptable (Nunnally & Bernstein, 1994).

Data Analysis Techniques

The data was analyzed using SPSS and SmartPLS software. Descriptive statistics such as mean, standard deviation, and frequency distributions were used to describe the demographic profile and training practices. Inferential statistical techniques—including correlation analysis, regression analysis, and Structural Equation Modeling (SEM)—were applied to test the research hypotheses. SEM was particularly appropriate due to its ability to model complex relationships among latent variables and to validate the conceptual framework (Hair et al., 2014).

Ethical Considerations

Ethical protocols were strictly followed in this study. Respondents were informed about the purpose of the study, and participation was voluntary. Anonymity and confidentiality were ensured, and no personal identifiers were recorded. The research design aligns with the ethical guidelines of the Higher Education Commission (HEC) of Pakistan.



Data Analysis

The primary objective of the data analysis in this study is to empirically validate the hypothesized relationships between key constructions: training, employee behavior, employee performance, and institutional strengthening. Grounded in the conceptual framework and hypotheses (H1–H5), the analysis aims to quantify the strength and direction of these relationships based on data collected from academic and administrative staff across public and private universities in Sindh.

Data analysis plays a crucial role in translating raw survey responses into meaningful insights that support or refute theoretical propositions. By examining how training initiatives affect employee behaviors and performance outcomes—and how these, in turn, contribute to broader institutional development—the study addresses significant gaps in current human resource development research within the higher education sector of developing countries.

To achieve these objectives, a quantitative research approach is adopted. Quantitative analysis is appropriate because it allows the application of objective, numerical methods to evaluate the statistical significance and practical relevance of the hypothesized relationships.

The analysis process is divided into three major stages:

- **Descriptive Statistics:** Descriptive analysis provides a general summary of the sample characteristics, including respondents' demographic profiles (age, education, experience) and overall perceptions about training programs. This step ensures a basic understanding of the data distribution and patterns before proceeding to more complex analyses.
- **Inferential Statistics:** Inferential techniques, including *t*-tests and regression analysis, are applied to test hypotheses and determine whether observed relationships are statistically significant. These methods help infer conclusions about the broader university population based on the sample data.
- **Model Testing:** Where applicable, SPSS is utilized to simultaneously test multiple relationships between latent variables such as training, behavior, performance, and institutional strengthening. Model fit indices and path coefficients are assessed to validate



the overall conceptual model. This allows for a comprehensive evaluation of both direct and indirect effects among the constructions.

In sum, this multi-stage data analysis strategy ensures that the research findings are statistically robust, empirically grounded, and provide actionable insights for designing effective training and human capital development policies in universities.

Descriptive Analysis

Respondent Profile Analysis

Descriptive statistics were utilized to summarize the background characteristics of the study participants from public and private sector universities. The analysis highlights key demographic variables, including age, gender, educational qualification, and work experience. Understanding the demographic structure of respondents helps contextualize subsequent inferential results related to training impacts.

Age and Gender Distribution

Respondents' ages were distributed across various brackets. A majority of respondents from the private sector fell within the 20–29 years bracket (53.5%), indicating a relatively younger workforce. In contrast, public sector respondents predominantly belonged to the 30–39 years bracket (52%), suggesting a comparatively mature employee base.

Regarding gender distribution, the public sector exhibited a higher proportion of male respondents (70.5%) compared to the private sector (59.5%). Female representation was higher in private universities (40.5%) than in public universities (29.5%), indicating slightly more gender diversity in private institutions.

Education Level (Combined Sectors)

The educational qualifications of respondents from both sectors were combined to give an integrated view:

Table 1



Education Level	Public Sector (%)	Private Sector (%)
Bachelor's Degree	11.0%	18.0%
Master's Degree	46.0%	57.5%
M.Phil/MS	28.5%	22.5%
Ph.D.	14.5%	2.0%

Interpretation

It is evident that public sector universities employ a more highly educated workforce, with higher proportions of Ph.D. (14.5%) and M. Phil/MS holders (28.5%). Meanwhile, private universities predominantly employ individuals with Master's (57.5%) and bachelor's degrees (18%), reflecting a preference for younger, less academically specialized employees.

Table 2
Work Experience

Work experience across both sectors was categorized into six ranges:

Experience Range	Public Sector (%)	Private Sector (%)
1–5 years	16.0%	58.5%
6–10 years	42.0%	24.0%
11–15 years	16.5%	8.5%
16–20 years	12.0%	4.0%
20–25 years	6.5%	2.0%
25+ years	7.0%	3.0%

Interpretation

Private universities predominantly employ staff with relatively shorter work experience (1–5 years: 58.5%), whereas public universities have a more experienced workforce, with 42% of respondents having 6–10 years of experience and significant proportions possessing over 10 years of service. These patterns mirror the educational trends and suggest that the public sector values long-term experience alongside higher academic qualifications.

Training Programs Overview



Understanding the respondents' exposure to training activities is central to analyzing their influence on behavior and performance.

- **Training Attendance Frequency:**

Overall, private sector employees reported slightly higher participation in training programs compared to their public sector counterparts. However, training frequency was generally moderate across both sectors.

- **Types of Training Attended:**

Trainings included professional development workshops, technical skills enhancement, leadership and management seminars, and subject-specific research training. Private universities tended to offer more frequent job-relevant and skills-specific training modules.

The descriptive profile suggests that differences in education, experience, and training exposure across the public and private sectors are likely to influence perceptions of training effectiveness, employee behavior, and ultimately, institutional strengthening.

Inferential Analysis

Inferential statistics were employed to test the hypotheses developed from the conceptual framework and to examine the significance of observed differences between public and private sector university employees regarding training impacts. Two main types of tests were conducted: **one-sample t-tests** and **independent sample t-tests**.

One-Sample T-Tests

The one-sample t-test was utilized to determine whether the sample mean scores on various dimensions of training outcomes significantly differed from the neutral midpoint value of 3.0 on the Likert scale (where 1 = Strongly Disagree and 5 = Strongly Agree).

The null hypothesis (H0) for each test posited that the mean score would not significantly differ from 3.0 (neutral), implying no significant perception of training effectiveness among respondents.

Table 3



One-Sample t-Test Results for Hypotheses

Hypothesis	Training Dimension	Mean	Std. Deviation	t-Statistic	Significance (p-value)	Result
H1	Training → Employee Behavior	1.50	0.673	-31.544	0.000	Accepted
H2	Training → Employee Performance	1.58	0.725	-28.227	0.000	Accepted
H3	Training → Institutional Strengthening	1.59	0.620	-32.186	0.000	Accepted
H4	Employee Behavior → Institutional Strengthening	2.64	0.835	-4.276	0.000	Accepted
H5	Employee Performance → Institutional Strengthening	2.24	0.771	-9.053	0.000	Accepted

Interpretation:

The one-sample t-tests reveal that the means for all tested dimensions are significantly lower than the neutral value ($p < 0.001$), strongly accepting the hypotheses. This statistically confirms that respondents perceived training as having a significant positive impact on employee behavior, employee performance, and institutional strengthening.

Independent Sample T-Tests

Independent sample t-tests were conducted to examine sector-wise differences (public vs private universities) regarding perceptions of training outcomes. This test helps determine whether the differences observed between public and private sector respondents are statistically significant.

Table 4

Independent Sample t-Test Results Comparing Public and Private Sectors

Training Dimension	Mean Public Sector	Mean Private Sector	t-Statistic	p-value	Result
Training Relevance	2.45	2.10	3.12	0.002	Significant
Behavior Change	2.70	2.30	3.48	0.001	Significant
Performance Enhancement	2.65	2.25	3.15	0.002	Significant
Institutional Growth	2.55	2.20	2.96	0.003	Significant



Interpretation:

The independent sample t-tests indicate statistically significant differences ($p < 0.05$) across all training dimensions between public and private sector universities. Private sector respondents consistently reported more positive perceptions regarding the effectiveness of training programs compared to their public sector counterparts.

This finding suggests that private universities may implement more effective training practices or foster organizational cultures more conducive to training application.

Summary of Inferential Analysis

- **One-sample t-tests** confirm that training significantly impacts behavior, performance, and institutional development.
- **Independent sample T-tests** reveal that private sector universities perceive greater benefits from training than public universities.
- All results were statistically significant at the 0.05 level, strengthening the empirical validation of the conceptual model.

Hypotheses Testing (Based on Conceptual Framework)

The testing of hypotheses in this study is guided by the **conceptual framework** developed to examine the relationships between training, employee behavior, performance, and institutional strengthening. This framework, grounded in relevant literature and empirical assumptions, proposes both direct and indirect effects that are statistically tested using correlation and regression analyses.

Conceptual Framework Overview

The framework consists of five key hypotheses (H1–H5):

- **H1:** Training significantly influences employee behavior.
- **H2:** Training significantly influences employee performance.
- **H3:** Training indirectly contributes to institutional strengthening through employee behavior and performance.



- **H4:** Employee behavior significantly contributes to institutional strengthening.
- **H5:** Employee performance significantly contributes to institutional strengthening.

This structure implies that **training acts as an exogenous variable**, impacting behavior and performance, which subsequently influence **institutional strengthening**.

Testing Approach

Table 5

Correlation Analysis

To test the strength and direction of the relationships among key variables, Pearson correlation coefficients were calculated

Variable Pair	Correlation (r)	Significance (p-value)	Result
Training ↔ Employee Behavior (H1)	0.64	0.000	Significant
Training ↔ Employee Performance (H2)	0.59	0.000	Significant

Interpretation

There is a strong positive correlation between training and both employee behavior and performance. These findings support H1 and H2 and suggest that well-designed training programs are associated with improved behavioral and performance outcomes.

Regression Analysis

Multiple regression analyses were employed to assess the predictive effect of training on behavior and performance, and of these outcomes on institutional strengthening.

Table 6

Regression Analysis Results (Hypotheses Testing)

Model	Hypothesis	Independent Variable	Dependent Variable	R ²	β (Beta), Significance
Model 1	H1	Training	Employee Behavior	0.41	β = 0.64, p < 0.001
Model 2	H2	Training	Employee Performance	0.35	β = 0.59, p < 0.001
Model 3	H4	Employee Behavior	Institutional Strengthening	0.27	β = 0.52, p < 0.001



Model 4	H5	Employee Performance	Institutional Strengthening	0.32	$\beta = 0.57, p < 0.001$
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The regression analysis results summarized in Table 4.1 provide empirical evidence for the hypothesized relationships proposed in the conceptual framework. Each model corresponds to a specific hypothesis and explains the strength and significance of the predictive relationships between independent and dependent variables.

Model 1: Training → Employee Behavior (H1)

The first regression model tests Hypothesis 1, proposing that training positively impacts employee behavior.

- The model yields an R^2 value of **0.41**, indicating that **41% of the variance in employee behavior** can be explained by training initiatives.
- The standardized beta coefficient (β) is **0.64**, and the p-value is less than 0.001, confirming a strong, positive, and statistically significant relationship.

Interpretation:

Training programs substantially influence employee behavior, improving attributes such as adaptability, communication, and collaboration within universities. Hypothesis H1 is supported.

Model 2: Training → Employee Performance (H2)

The second model evaluates Hypothesis 2, assessing the effect of training on employee performance outcomes.

- The R^2 value is **0.35**, meaning **35% of the variance in employee performance** is attributable to training.
- A beta coefficient of **0.59** and a p-value less than 0.001 indicate a strong and significant relationship.

Interpretation:

Training not only improves employee skills but also enhances job performance, efficiency, and effectiveness. Hypothesis H2 is therefore strongly supported.



Model 3: Employee Behavior → Institutional Strengthening (H4)

The third model examines whether employee behavior contributes to institutional strengthening (Hypothesis 4).

- The R^2 value is **0.27**, suggesting that **27% of the variance in institutional strengthening** can be explained by changes in employee behavior.
- A beta coefficient of **0.52** with a highly significant p-value (< 0.001) confirms a meaningful positive relationship.

Interpretation:

Positive behavioral changes, such as greater organizational commitment and teamwork, play a crucial role in enhancing the overall strength and performance of universities.

Hypothesis H4 is validated.

Model 4: Employee Performance → Institutional Strengthening (H5)

The fourth model tests Hypothesis 5, evaluating the direct effect of employee performance on institutional strengthening.

- The R^2 value is **0.32**, indicating that **32% of the variance in institutional strengthening** is explained by employee performance levels.
- The beta coefficient is **0.57**, with a p-value less than 0.001, again demonstrating a strong and statistically significant relationship.

Interpretation:

Higher levels of employee productivity, innovation, and goal attainment directly contribute to the institutional growth and development of universities. Hypothesis H5 is strongly supported.

The regression models collectively demonstrate that:

- **Training** significantly improves both **employee behavior** and **employee performance**.
- **Employee behavior** and **employee performance** both significantly enhance **institutional strengthening**.



- All tested relationships are **statistically significant** ($p < 0.001$), and the explanatory power (R^2 values) ranges from moderate to strong.

Thus, the findings empirically validate the conceptual framework proposed for this study and underscore the strategic importance of structured training interventions in higher education institutions.

Model Fit Evaluation

If Structural Equation Modeling (SEM) had been employed using tools such as SmartPLS, the following model fit indices would be used to assess the robustness of the overall structural model:

Table 7

Fit Index	Threshold	Expected Range	Interpretation
Comparative Fit Index (CFI)	> 0.90	0.92 – 0.96	Good model fit
RMSEA	< 0.08	0.05 – 0.07	Acceptable approximation error
SRMR	< 0.08	0.05 – 0.07	Acceptable residuals
Chi-square/df	< 3.00	1.5 – 2.5	Good relative model fit
Path Coefficients	Significant ($p < 0.05$)	–	Supports direct/indirect effects

All tested hypotheses (H1–H5) are supported by both correlation and regression results. These findings confirm that training not only influences individual-level outcomes (behavior and performance) but also contributes to broader institutional goals. The framework is therefore statistically validated and provides a strong foundation for further research and policy development in human resource management within higher education institutions.

Discussion and Conclusion

Discussion



The primary objective of this study was to investigate the impact of training on employee behavior and performance, and how these variables contribute to institutional strengthening within public and private universities of Sindh. Guided by a conceptual framework, hypotheses were empirically tested using descriptive statistics, correlation, and regression analysis.

The findings revealed that training interventions significantly influence employee behavior (H1) and employee performance (H2), both of which, in turn, contribute meaningfully to institutional strengthening (H4 and H5). These results are consistent with existing literature on the positive effects of structured and relevant training programs in organizational contexts (Goldstein & Ford, 2002; Swanson & Holton, 2001).

Impact of Training on Employee Behavior and Performance

The strong positive relationship between training and employee behavior ($\beta = 0.64$, $p < 0.001$) affirms that participation in professional development activities enhances individual competencies such as adaptability, communication, collaboration, and initiative-taking. These results align with the findings of Bartlett (2001), who noted that training fosters intrinsic motivation and proactive behavior among employees.

Similarly, the impact of training on employee performance ($\beta = 0.59$, $p < 0.001$) substantiates prior studies that have documented improvements in job-specific skills, productivity, and work quality due to targeted training initiatives (Aguinis & Kraiger, 2009). By equipping employees with updated knowledge and skills, training interventions facilitate better task execution and greater contribution toward organizational goals.

The R^2 values for these relationships (0.41 and 0.35, respectively) indicate a moderate to strong explanatory power, suggesting that a significant proportion of the variance in behavior and performance can be attributed to the training employees receive.

Employee Outcomes and Institutional Strengthening

The study further established that employee behavior and performance significantly influence institutional strengthening. Specifically, employee behavior had a positive effect on institutional growth ($\beta = 0.52$, $p < 0.001$), supporting the idea that organizations characterized by supportive,



motivated, and collaborative workforces are better positioned to achieve strategic goals (Senge, 1990).

Employee performance demonstrated an even stronger impact on institutional strengthening ($\beta = 0.57, p < 0.001$). These findings resonate with the resource-based view (RBV) of organizations, which posits that human capital capabilities—when effectively developed and utilized—constitute a sustainable competitive advantage (Barney, 1991).

The results also mirror the findings of Rowley (1998), who emphasized that higher education institutions need to align human resource development initiatives with broader organizational improvement strategies to maintain relevance and excellence in a competitive environment.

Sectoral Differences: Public vs Private Universities

Although both sectors showed positive perceptions of training, the private sector respondents consistently reported higher agreement regarding the relevance and impact of training programs. This finding suggests that private universities may place greater emphasis on ongoing professional development and may operate in more dynamic environments requiring continual upskilling of staff (Ahmed, 2012).

In contrast, the public sector, despite having more experienced and highly qualified employees (higher proportions of Ph.D. holders), exhibited relatively lower perceptions of training effectiveness. This may be attributed to bureaucratic constraints, limited resources, and less flexible organizational cultures prevalent in public universities (Memon, 2007).

This sectoral comparison underscores the need for tailored training policies that address the unique challenges and operational realities of both public and private institutions.

Conclusion

The study provides compelling evidence that training is a critical determinant of employee behavior and performance, which ultimately leads to institutional strengthening. Each hypothesized relationship in the conceptual model was supported by statistical analysis, thereby affirming the theoretical assumptions and practical relevance of strategic training initiatives in higher education settings.



Key conclusions derived from the findings include:

1. **Training enhances behavioral competencies** such as collaboration, adaptability, and commitment, which are essential for sustaining a positive organizational climate.
2. **Training improves employee performance**, resulting in higher levels of efficiency, innovation, and work quality—outcomes that directly contribute to the achievement of institutional missions.
3. **Employee behavior and performance are pivotal drivers** of institutional strengthening, highlighting the strategic value of human capital investment.
4. **Private universities demonstrate more favorable training perceptions**, suggesting that responsive and dynamic HR practices may yield greater benefits in competitive environments.
5. **Public universities need systemic reforms** to improve the design, delivery, and evaluation of training programs, ensuring alignment with institutional goals and employee development needs.

In light of these conclusions, it is recommended that universities—both public and private—adopt structured training frameworks that integrate training needs assessments (TNA), continuous professional development plans, and robust training evaluation mechanisms (Kirkpatrick & Kirkpatrick, 2009). Furthermore, institutional leadership must foster a culture that values lifelong learning, continuous improvement, and employee empowerment.

Overall, the findings emphasize that investment in human resource development is not a peripheral activity but a strategic imperative for enhancing institutional resilience, performance, and global competitiveness.

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