

“STRATEGIC UPSKILLING AND WORKFORCE PERFORMANCE: EXAMINING THE MEDIATING ROLE OF EMPLOYEE ENGAGEMENT IN ORGANISATIONAL SKILL DEVELOPMENT INITIATIVES”

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Abstract

As technological and market demands evolve, strategic upskilling initiatives have become an essential component of contemporary human resource management. Organizations operating in today's knowledge-driven economy increasingly recognize the need for continuous skill development to remain competitive and enhance employee productivity. This study examines the relationship between strategic upskilling programs, employee engagement, and workforce performance, with particular emphasis on the mediating effect of employee engagement. A quantitative research approach was adopted, and primary data were gathered through a structured questionnaire administered to employees working in skill development organizations. The collected responses were analyzed using descriptive statistics, reliability analysis, correlation analysis, and mediation analysis. The findings indicate that strategic upskilling initiatives exert a significant positive influence on both employee engagement and workforce performance. In addition, the results confirm that employee engagement substantially mediates the association between strategic upskilling efforts and workforce performance. These findings suggest that organizations investing in employee training and continuous skill enhancement do more than strengthen workforce capabilities. They also foster a stronger psychological bond between employees and their work, which ultimately contributes to higher productivity and improved organizational effectiveness.

Keywords: Strategic Upskilling, Employee Engagement, Workforce Performance, Human Resource Development, Organisational Learning

1. Introduction

1.1 The Emerging Importance of Strategic Upskilling in Modern Organisations

Technological evolution, digital disruption, and swelling global competition are some of the key factors that has drastically changed the skill set required for work in various sectors. Organisations are realising that any competitive advantage which can be sustained is inextricably linked to the abilities of their employees and the organisations through which they learn. Thus, under this umbrella of new trends in workforce management, strategic up-skilling (the process of systematically developing employees’ skills through formal training and learning & development programming) has become an integral part of human resource management tools. The emergence of Industry 4.0 technologies like AI, automation and digital platforms require organisations to have a workforce with up-to-date technical, cognitive and adaptive skills as work becomes more productive and competitive (Brynjolfsson McAfee, 2014; World Economic Forum, 2023). Investing in employee skills strategically is not merely beneficial for the individual but also fortifies organisational resilience and innovation capacity (Noe et al., 2014). As a result, upskilling initiatives have become a cornerstone of workforce transformation efforts across both developed and emerging economies.

1.2 Organisational Skill Development and Workforce Performance

Skill development initiatives within an organisation make a significant contribution to enhancing the performance of the workforce and enabling employees with the skills necessary for performing tasks successfully and efficiently. As per Human Capital Theory, to increase productivity and enhance organisational success, investing in employees is vital, including staff training (Becker, 1993). It is well established through empirical studies that training and development improve employees' work performance, employee productivity or overall organisation (Salas et al., 2012; Tharenou et al., 2007). Additionally, skill development programmes help meet the changing work environment and technology-led disruptions, thereby enhancing overall agility of the organisation and contributing positively towards sustainable performance. Research in strategic human resource management also explained that organisations following a systematic approach towards workforce learning and development have higher levels of innovation, operational excellence and competitive advantage (Garavan et al., 2021). However, whereas the clear relationship between skill formation and performance has been widely documented, there is growing concern among scholars that psychological and behavioural processes might critically determine how such interventions translate into enhanced outcomes for organisations.

1.3 Employee Engagement as a Critical Organisational Resource

Commitment, productivity and success are all connected to employee engagement, which is why this concept has become of particular interest in organisational behaviour research. Engagement is defined as a positive, fulfilling work-related state of mind that is characterised by vigour, dedication, and absorption (Schaufeli et al., 2002). Engaged employees display more energy, dedication and absorption in their work roles, resulting in higher individual and organisational performance. According to the Job Demands–Resources (JD-R) model,

organisational resources like training opportunities, learning support and career development initiatives can promote employee engagement through fulfilling employees’ motivational and developmental needs (Bakker & Demerouti, 2017). Employees are likely to give back in return with a higher level of commitment and engagement if they feel the organisation is committed towards their growth and professional development. Research has revealed that engaged employees help organisations drive productivity, customer satisfaction, and innovation outcomes (Harter et al., 2002). As a result, engagement is viewed more and more as an important means by which HR practices affect performance outcomes.

1.4 Linking Upskilling Initiatives and Employee Engagement

According to recent research, opportunities for employee development are one of the most important factors that lead to engagement at companies. If employees feel that their organisation encourages them to grow professionally through training and skill development programs, it makes them more psychologically attached and motivated towards work. According to Social Exchange Theory, employees return positive attitudes and behaviours of the organisation that invests in them (Cropanzano & Mitchell, 2005), such greater engagement and performance. Upskilling initiatives indicate a commitment to developing employees, and which can bolster employees’ sense of worth, competence and career prospects.

1.5 Research Gap and Purpose of the Study

While previous research has looked at the relationships between training effectiveness, employee engagement and organisational performance, there have been limited studies examining how engagement mediates the relationship between strategic upskilling initiatives and workforce performance. While there exists a vast literature on the direct results of training programs, much less attention has been paid to the psychological mechanisms through which such initiatives are argued to influence employee performance. Moreover, there is limited empirical research that integrates strategic HRM perspectives and engagement theory to explain how skill development initiatives contribute to the sustainable productivity of the workforce.

2. Literature Review

2.1 Strategic upskilling in the Industry 4.0 and AI era

Upskilling is increasingly regarded by organisations as a strategic response to changing skill requirements brought about by digitisation, automation and AI-enabled work re-design. Modern HRM literature claims that the act of upskilling has transitioned from a training activity conducted at specific periods in time to a process of ongoing capability building designed to facilitate employability, adaptability and organisational competitiveness. One critical stream of research emphasises that upskilling in the new digital age demands not only technical skills (in terms of data and digital capabilities) but also complex cognitive and continuous learning abilities, meaning upskilling must be framed as a strategic HR lever instead of merely an operational training department.

2.2 Training and development as capability investment: evidence on performance outcomes

Many studies show that organisational investments in training and development pay off, at individual, team, organisational, and societal levels. Training has been linked with the improvement of job-related skills, productivity and quality outcomes as well as broader organisational effectiveness, particularly where learning initiatives are aligned to business goals and enabled by systems supporting this alignment. Beyond simply “whether training works”, the literature increasingly highlights the relevant mediators (how) and moderators (under what circumstances) of performance gains from training, advocating for models that include psychological and behavioural processes that intervene between investments in learning and work performance outcomes.

2.3 Employee engagement: concept, measurement, and relevance to performance

Employee engagement is conceptualised as a positive work-related state encompassing vigour, dedication and absorption, and has been pivotal in understanding how HR practices translate into outcomes. The literature on engagement scholarship thus provides a strong base for measurement, and in aggregate suggests that engagement is positively correlated with work attitudes and behaviours leading to performance. Evidence at a business-unit level also suggests meaningful associations between engagement and organisational outcomes, further supporting the case for treating engagement as a strategic construct linking people practices to workforce and business performance.

2.4 Why upskilling should influence engagement: Social Exchange and JD–R explanations

There are compelling theoretical reasons for expecting skill development initiatives to increase engagement. According to the theory of social exchange, if employees’ sense that the organisation invests in their growth, they are likely to return through enhanced psychological attachment and increased engagement. Engagement Theory also complements the Job Demands–Resources (JD–R) framework well, as learning opportunities and developmental support can be considered job resources that energise employees and increase engagement, particularly in ‘high demand’ environments. JD–R research has progressed significantly, building evidence for the mediating role of engagement in explaining how job resources translate into performance-related outcomes.

2.5 Engagement as a mechanism translating HR investments into workforce performance

A recurring question in the HRM–OB literature is how HR practices affect performance, and a common answer to this is that they do so through employees’ states and behaviours. Research suggests that engagement is linked with enhanced performance at work, discretionary effort and productivity-related outcomes [which indicates that organisations may miss out on a full return on investment from upskilling initiatives unless employees are incentivised to use and capitalise on new skills in the workplace]. Engagement is shaped by workplace norms and HR practice signals,

while supporting engagement as the intermediate mechanism linking developmental HR practices with performance.

2.6 Mediation logic and related evidence from strategic HRM and high-performance systems

In recent years, the strategic HRM literature has taken an even stronger action and developed mediation models that link HR practices to some intermediate employee perceptions/states that influence performance. Research on high-performance work systems (HPWS) offers pertinent evidence that performance effects are typically indirect, from motivational or psychological routes (including engagement-related mechanisms). This stream provides evidence that the positive impact of upskilling initiatives on workforce performance is likely to result not only from increased skill acquisition but also from enhanced levels of employee engagement. Moreover, research on strategic HRM indicates that “climate” mechanisms can mediate linkages between sets of HR practices and performance, further indicating the value of considering intermediate pathways in models of workforce performance.

2.7 Synthesis: positioning the current study

Synthesising from these streams, the literature suggests (a) that upskilling is strategically critical in digital transformation contexts, (b) that training investments are associated with performance, and (c) engagement is a theoretically driven and empirically established mechanism between organisational practices and outcomes.

3. Objectives of the Study

- To examine the influence of strategic upskilling initiatives on employee engagement within organisations.
- To analyse the impact of strategic upskilling initiatives on workforce performance.
- To investigate the relationship between employee engagement and workforce performance.
- To evaluate the mediating role of employee engagement in the relationship between strategic upskilling initiatives and workforce performance.

3.1 Conceptual Framework:

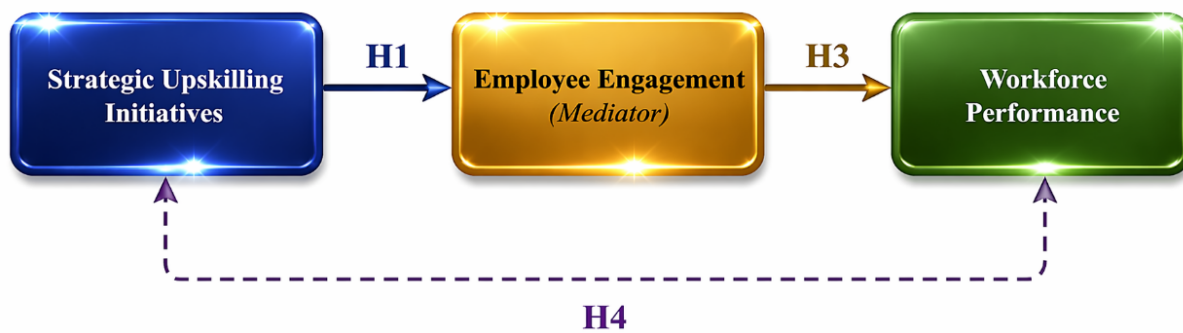


Figure 1: Conceptual Framework

The Conceptual Framework of the Study is a prototype, The Relationship between Strategic Upskilling Initiatives and Workforce Performance with Employee Engagement as Mediating Variable. According to the framework, organisational upskilling enhances employee engagement (H1), which in turn affects workforce performance (H3). Finally, competence-based upskilling initiatives will directly impact workforce performance (H2). H4: Employee engagement mediates the relationship between upskilling initiatives and the performance of the workforce.

4. Research Methodology

4.1 Research Design

This quantitative research aims to study strategic upskilling initiatives and their relationship with employee engagement and workforce performance. Primary data were collected from employees employed in organisations that follow a structured practice of skill development through a cross-sectional survey approach. This study uses a quantitative research design, which allows for the examination and testing of proposed hypotheses using statistical analysis to measure relationships between variables (Creswell & Creswell, 2018). This study aims to specifically examine the mediating effect of employee engagement on strategic upskilling initiatives and workforce performance.

4.2 Target Population and Sampling Frame

The study population are employees who work in organisations where the skill development and training programs are actually being implemented. Here, such organisations may comprise firms within the fields of knowledge-based, technology, manufacturing and services where constant adaptation and up-skilling of personnel is essentially required to remain in competition. Employees at different hierarchical levels are appropriate respondents as they experience organisational training initiatives directly and their impact on engagement and performance.

4.3 Sampling Technique

Using stratified random sampling participated in the study were selected to provide adequate representation of employees from diverse organisational contexts. Stratified sampling is used where the population can be divided into meaningful subgroups, e.g. department, job role or organisational level, and respondents are chosen within each subgroup on a proportional basis. This approach also enhances sample representativeness and minimises sampling bias (Sekaran & Bougie, 2019). In other cases where there were no complete sampling frames, convenience sampling within these organisational strata was also used to aid data collection.

4.4 Sample Size

This is going to make sure statistical analysis generates meaningful outcomes; it all comes down to having a large enough sample size. As suggested for behavioural studies as well as

structural equation modelling, having a sample size greater than 300 respondents is typically recommended to test mediation models (Hair et al., 2019). Thus, given that hypothesis testing requires adequate statistical power and strongly emphasises the robustness of analytical results, for this study, more than ~400–500 employees were collected.

4.5 Data Collection Procedure

To collect primary data for the study, a structured questionnaire survey was administered to employees in selected organisations. To allow more respondents, the questionnaire was sent through internet websites and direct organisational communication channels. Respondents were made aware of the goal of the study and that their answers would be kept anonymous and used solely for academic research purposes. The survey was voluntary and conducted after obtaining informed consent from participants.

A total of 12 constructs were included in this study that are derived and modified based on validated scales from previous studies used extensively in the field of human resource management and organisational behaviour literature. A five-point Likert-type anchor scale was used for all constructs with the endpoints 1 (Strongly Disagree) and 5 (Strongly Agree).

- **Strategic Upskilling Initiatives:** This dimension assesses organisations' initiatives to cultivate workforce skills via training programs, continuous learning initiatives, digital skill development and career improvement.
- **Employee Engagement:** Employee engagement was evaluated on the dimensions of vigour, dedication and absorption that reflect employees' psychological energy toward their job.
- **Workforce Performance:** Workforce performance refers to the ability of employees to perform tasks productively and toward the attainment of organisational goals.

4.6 Reliability and Validity of the Instrument

To ensure that the measurement instrument accurately and consistently produced these results over time, reliability and validity were assessed. Internal consistency reliability of the constructs was assessed using Cronbach's alpha coefficient. Generally, reliability coefficients above 0.70 are considered acceptable (Hair et al., 2019) for social science research. Construct validity was assessed, in addition, by performing factor analysis to validate that the items measuring both naturalness and group membership captured the theoretical constructs.

4.7 Data Analysis Techniques

Data was analysed by using statistical software like SPSS and AMOS/SmartPLS. The analysis took place in multiple concurrent stages. Demographic characteristics of the respondents and patterns across responses were first summarised using descriptive statistics. In order to ensure an adequate measurement scale, reliability and validity tests were performed. Then, correlation

analysis was conducted to explore the relationships among the study variables. Finally, we used structural equation modelling (SEM) and mediation analysis to test the hypothesised relationships, particularly investigating if employee engagement mediates the relationship between strategic upskilling initiatives and workforce performance.

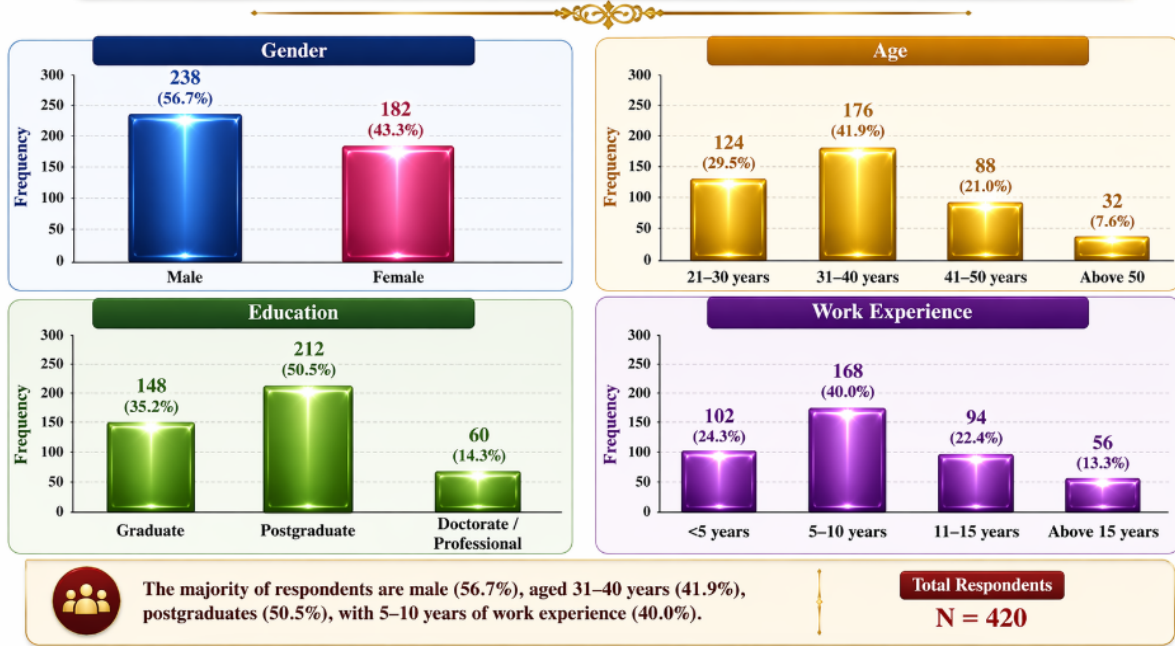
5. Results and Data Analysis

5.1 Demographic Profile of Respondents

Table 1: Demographic Characteristics of Respondents (N = 420)

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	238	56.7
	Female	182	43.3
Age	21–30 years	124	29.5
	31–40 years	176	41.9
	41–50 years	88	21.0
	Above 50	32	7.6
Education	Graduate	148	35.2
	Postgraduate	212	50.5
	Doctorate / Professional	60	14.3
Work Experience	<5 years	102	24.3
	5–10 years	168	40.0
	11–15 years	94	22.4
	Above 15 years	56	13.3

Chart 1: Demographic Characteristics of Respondents (N = 420)



According to the demographic profile of respondents, this study sample consists of a heterogeneous group of employees with diverse demographic features. 56.7% of the respondents are male while 43.3% are female; thus it can be stated that most of the participants involve two gender types (gender ratio, male to female was identified): Regarding the age distribution, most respondents are in the 31-40 years old (41.9%) and also 21-30 years (29.5%) group of age which means most participants are at their early & mid-career stages in professional life. In terms of education, most respondents have postgraduate degrees (50.5%) or qualifications at the graduate level (35.2%), indicating a highly literate and skilled workforce that is appropriate for continuing professional development initiatives and organisational learning. In terms of work experience, the largest group of respondents is 5-10 years (40.0%) and employees with less than 5 years (24.3%), which indicates that the sample has a considerable portion of moderately experienced employees who engage in activities related to skill development and organisational performance. In conclusion, the sample is demographically diverse in terms of education level, age group, and work experience of employees across industries (age-group), based on which, this study becomes autonomously significant to analyse the impact of strategic upskilling initiatives on employee engagement levels and their productivity at the workplace.

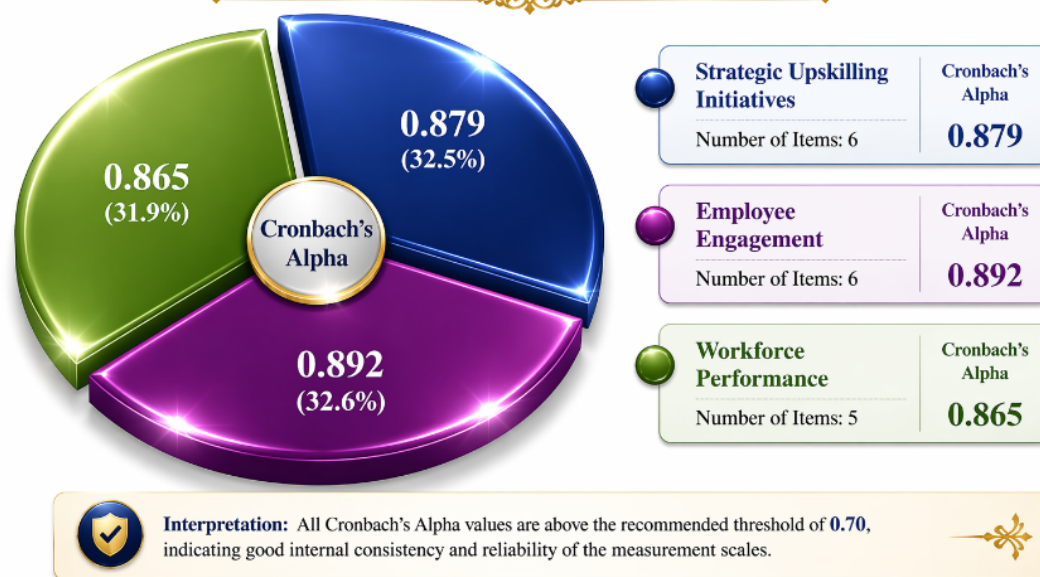
5.2 Reliability Analysis

Table 2: Reliability Statistics

Variable	Number of Items	Cronbach's Alpha
Strategic Upskilling Initiatives	6	0.879

Employee Engagement	6	0.892
Workforce Performance	5	0.865

Chart 2: Reliability Statistics

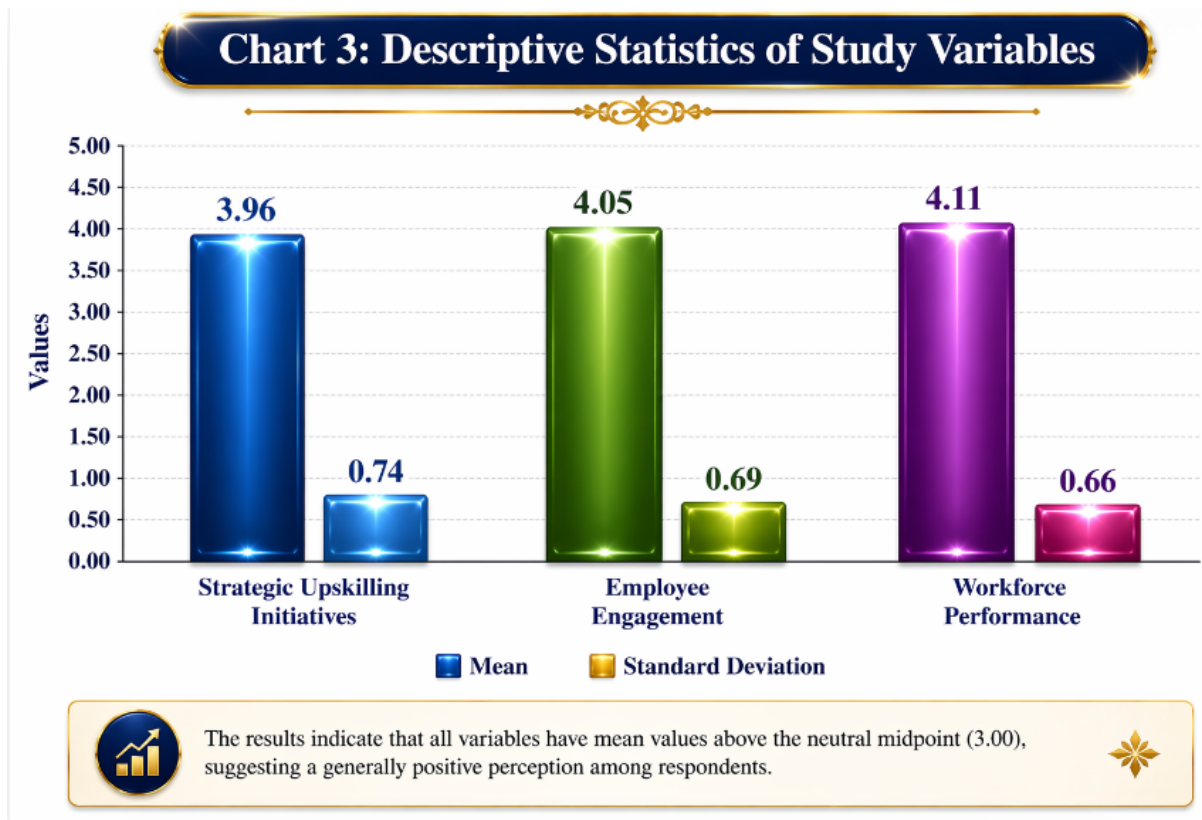


In the study, reliability analysis was performed to evaluate the internal consistency of measurement scales. For instance, Table 2 displays the results with respect to Cronbach's alpha values, depicting that all constructs exceed the threshold (0.70), thus showing high reliability. The constructs Strategic Upskilling Initiatives and Employee Engagement were found to have Cronbach's alpha values of 0.879 and the highest reliability of 0.892, respectively. Likewise, internal reliability was also high for Workforce Performance (Cronbach's alpha: 0.865). The items used to capture the various variables used in this research had good reliability, thus making them fit for carrying out further analysis.

5.3 Descriptive Statistics

Table 3: Descriptive Statistics of Study Variables

Variable	Mean	Standard Deviation
Strategic Upskilling Initiatives	3.96	0.74
Employee Engagement	4.05	0.69
Workforce Performance	4.11	0.66



The summary statistics shown in Table 3 display respondents’ assessment of the main study variables. Strategic Upskilling Initiatives has a mean score of 3.96, and a standard deviation score of 0.74, which reflects that an overall good number of employees feel a high level of initiatives focused on skill development are being nurtured within their organisations. Likewise, Employee Engagement shows a mean of 4.05 and a standard deviation of 0.69, which indicates that employees exhibit an excellent level of engagement in their work through involvement, motivation and commitment. For the three variables assessed, Workforce Performance shows the largest mean (4.11) and an SD of 0.66, indicating a favourable opinion regarding employee productivity and effectiveness in the workplace. In all, descriptive results show positive perceptions amongst employees about organisational upskilling initiatives, engagement levels, and workforce performance with low response variability.

5.4 Correlation Analysis

Table 4: Correlation Matrix

Variable	Strategic Upskilling Initiatives	Employee Engagement	Workforce Performance
Strategic Upskilling Initiatives	1		
Employee Engagement	0.64**	1	
Workforce Performance	0.58**	0.71**	1

The correlation analysis illustrated in Table 4 also demonstrates significant positive associations between the main study variables. Strategic Upskilling Initiatives exhibit a statistically significant positive correlation with Employee Engagement ($r = 0.64, p < 0.01$), implying that organisations effectively investing in skill development programmes tend to have higher employee engagement levels. Strategic upskilling initiative is positively correlated to Workforce Performance ($r = 0.58, p < 0.01$). More importantly, Employee Engagement has the strongest positive correlation with Workforce Performance ($r = 0.71, p < 0.01$), suggesting employee engagement is more likely to lead employees to perform better in their roles. Considering the previous, correlation results provide initial support for the proposed hypotheses of the study, indicating that variables are significantly associated in the proposed direction.

5.5 Regression Analysis

Table 5: Regression Results

Hypothesis	Relationship	β	t-value	p-value	Result
H1	Upskilling → Engagement	0.64	12.83	<0.001	Supported
H2	Upskilling → Workforce Performance	0.41	8.56	<0.001	Supported
H3	Engagement → Workforce Performance	0.53	10.21	<0.001	Supported

The regression analysis results presented in Table 5 indicate that all the hypothesised relationships are statistically significant. The findings show that strategic upskilling initiatives have a strong positive influence on employee engagement ($\beta = 0.64, t = 12.83, p < 0.001$), supporting Hypothesis 1 and suggesting that organisations that invest in skill development programs are likely to enhance employees’ psychological involvement and commitment to their work. Similarly, strategic upskilling initiatives significantly influence workforce performance ($\beta = 0.41, t = 8.56, p < 0.001$), indicating that training and skill development activities contribute to improved employee productivity and effectiveness. In addition, the results reveal that employee engagement has a significant positive effect on workforce performance ($\beta = 0.53, t = 10.21, p < 0.001$), confirming Hypothesis 3 and highlighting the importance of engaged employees in achieving better organisational outcomes. Overall, the regression results confirm that strategic upskilling initiatives and employee engagement play a significant role in enhancing workforce performance.

5.6 Mediation Analysis

Table 6: Mediation Effect of Employee Engagement

Path	Direct Effect	Indirect Effect	Total Effect	Significance
Upskilling → Workforce Performance	0.41	0.34	0.75	$p < 0.001$

As evidenced by the mediation analysis results provided in Table 6 below, employee engagement substantially mediates the relationship between strategic upskilling efforts and improvement in workforce performance. The direct effect of strategic upskilling initiatives on the workforce is 0.41, validating that organisational skill development initiatives will lead to increased employee productivity and effectiveness. Furthermore, 0.34 is the indirect effect through employee engagement, indicating that a significant portion of upskilling initiatives' effect on organisations' performance happens as employees grow increasingly motivated to work. The total effect of 0.75 is statistically significant at ($p < 0.001$), confirming that strategic upskilling initiatives' influence on the performance/workforce occurs both directly and indirectly through employee engagement.

5.7 Summary of Hypothesis Testing

Table 7: Summary of Hypothesis Testing

Hypothesis	Statement	Result
H1	Strategic upskilling initiatives significantly influence employee engagement	Supported
H2	Strategic upskilling initiatives significantly influence workforce performance	Supported
H3	Employee engagement significantly influences workforce performance	Supported
H4	Employee engagement mediates the relationship between upskilling initiatives and workforce performance	Supported

Based on the hypothesis testing results shown in Table 7, it can be stated that all of the hypotheses suggested by this study are supported. The results help inform that strategic upskilling initiatives serve as a strong predictor of employee engagement, meaning efforts made by organisations towards skill development seem to increase employee motivation and organisational involvement. Combined, the study confirms that employee engagement is a mediator in the relationship between strategic upskilling initiatives and workforce performance, indicating that skill development initiatives not only have a direct positive impact on workforce performance, but also an indirect impact via improving the level of employee engagement. Overall, these findings confirm the hypothesised conceptual framework of this study.

6. Discussion of Findings

The current research explored the relationship between strategic upskilling initiatives, employee engagement and workforce performance while focusing on the mediating role of employee engagement. The results provide empirical evidence in support of the hypothesised theoretical model and provide further understanding of how QWL initiatives for talent development affect employee outcomes and organisational performance. Strategic upskilling initiatives positively correlate with employee engagement. This indicates that companies that spend it in structured training programs, continuous learning & upskilling opportunities are likely

to exhibit higher employee engagement levels. Employees feel valued and motivated in their jobs when they believe the organisation is invested in developing skills and advancing their careers.

7. Managerial Implications

This study has important implications for managers as well as human resource practitioners seeking to improve organisational performance through establishing a strategic approach to developing their workforce. The findings indicate that organisations should approach upskilling initiatives as a strategic investment instead of yet another training activity, ensuring alignment of learning and development programs with the organisational goals and technological changes. They must implement structured skill development programs, such as in-house training, online courses, mentorships, and career progression, through which employees can continuously enhance their competencies. Simultaneously, organisations must take one step further in terms of creating a work environment that can stimulate high levels of employee engagement, given that engagement is one of the key mechanisms through which skill enhancement initiatives facilitate better performance and elevated output from their people.

8. Theoretical Contributions of the Study

Drawing on the strategic human resource management (SHRM), organisational learning and employee engagement literature, this study develops an integrated model explaining how strategic upskilling efforts impact the performance of the workforce.

9. Policy Implications

The results of this research provide significant implications for policymakers, government sectors, and institutional bodies concerning workforce development and employment systems. These outcomes underscore the significance of well-founded upskilling policies to elevate workforce productivity and employee engagement, which call for commitments from both national and organisational levels regarding the importance of lifelong learning.

10. Future Scope of the Study

While this study shows valuable empirical findings of the association between strategic upskilling initiatives, employee engagement and workforce performance, there are some avenues for future research. Longitudinal research designs will help to understand how long-term implementation of upskilling initiatives alters employee engagement and performance over time.

11. Conclusion

This study investigated the relationship between strategic upskilling initiatives and employee engagement as well as workforce performance with the emphasis on employee engagement being a mediator. Organisational investments in skill development initiatives are key influencers for enhancing employee engagement and workforce performance, as evidenced by the findings of Study. The findings show that the employers create motivation for work or commit employees to execute tasks through strategic upskilling initiatives which ultimately connects with employee engagement. The research also shows that implementing strategic upskilling initiatives

also correlates with employee engagement and performance, suggesting companies that invest in continuous learning and skill development can expect increased levels of productivity and organisational effectiveness. The mediation analysis further demonstrates that employee engagement plays a key role in how upskilling translates to performance outcomes. In conclusion, the study highlights that it is imperative for organisations to adopt an approach that fosters integration of strategic human resource development practices supported by engagement enabling organisation-wide strategies for achieving a competent, engaged and high performing workforce. Contextually, in the light of fast-paced changing technological and organisational market environment, investments made by organisations on continuous skill development with a proactive approach towards engaging their employees through involved learning will go a long way to not only ensure sustainable growth but also provide them with sustained competitive edge over its peers.

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