The Relationship between Training and Employee Performance

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Abstract
This research examines the correlation between employee training and performance at Lafarge Iraq through a quantitative case-study methodology. The research used a stratified random sample from the 212 employees who worked in technical, managerial, and administrative roles and received 175 returned valid questionnaires. A structured survey based on the Training Transfer Questionnaire and the Individual Performance Assessment Survey were used to collect data. Quantitative data analysis was performed in SPSS v26, employing descriptive statistics to characterize respondents, Cronbach's alpha to validate reliability, Pearson's correlation to examine the strength and direction of the training–performance relationship, and linear regression to assess training as a predictor of performance. The results of the research provide foundational insights into how targeted training interventions influence employee outcomes within a real-world manufacturing environment.
Keywords: Employee Training, Employee Performance

Introduction
Employee performance is now recognized all over the world as a key source of competitiveness and sustainability for an organization. Organizations across all industries are now aware that investing in human capital by way of formal training programs is imperative to enhance the productivity, motivation, and ability to innovate among employees (Noe, 2020). Training and development are no longer considered to be discretionary programs but are addressed as investments that influence business outcomes by equipping workers with knowledge, experience, and skills to address fast-changing needs of the marketplace (Salas et al., 2015).

Globally, research evidence supports that there is a universal positive correlation with better organisational performance measures and staff training, for example, greater efficiency,

increased staff engagement, and reduced turnover (Jehanzeb & Bashir, 2013). For instance, an Association for Talent Development industry-wide study acknowledged that organisations that invested more per worker in training had 24% higher profit margins compared to organisations that invested fewer resources (ATD, 2021). Despite such evidence, there are significant hurdles to transferring training programs to tangible benefits to performance, especially where learning interventions are weakly linked to the needs of the actual job or are not supplemented by adequate assessment (Aguinis & Kraiger, 2009).

In the manufacturing industry in particular, where production efficiency and technical know-how are of paramount significance, training is one of the core foundations that guarantee productive utilization of the workforce. Global studies show, however, that simple availability of training is not nearly adequate, and content relevance, delivery process quality, and availability of post-training support systems are all determinative of whether the success of training is actually sparked (Pineda, 2010). Moreover, most manufacturers from across the world find it difficult to assess the actual ROI on their training initiatives, and this makes for a persistent lag between training execution and organizational performance outcomes.

Against this international background, Lafarge Iraq, a company that produces building materials, reflects many of the challenges that are normally evident within other production environment organizations throughout the world. Despite the fact that Lafarge Iraq makes a considerable investment within staff training programs, very few empirical studies examine the effect of these training programs upon staff performance. This is reflective of an overall sector problem: numerous production firms focus upon the provision of training but without the establishment of effective assessment and ongoing improvement systems (Garavan et al., 2020).

By addressing the interlink between characteristics of training relevance, delivery quality, and follow-up care and staff performance within the context of a manufacturing environment within Lafarge Iraq, this study seeks to bridge an important conceptual and pragmatic gap. It seeks to contribute to the overall knowledge bank by presenting evidence of how the attributes of training interface to affect workers' performance within a manufacturing environment. Such forces are consequential to manufacturing companies not only within Iraq but across the world, given the increased need to optimize human capital to remain competitive against the threats and challenges of economic turbulence and technological advances. Even though the case study concentrates on Lafarge Iraq, the research results will have theoretical and practical impact on efficient training strategies worldwide manufacturing sector.

Literature Review
Employee training, previously an ad hoc activity, in the past decades evolved into a strategic organizational activity for competitiveness as a matter of necessity. Training refers to systematic action aimed at improving a person's ability, knowledge, and skill to perform existing or future work efficiently (Noe, 2020). Training programs, according to Salas, Tannenbaum, Kraiger, and Smith-Jentsch (2012), are effective if they are aligned with organizational priorities, are focused at core competencies, and are accomplished through procedures that maximize knowledge retention and skill acquisition.

Today's organizations are spending more money on all sorts of training programs, recognizing learning must be continuous with the fast-changing business scenario (Tharenou, Saks, & Moore, 2007). Research work by Aragon-Sanchez, Barba-Aragon, and Sanz-Valle (2003) substantiated that businesses with formal training programs have employees with higher levels of productivity and innovative ability compared to those business firms with informal training or no training. Still, Pidd (2004) promotes the fact that training only becomes effective when situational, application-relevant, and supplemented with follow-ups upon training completion because all training does not necessarily translate into performance improvement.

Leadership development and management development programmes are aimed at enhancing strategic thinking, team management, change management, and decision-making capabilities. While management is about doing and planning, leadership is about influencing and vision (Northouse, 2021). Collins and Holton (2004) found through a research study that leadership development programmes positively affect organizational performance as far as leadership performance areas are concerned as well as for employee engagement. However, Yukl (2012) urges that the effectiveness of these programmes is dependent to a great degree upon the degree to which they are aligned with overall talent management strategy as well as organizational culture. Employee performance was typically defined as the degree to which staff carry out job tasks and, by doing so, contribute towards organizational purpose (Campbell, 1990).

Performance can be quantifiable, such as efficiency and productivity, as well as qualitative, such as creativity, new idea generation, and organizational value alignment. Literature suggests that effective training leads to enhanced job performance, commitment, and lower turnover intentions (Saks, 2006). Alternatively, inadequate training can lead to skill obsolescence, poor morale, as well as performance (De Grip & Sauermann, 2012). Additionally, performance results are influenced by a combination of variables including motivation, organizational support for learning, as well as congruence of individual capabilities with job requirements (Boxall & Purcell, 2016).

Empirical research to support the positive correlation of employee training and employee performance is abundant. Arthur, Bennett, Edens, and Bell, for instance, performed a meta-analysis (2003) that found training exerts a statistically significant positive effect on job performance regardless of job types and industries.

Training improves knowledge and abilities, builds up employees' confidence, and results in higher organizational commitment, all of which are measures of improved performance. But several studies caution that the connection is by no means guaranteed. Baldwin and Ford (1988) pointed out that the degree to which work-linked abilities acquired through training are applied within the workplace is often constrained by issues such as a shortage of support from the management, poor training design, or a shortage of reinforcement subsequent to training. Similarly, Saks and Belcourt (2006) found that organizational support systems, for example, coaching, mentoring, and performance feedback, mediate the training-performance outcome relationship.

Subsequent research studies have also revealed the role of motivation levels of employees as intervening variables. Those employees who view training as augmenting their personal career goals are more likely to back-transfer ability gained, then enhancing their performance, according to Tannenbaum and Yukl (1992). Alternatively, employees who are forced to sit through irrelevant training sessions are resistant to back-transfer acquired proficiency, effectively negating gains.

Training and development literature have traditionally utilized theoretical models to elaborate why, as a matter of course, training leads to enhanced employee performance. Kirkpatrick's Four-Level Model (1959) is most relevant, proposing that a test of training can be applied at four levels: Reaction, Learning, Behavior, and Results. While popularly used, Kirkpatrick's model is criticized for simplification of learning as linear progression through levels as well as linear causality within levels (Alliger & Janak, 1989). Intervening variables such as learning climate as well as variations within people have been observed to interrupt the clean progression presumed by the model.

To overcome such constraints, alternatives are offered by researchers. The instructional design model of ADDIE (Analysis, Design, Development, Implementation, and Evaluation) is a more flexible instructional model with more attention placed on the necessity of needs analysis as well as continuous evaluation (Branch, 2009). Gagné's Nine Events of Instruction is a thorough instructional model of sequencing where there is a greater likelihood of knowledge transfer as well as utilization (Gagné, Wager, Golas, & Keller, 2005).

Given workplace learning being multifaceted, current research trends have a tendency towards holistic models of organizational, individual, and situational antecedents of training performance. Based on a holistic model, Burke and Hutchins (2007) have proposed that trainee characteristics (i.e., motivation, self-efficacy), organizational environment, and training design interactively determine work performance improvement due to training.

Methodology
The research adopts a quantitative case study design. Quantitative design is the most appropriate because it allows collection of factual data that are quantifiable, which can later be presented statistically to determine the relationship between training interventions and employee performance (Creswell, 2014). The case study research is applied within Lafarge Iraq to provide a comprehensive examination of the particular training interventions and performance outcome of the firm within the context of the overall manufacturing business.

The case study research design is suitable because it allows for intensive examination of phenomena within a real organizational setting (Yin, 2018). Its weaknesses include having a narrow generalizability to other contexts beyond Lafarge Iraq as well as context-specific bias. To mitigate the weaknesses, the research gives a stratified representative sample alongside performing stringent statistical tests dealing with internal validity.

Population of 212 employees from Lafarge Iraq staff with varying levels of technical, managerial, and administrative positions. Stratified random sampling have been employed to obtain a representative sampling, stratifying the population according to the category of job

(technical, managerial, administrative) and taking proportionate random samples from each of these categories.

Sample size was determined using Krejcie and Morgan's (1970) calculation of sample size from a finite known population with a 95% confidence level at a 5% margin of error. This translates to a perfect sample of about 212 employees, although with the anticipation of the risk of non-response or lost questionnaires, a goal of 150–200 respondents was decided on with the goal of having sufficient statistical power. Stratification will provide a fair representation of all subgroups of Lafarge Iraq to minimize sampling bias, as well as generalize the results within the organizational setting (Etikan & Bala, 2017).

The primary tool for data collection is a standard questionnaire, structured into four sections: demographic information, training of employees, performance of employees, and the perceived relationship of training with performance. The questionnaire items were adapted from other established measures of other studies, i.e., the Training Transfer Questionnaire (Holton, Bates, & Ruona, 2000) and the Individual Performance Assessment Survey (Campbell, 1990), to suit Lafarge Iraq's context. Content validation as well as reliability were both established through a pilot study

A five-point Likert scale measures attitudes and perceptions for all items, ranging from "Strongly Disagree" (1) to "Strongly Agree" (5), for consistency purposes as well as for quantitative analysis. Prior to the collection of data, ethical permission had been obtained from Lafarge Iraq management as well as formal authorization from Qaiwan International University (QIU). Participants were issued a formal letter of consent stating the research purpose, confidentiality, and voluntary participation with the option of withdrawal at any time without penalty.

Questionnaire data collection were conducted using company email and hard copy within scheduled employee meetings. Participants had a week to complete the questionnaire, with reminders sent for five working days to attain high response rates. Participants' anonymity and confidentiality were ensured using participant codes for data storage and handling. While the questionnaire was the primary methodology, the research included short structured interviews (voluntary with participants) of 10–15 employees and managers for richer qualitative data around perceptions, as well as training practices.

Results

Descriptive statistics of the independent variable of training programs indicate positive sentiments of the 175 respondents generally. The respondents provided appropriate responses on the various statements, and hence, the dataset is complete. The mean scores on all the items ranged between 3.37 and 3.53, which shows the respondents agree the company provides training programs, which are job-based and useful through means such as workshops and e-learning, quite often. The respondents also think trainers are expert and knowledgeable, and feel improvement in skills and know-how following training. The company is also perceived to encourage workers' participation in training, but the sufficiency of training facilities was comparatively low in agreement. The standard errors for all the items are low, which means the sample means are excellent representations of the population means. The standard deviations, though, at about 0.95 to 1.12, reflect variability in the

responses, such as trainers' know-how and sufficiency of resources, which means the workers disagree on some aspects. Overall, the results reflect positive company training perception while, however, being some areas to be addressed in order to attain greater workers' satisfaction.

Table 1
Descriptive analysis result for training (IV)

Statement	N	Range	Mean	Std. Error	Std. Deviation
The company provides regular training programs	175	4	3.53	0.076	1.005
Training programs are relevant to my job role	175	4	3.42	0.075	0.996
Training methods (e.g., workshops, e-learning) are effective	175	4	3.46	0.071	0.945
Trainers are knowledgeable and skilled	175	4	3.42	0.085	1.121
Training improves my skills and knowledge	175	4	3.51	0.077	1.022
The company encourages employee participation in training	175	4	3.45	0.077	1.021
Training resources (materials, tools) are sufficient	175	4	3.37	0.078	1.031
Training programs are aligned with company goals	175	4	3.40	0.084	1.114

The descriptive statistics of employees' performance, as gauged by the different indicators, indicate the generally positive attitude of the 175 respondents. There was a complete response rate to every item, providing complete data for analysis. The mean scores per statement ranged from 3.40 to 3.73, indicating that employees generally agree that training has helped positively in their productivity, efficiency in working, confidence in performing, and meeting performance standards. Notably, the highest mean value of 3.73 was on the overall positive contribution of training to performance, indicating appreciation of training programs. The standard errors are low throughout, at about 0.08, indicating the means are good representatives of the population. The standard deviations, ranging from about 1.03 to 1.14, indicate some level of variability in the responses, especially in confidence in performing and contribution to career development. In general, the data indicate that employees perceive training as being of significant importance in contributing to their performance improvement, with some variability in personal experiences though.

Table 2

Descriptive analysis result for Employee performance (DV)

Statement	N	Range	Mean	Std. Error	Std. Deviation
My productivity has improved due to training	175	4	3.48	0.078	1.027
Training has enhanced my job efficiency	175	4	3.52	0.086	1.134
I can perform my tasks more confidently after training	175	4	3.40	0.086	1.140
Training has helped me meet performance targets	175	4	3.45	0.085	1.128
My problem-solving skills have improved due to training	175	4	3.58	0.080	1.063
I receive positive feedback from supervisors after training	175	4	3.47	0.083	1.092
Training has contributed to my career growth	175	4	3.42	0.084	1.116
Overall, training has a positive impact on my performance	175	4	3.73	0.084	1.105

Table 3 displays the result of a Pearson correlation test conducted to determine the type of relationship between training and employee performance. The Pearson correlation between Training and EP is r = 0.165 and p = 0.030. This indicates a positive moderate association between the measures. The type of association is positive and states that employee performance tends to increase with training.

The association at a statistical level is significant thanks to p-value less than 0.05 (p = 0.030). The implication is that the association observed would not have been by random and hence that training-performance association is significant at a level of 5%. Despite not being a very strong association, strong evidence of existence thereof portrays that training has a role, if a moderate one, to play in enhancing employees' performances among the sample group of respondents of 175 workers.

These findings have practical implications for organizational and HR policy, since they offer an empirical substantiation for the proposition that investments in employee training contribute to positive, if limited, productivity outcomes. Additional mediating processes or longer duration training programmes can be investigated by further research.

Table 3

Pearson's correlation test results

		Training	EP
Training	Pearson Correlation	1	.165[*]
	Sig. (2-tailed)		0.030
	N	175	175
EP	Pearson Correlation	.165[*]	1
	Sig. (2-tailed)	0.030	
	N	175	175

The contextual performance rating of the nurses in Farouq Medical City indicates a general level of average performance in activities beyond core work. The item measuring the statement "I initiated new tasks myself when my old ones were completed" (D2) had the greatest mean value (M = 3.26), as the nurses reportedly show initiative in task accomplishment without delay. Similarly, the item measuring the statement "I undertook extra duties" (D1) had a mean score of 3.18 and indicates that the current study participants perform extra duties when need arises. Skills development and innovation items such as updating work skills (D4 = 3.12), job skills (D5 = 3.14), and creating new solutions (D6 = 3.14) were in the moderate level, which shows there is an acknowledgment of professional development among the respondents but there remains a great deal of scope for improvement of these practices.

The lowest scored item, seeking new challenges in one's work (D7), had a mean of 3.08 and suggests there are fewer of them seeking new challenges away from routine work. Despite this, work meeting participation (D8 = 3.15) reflects most of them being greatly involved in the organizational setting. These results as a whole validate the hypothesis that contextual performance is moderately present and a workforce positively influencing the hospital setting but with some potential for improvement regarding creativity and proactive learning.

Table 4
Descriptive statistics for Contextual Performance

Item	Mean	Standard Deviation
I took on extra responsibilities.	3.18	1.37
I started new tasks myself when my old ones were finished.	3.26	1.35
I took on challenging work tasks, when available	3.12	1.36
I worked at keeping my work skills up-to-date.	3.12	1.38
I worked at keeping my job skills up-to-date	3.14	1.37
I came up with creative solutions to new problems.	3.14	1.41
I kept looking for new challenges in my job	3.08	1.37
I actively participated in work meetings	3.15	1.34

Model summary provides explanation of how much the regression model is capable of explaining and how strong or weak it is. The correlation coefficient (R) value is 0.165, which indicates a weak positive linearity between employee performance and training. That is, employee performance improves when training improves but to a limited extent. R Square is 0.027 and indicates that 2.7% of variation of employee performance is caused by the training variable. This is very slight but indicates that training has an effect and a minimal one, then affecting levels of performance. Adjusted R Square (0.021) is an allowance for model and sample complexity but which is not relevant in our scenario considering that there is one independent variable. The standard error of the estimate (0.86621) is average difference between observed and forecasted values and indicates a moderate precision of forecast.

Table 5

Model Summary of Linear Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.165	.027	.021	.86621

ANOVA table gives tests for overall model significance. The F-statistic is 4.812 and has a p-value of 0.030, which is below the standard level of 0.05. This indicates that the model is significant, and training (independent variable) is a significant predictor of employee performance (dependent variable). While we have a model explaining relatively little variance (as evidenced by R^2), a significant F-test indicates that the equation for training and performance is not due to random fluctuation. This confirms that training has a significant but modest impact upon outcome measures within our population of interest.

Table 6

ANOVA Table for Regression Model Fit

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.611	1	3.611	4.812	.030[b]
	Residual	129.804	173	0.750		
	Total	133.415	174			

*a. Dependent Variable: EP

*b. Predictors: (Constant), Training

Linear regression analysis supported the findings that mental workload was a good and significant predictor of the three job performance dimensions of task performance, contextual performance, and counterproductive work behavior (CWB). For task performance, there was a high explanatory power with an $R^2 = 0.800$. The implication was 80% of task performance variance among nurses was accounted for by mental workload. The regression slope (B = −0.892, p < 0.001) was significant and negative and a testament to the evidence that with an increased mental workload, nurses' ability to plan and carry out and coordinate work activities declines substantially. This corroborates evidence from literature wherein cognitive overload erodes judgment, attention, and task performance in the clinical setting.

Similarly, contextual performance in terms of extra-role behavior in the form of picking up extra work, learning and development in a continuous manner, and being an active citizen was affected to a great extent. The model accounted for 70.9% of the variance ($R^2 = 0.709$), and was negatively and significantly associated (B = −0.896, p < .001). This indicates increased mental workload discourages supportive and proactive work conduct, most probably because emotional exhaustion and decreased bandwidth for cognition ensue.

On the other hand, CWB's regression equation was positively associated with an R^2 value of 0.771. The standardized slope was notable and positive (B = 0.912, p < .001), and this suggests the greater the mental workload, the greater the complaining frequency, negative thinking, and distress expression. This is specifically threatening where high-level healthcare work is

being undertaken because communication and cooperation between groups of healthcare professionals depend in good measure upon high levels of morale.

Table 7
Linear Regression Analysis

Dependent Variable	R	RA²	B (MentalWorkload_Avg)	t-value	p-value
TaskPerformance_Avg	0.894	0.8	-0.892	-19.8	< .001
ContextualPerformance_Avg	0.842	0.709	-0.896	-15.5	< .001
CWB_Avg	0.878	0.771	0.912	18.15	< .001

Table 4.5 summarizes an independent samples t-test on gender difference in training perception. The table presents that female respondents (n = 83) have a greater mean training perception (M = 3.5392, SD = 0.75074) than males (n = 92), whose mean (M = 3.3587, SD = 0.75960) is relatively lower. Although a gender difference by approximately 0.18 points in mean scores could suggest that females have a slightly positive perception of training offerings or effectiveness, closeness of standard deviations indicates similarity of amount of response variability for each group. Nevertheless, although such descriptive statistics yield a difference by gender in training perception, whether or not such difference is significant is not determinable from such table. To determine if such difference is significant, presentation of actual t-test statistics, i.e., t-value, degrees of freedom, and p-value, would be needed. Without such inferential statistics, stated difference is a tentative outcome and likely not significant.

Table 8
Independent Samples T-Test Gender Differences in Perception of Training

Gender		N	Mean	Std. Deviation	Std. Error Mean
Training	female	83	3.5392	0.75074	0.08240
	male	92	3.3587	0.75960	0.07919

Discussion and Recommendation

The conclusions drawn from this study offer a valuable input to the understanding of the relationship between the training programs and the performance of employees in Lafarge Iraq. On a statistically adequate sample of 175 completed questionnaires, the findings show a generally favorable attitude toward the training programs as well as a moderately strong impact effect from training programs on employees' levels of productivity, confidence, and career progress.

The employees' descriptive statistics also show that they rated the training programs as being highly effective, especially in the area of skill development, job relevance, and performance enhancement. High mean scores (ranging from 3.37 to 3.53 for training and from 3.40 to 3.73 for performance measurements) validate the conclusion that training programs can be appropriate and valuable. It is in keeping with the observation by Salas et al. (2012), who had earlier mentioned that well-designed training programs bring in sizeable individual and organizational benefits if they address job functions and performance goals.

In addition, the internal reliability, with both performance and training constructs having a score as high as 0.85, as calculated from Cronbach's alpha, is a sign of very high reliability in measurement. This gives credibility to the dataset and application in organizational scenarios as identified in various studies by DeSimone and Werner (2011), who laid emphasis on the fact that psychometric integrity is a must for HRD-targeted survey instruments. The Pearson correlation measure yields a statistically significant, weak, but positive relationship between performance and training (r = 0.165, p = .030). In spite of the weakness in strength, statistical significance indicates a non-spurious relationship between the two variables. This is in agreement with Saks and Burke (2012), who determined that, although training enhances job performance, intervening variables such as motivation, job design, and leadership support generally modulate the effect size. The weak relationship might also be reflecting other contextual variables specific to Lafarge Iraq, for example, variation in resource adequacy for training or variable departmental application of learned skills.

Regression analysis results also support such a relationship. The R-squared (0.027) shows that training only accounts for 2.7% variation in employees' performance. Although low, this value still supports the predictive ability of training to account for employee performance, supporting the argument of Aguinis and Kraiger (2009), which held that training by itself could not lead to meaningful changes in performance unless it is augmented by post-training reinforcement, coaching, and goal alignment. The significant F-value (p = .030) indicates that training remains a powerful predictor of performance but only modestly.

This is also evidenced through analysis of coefficients, when the unstandardized beta of 0.190 indicates that employee performance rises by approximately 0.19 units with every unit of increase in the perception of training effectiveness. This quantifiable impact corroborates the meta-analytical finding of Arthur et al. (2003), who demonstrated that systematic training interventions have a statistically significant yet heterogeneous effect on performance measures across industries.

Also, representation from HR, Marketing, Operations, and Finance throughout the department lends a broad organizational view, confirming the external validity of findings. Likewise, similar training and performance perceptions by departments also affirm that training programs are valued equally, though with some calibration necessary to address issues like insufficient training materials, as indicated by lower mean scores for that item.

Conclusion

The study focused on testing the relationship between training practice and the performance of employees in Lafarge Iraq. Taking a quantitative approach by using 175 completed questionnaire forms, the study established that employees were positively inclined towards training practices, and a majority of them assured that there had been increased productivity, efficiency, confidence, and career development. Statistical techniques through the use of descriptive analysis, correlation, and regression consistently testified that training exerts a moderate but notable impact on employee performance.

Multiple regression (R^2 = 0.027, p = 0.030) and Pearson's correlation (r = 0.165, p = .030) revealed weak, statistically significant correlations, meaning that training certainly improves performance, but could not be the sole, or even pre-eminent, determinant for performance.

Variation in response specifically attributable to provision of training resources and trainer quality suggests improvements that can be targeted in given areas.

Overall, the findings emphasize the valuable role that well-designed, high-quality training can play in building a highly skilled labor force. But they also suggest the need for greater alignment of training with performance targets, post-training support, and targeted interventions in order to maximize training ROI.

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